ISSN 2559 - 723X
ISSN-L 2559 723X
e-ISSN 2601 - 1700

Indexed in
SCOPUS, EBSCO

Surgery, Gastroenterology and Oncology

Volume 28, Supplement II, 2023

Abstracts of Papers Submitted to the IASGO 34th World Congress of the International Association of Surgeons, Gastroenterologists and Oncologists

September 9-12, 2023, Verona, Italy

Official Journal
of the International
Association of
Surgeons,
Gastroenterologists
and Oncologists

CELSIUS PUBLISHING HOUSE

www.sgo-iasgo.com

Surgery, Gastroenterology and Oncology

official journal of the
International Association of Surgeons and Gastroenterologists and Oncologists

Surgery, Gastroenterology and Oncology
(formerly published as *Journal of Translational Medicine and Research*)
is attested and indexed in Elsevier Bibliographic Databases: SCOPUS

CrossRef (DOI: 10.21614/sgo)

Surgery, Gastroenterology and Oncology = ISSN 2559 - 723X,
ISSN-L 2559 723X , e-ISSN 2601-1700

Celsius Publishing House

IASGO
34TH WORLD CONGRESS OF THE INTERNATIONAL ASSOCIATION OF SURGEONS, GASTROENTEROLOGISTS AND ONCOLOGISTS

WEAVING THE FUTURE

ABSTRACTS OF PAPERS SUBMITTED TO THE 34TH WORLD CONGRESS OF THE INTERNATIONAL ASSOCIATION OF SURGEONS, GASTROENTEROLOGISTS AND ONCOLOGISTS

September 9-12, 2023, Verona, Italy

Surgery, Gastroenterology and Oncology
Supplement II, Volume 28, 2023

Abstract Book

LAPAROSCOPIC COMPLETION PANCREATECTOMY AFTER A PRIOR ROBOT-ASSISTED LAPAROSCOPIC WHIPPLE'S PROCEDURE

Wei-Liang Loh, Brian Kim Poh Goh
Singapore General Hospital, Singapore, Singapore, Singapore

Background and Purpose: We present a laparoscopic completion total pancreatectomy after a previous robot-assisted laparoscopic Whipple's procedure, with a classical retro-mesenteric isoloop reconstruction and antecolic gastrojejunostomy, in a 62 year old male with a history of diabetes mellitus. He underwent the robot-assisted laparoscopic Whipple's procedure in November 2017 for a T3N1 colloid carcinoma. The pancreas resection margin was 15 mm and the rest of the margins were negative. He underwent 6 months of adjuvant gemcitabine and Xeloda. In March 2021, there was a rise in CA 19-9 levels from 27 to 44 but scans showed no evidence of disease. He underwent a 6 cycles of TS-1 until August 2021 with stabilization of his CA 19-9 levels. In January 2022, there was a further increase of his CA 19-9 levels to 100, and CT scans revealed a 1.6cm hypodense lesion in the pancreatic body, suspicious for local recurrence.

Material and Methods: The main steps of the procedure: - LGA/V preservation; - Dissection of PJ limb and separation from GJ; - Dissection of pancreas posterior border off splenoportal confluence; - Creation of SMV/PV tunnel; - Division of jejunal limb of PJ; - Division of splenic vein and artery; - Division of gastrocolic ligament; - Mobilization of pancreas off retroperitoneum.

Results: The patient had an uneventful post-operative recovery and was discharged after 3 days. Histology showed Grade 2 colloid carcinoma rpT1cN1, 1/11 eleven lymph nodes positive, with margins clear. There were no post-operative complications and he was started on adjuvant chemotherapy (mOLFIRINOX) 6 weeks post-surgery.

Conclusion(s): Laparoscopic total completion pancreatectomy is feasible after prior Whipple's procedure, but requires careful dissection and anatomical understanding. The use of high-definition optics, energy devices, and technical mastery are key to the success of the procedure. Repeat laparoscopic pancreatic surgery should be attempted in carefully selected patients so long as local expertise and equipment are available.

Keyword(s): pancreatectomy, Whipple's, pancreatoduodenectomy, laparoscopic, completion pancreatectomy

EXTENDED RIGHT HEPATECTOMY WITH INFERIOR VENA CAVA RESECTION UNDER TOTAL VASCULAR EXCLUSION, VENO-VENOUS BYPASS AND IN SITU HYPOTHERMIC PERFUSION OF THE FUTURE LIVER REMNANT: THE CONVENTIONAL AND THE ANTE-SITUM TECHNIQUES

Pietro Addeo, Pierre De Mathelin, Philippe Bachellier

HPB surgery and liver Transplantation, University of Strasbourg, Strasbourg, France

Background and Purpose: Venous obstruction at the hepatic veins- inferior vena cava confluence can be particularly challenging to manage if an associated liver resection is needed. Total vascular exclusion and hypothermic in situ perfusion of the future liver remnant can be used in these conditions. We present two extended liver resections for adrenocortical carcinomas (ACC) performed using this technique.

Material and Methods: The first patient is a 58-year-old female patient presenting with a voluminous ACC of the right adrenal gland invading the right kidney, the segment 6 of the liver and the retrohepatic inferior vena cava with intraluminal thrombus extending up to the hepatic veins confluence into the inferior vena cava. The second patient is a 60-years-old woman with a recurrent ACC with a tumoral thrombus extending over the hepatocaval confluence.

Results: The parenchymal liver transection is performed under a veno-venous bypass and a total vascular exclusion. In situ hypothermic perfusion of the future liver remnant is performed in order to decrease blood losses and to reduce the risk of postoperative liver failure. In the classical approach a right hepatectomy extended to the inferior vena cava and segment 1 is performed and the IVC is reconstructed by a ringed Gore-Tex prosthesis with reimplantation of the left renal vein. In the ante-situm approach the inferior vena cava up to the atrium is resected and the common vein trunk is reimplanted over a Gore-tex prosthesis.

Conclusion(s): The presence of obstruction of the hepatic veins –inferior vena cava confluence makes challenging liver transection. Total vascular exclusion with venovenous bypass and in-situ liver hypothermic perfusion increases the safety of liver resection in presence of extensive venous obstruction.

Keyword(s): venovenous bypass, in-situ liver hypothermic perfusion, total vascular exclusion, adrenal carcinoma, inferior vena cave, right hepatectomy

ROBOTIC-ASSISTED LEFT PANCREATECTOMY WITH KIMURA TECHNIQUE AFTER PANCREATITIS

Francesca Pegoraro[1], Silvia Curcio[2], Tarek Kellil[1], Francesca Giampaoli[1], Curro' Giuseppe[2], Michele Ammendola[2], Tullio Piardi[1]

Centre Hospitalier de Troyes, Chirurgie Hıpato-Bilio-Pancrıatique et Mıtabolique, Troyes, France[1] - Universitů Magna Graecia, Unitů di Chirurgia Generale, Catanzaro, Italy[2]

Background and Purpose: When treating non-malignant or borderline tumors of the body and tail of the pancreas, spleen preservation is possible and recommended by recent literature. The minimally invasive approach is now globally accepted and reproducible. Robotic dissection significantly improves the dissection phase, especially when adhesions or severe inflammation is encountered.

Material and Methods: In this video, we present a Kimura robot-assisted technique for the treatment of a mucinous cystoadenoma of the pancreatic tail after an episode of pancreatitis. We perform the dissection of the left pancreas from the splenic vessels up to the splenic hilum, preserving the spleen and its vessels, according to the Kimura technique. Only the small pancreatic branches of the splenic vessels are ligated.

Results: The retroperitoneal anatomical plane is only partially viable due to the presence of inflammatory tissue, that in this patient involves the splenic vein in particular. A careful dissection is performed, and the vessel's exposure is achieved through cautery hook, blunt dissection and vessel sealer. We proceed with the section of the pancreatic body with the robotic vessel sealer, and we seal the main pancreatic duct with a 5/0 non adsorbable suture to prevent pancreatic fistulas.

Conclusion(s): Thanks to the high precision and stability of robotics' instruments, this procedure is applicable even in a context of inflammation and loss of anatomic landmarks and can be considered for all non-malignant or borderline tumors.

Keyword(s): Kimura Technique, Distal Pancreatic Resection, Robotic Surgery, Pancreatitis

ROBOSCOPIC PANCREATICODUODENECTOMY WITH MESENTERIC PANNICULITIS: UP-TO-DOWN APPROACH WITHOUT TUNNELISATION

Francesca Pegoraro[1], Silvia Curcio[2], Tarek Kellil[1], Francesca Giampaoli[1], Curro' Giuseppe[2], Michele Ammendola[2], Tullio Piardi[1]

Centre Hospitalier de Troyes, Chirurgie Hıpato-Bilio-Pancrıatique et Mıtabolique, Troyes, France[1] - Universitŭ Magna Graecia, Unitŭ di Chirurgia Generale, Catanzaro, Italy[2]

Background and Purpose: Mesenteric panniculitis is an inflammation that can occasionally arise in the context of tumors of the pancreatic head. In these patients, the conventional tunnelisation of the mesenteric vein is often impossible, due to the loss of the classic landmarks caused by inflammation. Herein, we show a variation of the classic pancreatic transection.

Material and Methods: A 73-year-old patient consulted to the emergency department with jaundice, cholestasis, and hepatic cytolysis. Abdominal ultrasonography and CT-scan showed dilatation of the intra- and extra-hepatic biliary tracts without the presence of clear masses. The endoscopic retrograde cholangiopancreatography showed a stenosis in the intrapancreatic biliary tract of the main bile duct, that was found to be an in situ invasive cholangiocarcinoma. A robotic pancreaticoduodenectomy was scheduled.

Results: The identification of the pancreatic borders was very difficult due to the inflamed and oedematous tissue. For this reason, pancreatic transection was performed via a superior approach and downwards istmic pancreatic resection, without the classic istmic tunnelisation. Moreover, in this patient the right colic artery emerged with the gastroepiploic artery from a common trunk originating from the hepatic common artery: these vessels were sacrificed. The patient was discharged on the seventh postoperative day, without complications. Histologically an infiltrative cholangiocarcinoma of distal common bile duct (PT3N0, 0N+/23, R0) was found.

Conclusion(s): This type of pancreatic transection is more dangerous and must be carried out carefully, by expert surgeons, in specific conditions. This technique could be useful in case of fatty pancreas, inflamed or oedematous peripancreatic tissue and, generally, whenever the classic superior and inferior pancreatic borders are distorted or difficult to find.

Keyword(s): Hybrid Robotic Surgery, Minimally-Invasive Surgery, Pancreaticoduodenectomy, Mesenteric Panniculitis

ROBOTIC MANANGEMENT OF A MIRIZZI SYNDROME TYPE III WITH INDOCYANINE FLUORESCENCE

Silvia Curcio[1], Francesca Pegoraro[2], Tarek Kellil[2], Francesca Giampaoli[2], Curro' Giuseppe[1], Michele Ammendola[1], Tullio Piardi[2]

Universitü Magna Graecia, Unitü di Chirurgia Generale, Catanzaro, Italy[1] - Centre Hospitalier de Troyes, Chirurgie Hıpato-Bilio-Pancrıatique et Mıtabolique, Troyes, France[2]

Background and Purpose: Mirizzi's syndrome (MS) is a rare complication of cholelithiasis, in which a gallstone impacts and obstructs the common bile duct (CBD). The minimally invasive approach allows better exposition, to perform a high precision surgery, especially in fistulizing forms. We present indocyanine green guided (ICG) robot-assisted treatment of Mirizzi's syndrome type 3.

Material and Methods: The patient was admitted for cholangitis. Magnetic resonance (MRI) cholangiopancreatography revealed a substantial dilation of intrahepatic and extrahepatic biliary ducts upstream of a 2.5cm gallstone in the CBD, and a cholecysto-biliary fistula implicating two thirds of the CBD's circumference, confirming a type III SM. Pre-operatively, two endoscopic plastic prostheses were placed. After exposing the gallbladder and ICG tracking, the gallbladder was opened, and the gallstone removed. A partial cholecystectomy was performed, as well as a choledocoplasty with a back-and-forth continuous suture using a 5/0 absorbable monofilament, through biliary prostheses as a guide. The vesicular wall was closed with a continuous absorbable 4/0 barbed suture.

Results: Bile duct opacification after prosthesis ablation and post operative hepatic MRI showed neither stricture nor leakage of the common bile duct.

Conclusion(s): The use of a robot allows better exposition and a precise dissection of small structures, including inflamed tissues. In expert centers, this approach offers an alternative technique to open surgery for the treatment of these rare biliary duct diseases.

Keyword(s): Mirizzi Syndrome, Robotic Surgery, Indocyanine Green

HEPATIC CYST: STEP BY STEP PROCEDURE WITH A CASE REPORT

Nuno Gonçalves, Jessica Rodrigues, Rui Santos, Rafaela Gonçalves, Ana Sousa, Paulo Sousa, João Pedro Pinho, Eduarda Gonçalves, Alexandra Antunes, Ana Sofia Cavadas, António Girão Caires, Nuno Machado, Claudio Branco, Carlos Veiga, Joaquim Costa Pereira

Hospital de Braga, General Surgery Department, Braga, Portugal

Background and Purpose: Hepatic cysts are fluid-filled cavities in the liver generally asymptomatic and found incidentally on imaging studies. However patients with Hepatic cysts can present symptons at the diagnosis. They are usually benign but may present either a malignant (squamous cell carcinoma or liver metastasis) or infectious (echinococcus infection) behaviour. When assymptomatic, it does not require treatment and only require imagiological surveillance if larger than 4 cm. Regarding symptomatic hepatic cystics, surgery is usually the treatment of choice.

Material and Methods: This case represents a 84yo female, presenting to the emergency department with a long term evolution of abdominal fullness and disconfort. Laboratory and clinical workup did not demostrated any relevant findings. Abdominal CT and a MRCP showed a 13 cm cystic liver mass with heterogenous content suggesting hemorraghic component. The patient was proposed to a laparoscopic fenestration.

Results: The procedure was performed without any complications and the patient was discharged on post operative day 1. The video demostrates the step by step approach. The histopatology report confirmed a simple hepatic cyst.

Conclusion(s): The video demostrates a step by step laparoscopic approach for an hepatic cyst fenestration.

Keyword(s): Hepatic cyst, Fenestration, Laparoscopic surgery, Liver

MINIMALLY INVASIVE MESOPANCREATIC DISSECTION

Maria Vittoria d'Addetta[1], *Benedetto Ielpo*[2], *Patricia Sanchez-Velazquez*[2]

Hospital del Mar, General Surgery Resident of Verona in a training period in Hospital del Mar, Barcelona, Barcelona, Spain[1] - Hospital del Mar, Hepatobiliopancreatic surgeon, Barcelona, Spain[2]

Background and Purpose: The dissection of mesopancreas is one of the most complex phases of the pancreaticoduodenectomy operation, even more when it's performed as minimally invasive. The Asians have described some methods and tricks to approach the dissection of mesopancreas.

Material and Methods: In this video we describe three different types of mesopancreas dissection depending on the type of tumor (benign, malignant and aggressive malignant tumors). We also considered the anatomical variations.

Results: In this video we show some useful tricks and tecniques for mesopancreatic dissection in robotic and laparoscopic surgery to achieve the same oncological principles as in open surgery. It is also important to be aware of the anatomical variations, in order to reduce the risk of conversion to laparotomy, that might occur in this phase for example in case of haemorrhage.

Conclusion(s): The aim of this video is to describe the technique of robotic and laparoscopic mesopancreatic dissection, adapting it in case of benign or malignant tumors, and considering the anatomical variations.

Keyword(s): Minimally invasive surgery, pancreaticoduodenectomy, mesopancreas dissection

LAPAROSCOPIC PARTIAL LIVER RESECTION FOR HEPATOCELLULAR ADENOMA – A CASE REPORT AND SURGICAL STEP-BY-STEP REVIEW

Rui Ferreira Santos[(1)], Nuno Dias Machado[(2)], Nuno Gonçalves[(1)], Rafaela Gonçalves[(1)], Ana Sousa[(1)], Paulo J. Sousa[(1)], João Pinho[(1)], Jéssica Rodrigues[(1)], Eduarda Gonçalves[(1)], Alexandra Antunes[(1)], Ana Sofia Cavadas[(1)], Cláudio Branco[(2)], Mariana Silva Costa[(2)], Carlos Veiga[(2)], Joaquim Costa Pereira[(3)]

Hospital de Braga, Resident doctor, Braga, Portugal[(1)] - Hospital de Braga, Attending physician, Braga, Portugal[(2)] - Hospital de Braga, Chief of surgery, Braga, Portugal[(3)]

Background and Purpose: Hepatocellular adenoma is a benign tumour with an incidence of 0.001–0.004%. Management consists of oral contraceptive pills (OCPs) discontinuation and weight loss. Resection is indicated for large adenomas which continue to grow despite lifestyle changes. Here, we present a laparoscopic partial liver resection for a 14 cm adenoma.

Material and Methods: Description of a clinical case and step-by-step review of laparoscopic partial liver resection for a hepatocellular adenoma.

Results: We present a 24-year-old female patient with a history of OCPs intake for seven years. Medical history was significant for epigastric abdominal discomfort and cholestasis. The diagnosis workup consisted in a CT scan, which showed a pedicle mass at the inferior border of segment III. MRI confirmed the presence of a 14 cm hepatic adenoma. A laparoscopic partial liver resection was performed. Resection started with the trocar placement at the umbilicus, upper left abdominal quadrant, and upper right abdominal quadrant. We used a vessel loop to clearly identify the limits of the adenoma. Transection was performed using a linear cutter stapler. A hemostatic matrix was applied to the liver staple line. The specimen was retrieved through a Pfannenstiel incision. The operative time was 70 minutes and the estimated blood loss was 50 mL. The postoperative course was uneventful, and the patient was discharged on the second postoperative day. Histological examination showed complete resection of the adenoma. It was not possible to determine the molecular subtype with certainty, most likely being a hepatic adenoma inactivated for HNF-1α, without the characteristic steatosis.

Conclusion(s): Hepatocellular adenoma is a rare entity that presents with vague symptoms that can easily be misjudged as non-significant. Spontaneous rupture and hemorrhage in large adenomas are not uncommon and are associated with significant mortality. As shown, laparoscopic partial liver resection is a suitable procedure that can prevent future life-threatening complications.

Keyword(s): Hepatocellular Adenoma, Laparoscopic liver resection

INFECTION AND COMPLICATIONS IN SURGERY AND ONCOLOGY

INCISIONAL HERNIA AFTER LAPAROSCOPIC GASTRIC SLEEVE

Ana Costa Sousa[(1)], Jéssica Rodrigues[(1)], João Pinho[(1)], Paulo Sousa[(1)], Rui Santos[(1)], Eduarda Gonçalves[(1)], Ana Sofia Cavadas[(1)], Alexandra Antunes[(1)], Nuno Gonçalves[(1)], Cristina Ribeiro[(2)], José Pedro Pinto[(2)], Fernando Manso[(2)], Joaquim Costa Pereira[(2)]

Hospital de Braga, General Surgery Resident, Braga, Portugal[(1)] - Hospital de Braga, General Surgeon, Braga, Portugal[(2)]

Background and Purpose: Incisional hernia is characterized by a bulging of the abdominal wall caused by the prolapse of intracavitary structures, such as a segment of the small intestine, through the trocar orifice. Trocar site hernia (TSH) is a most likely underestimated complication. Among risk factors, obesity, the use of larger trocars and the umbilical trocar site has been described.

Material and Methods: I present a clinical case of a 37-year-old female patient who went to the emergency room complaining of abdominal pain. Past medical history of obesity having been submitted to gastric sleeve 6 days ago. The patient was underwent a CT scan that described the presence of distention of enteric loops measuring about 4 cm, highlighting the presence of herniation of an enteric segment into the abdominal wall on the right flank at the site of previous surgery, with no findings of ischemia or necrosis associated bowel. The patient was then proposed for laparoscopic incisional hernia hernia repair after gastric sleeve, surgery demonstrated by video.

Results: The patient underwent laparoscopic herniorrhaphy for correction of incisional hernia after gastric sleeve. The patient had a favorable and uneventful postoperative course, having been discharged on the first postoperative day.

Conclusion(s): Trocar port hernias after bariatric surgery rarely occur if the port port is not routinely closed, however when present they may be associated with serious complications.

Keyword(s): Gastric sleeve; incisional hernia

LAPAROSCOPIC AND ROBOTIC SURGERY

RETROPERITONEAL ENDOSCOPIC LEFT ADRENALECTOMY: A CASE REPORT

João Pedro Pinho, Alexandra Antunes, Ana Sofia Cavadas, Eduarda Gonçalves, Nuno Gonçalves, Jéssica Rodrigues, Ana Sousa, Paulo Sousa, Rafaela Brás, Rui Santos, Fernando Manso, José Pedro Pinto, Marta Alexandre Silva, Joaquim Costa Pereira

Hospital de Braga, Hospital de Braga, Braga, Portugal

Background and Purpose: Minimally invasive surgery has revolutionized adrenal surgery by introducing the laparoscopic adrenalectomy. The first description of endoscopic surgery was published in 1992, and the laparoscopic transabdominal approach has become the gold standard. This approach has improved outcomes compared to open procedures, including decreased post-operative pain, morbidity, and hospital stay. Recently, retroperitoneoscopic adrenalectomy has gained popularity among surgeons. However, there is an ongoing debate regarding whether the anterior or posterior approach is the best route to the adrenal gland. The retroperitoneoscopic approach provides excellent exposure, particularly when compared to the laparoscopic removal of the left adrenal gland, which requires retraction of surrounding organs such as the pancreatic tail, transverse and descending colon, and spleen.

Material and Methods: Clinical case and surgery video presentation.

Results: This case report describes a 37-year-old male patient with no relevant medical history except for hypertension, who underwent an abdominal CT scan due to renal lithiasis. The CT scan revealed an incidentaloma on the left adrenal gland, and further blood analysis and MRI scans were performed. A severe hypokalemia and a 4 cm solid nodule consistent with adrenocortical adenoma were detected, and the patient was referred to Endocrinology. After a more detailed laboratory investigation, the diagnosis was confirmed a primary hyperaldosteronism – Conn's syndrome. Spironolactone and potassium supplements were initiated, and surgery was proposed. After medical optimization, the patient underwent a retroperitoneal left adrenalectomy, which was uneventful, and he was discharged the following day after admission.

Conclusion(s): In conclusion, retroperitoneoscopic adrenalectomy is a viable option for small adrenal tumors. Recent studies have demonstrated its superiority over other techniques in selected patients in terms of operation time, pain, blood loss, complication rate, and return to normal activity.

Keyword(s): Adrenal tumors; Primary hyperaldosteronism; Conn's syndrome; Retroperitoneoscopic adrenalectomy

LAPAROSCOPIC RIGHT POSTERIOR SECTIONECTOMY WITH CRANIO-CAUDAL APPROACH FOR COLORECTAL LIVER METASTASIS

Bernardo Dalla Valle, Andrea Ruzzenente, Simone Conci, Tommaso Campagnaro, Mario De Bellis, Edoardo Poletto, Alfredo Guglielmi

Department of Surgery, Dentistry, Gynaecology and Paediatrics, Division of General and Hepato-Biliary Surgery, University of Verona, University of Verona, Verona, Italy

Background and Purpose: Laparoscopic right posterior sectionectomy (RPS) is a challenging resection because of the posterior position. The Glissonean-pedicle approach can be suitable for this type of the resection in order to safely achieve segments 6-7 vascular inflow control. Performing liver transection craniocaudally allows to isolate the venous branches draining the right posterior sector at their confluence in the right hepatic vein (RHV).

Material and Methods: In this video we present a RPS perfomed using a glissonean approach. A 76 year old male patient was diagnosed with a 38 mm colorectal liver metastasis (CRLM) located in segment 7 and infiltrating glissonean pedicle for segment 7. The lesion was in close contact with RHV. For this reason, we choose to proceed with a glissonean-pedicle first approach performing a craniocaudal transection. The main steps of this technique are: intraoperative ultrasonography identification of glissonean pedicle, right hemiliver mobilization, isolation and control of RHV at its origin, isolation of right posterior glissonean pedicle at its origin, parenchymal transection with Indocyanine green (ICG) assistance following craniocaudally right hepatic vein and finally ligation of right glissonean pedicle. Four hilar clamping were made for a total of 60 minutes.

Results: The operation has been successfully performed without any complication. Operative time was 300 minutes. Intraoperative blood loss was 200 ml. Hospital stay was 7 days. Pathology report confirmed a 35 mm colorectal liver metastasis with negative margin.

Conclusion(s): The Glissonean pedicle-first approach is safe and feasible for laparoscopic anatomic resections of the right posterior sector. The craniocaudal approach to the RHV allows to have a safe vascular control during the transection.

Keyword(s): Colorectal liver metastasi (CRLM); Right posterior sectionectomy (RPS); Glissonean pedicle approach; Right hepatic vein (RHV); Indocyanine green (ICG)

ICG-GUIDED LAPAROSCOPIC RE-HEPATECTOMY FOR MULTIPLE COLORECTAL LIVER METASTASIS

Simone Conci, Bernardo Dalla Valle, Tommaso Campagnaro, Mario De Bellis, Andrea Ruzzenente, Alfredo Guglielmi

Policlinico G.B. Rossi, Department of Surgery, Division of General and Hepato-Biliary Surgery, University of Verona, Verona, Italy

Background and Purpose: Hepatic surgery for colorectal liver metastasis (CRLM) has been evolving towards a parenchyma-sparing strategy in order to reduce the incidence of post-hepatectomy liver failure and to guarantee the possibility of reintervention in case of hepatic recurrence.

Material and Methods: This video describes a case of a 42-year-old male patient who underwent re-hepatectomy for multiple CRLM. The patient had already undergone laparoscopic low anterior rectal resection for adenocarcinoma pT4aN0M0R0 and 4 years later laparoscopic left lateral sectionectomy and S4a wedge resection for metachronous CLRM. Subsequently, after multi-disciplinary discussion, the patient received chemotherapy treatment with FOLFOX + Cetuximab (8 cycles), that was well tolerated and had a good radiological response. The operation started with intraoperative ultrasonography in which we detected an increase in number and dimension of the lesions described at the TC. Therefore, the patient underwent S4 anatomical resection and S7 wedge resection with Indocyanine green (ICG) guidance. We had to leave an R1 vascular margin in order to preserve segment seven glissonean pedicle, that was in contact with the lesion. Additionally, it was necessary to ligate middle hepatic vein (MHV) at its origin because it was infiltrated by the largest lesion in segment 4a.

Results: The operation was performed successfully without any complications. Total operative time was 300 minutes. Estimated blood losses were around 250 ml. No blood transfusions were necessary. The patient was discharged on post-operative day 5 with uneventful postoperative course. Histological report confirmed the diagnosis of CRLM. The lesion removed in S7 presented an R1 vascular margin.

Conclusion(s): Minimally invasive liver surgery for CRLM with parenchyma-sparing and occasionally with the need to leave an R1 vascular is feasible. In certain situations, it's necessary to ligate one of sovrahepatic veins in order to achieve an adequate oncological radicality, as long as liver remnant function is not affected.

Keyword(s): Colorectal liver metastasis (CRLM); Parenchyma-sparing; Indocyanine green (ICG)

LAPAROSCOPIC REPAIR OF A TRAUMATIC RIGHT DIAPHRAGMATIC HERNIA

Alexandra Antunes, Nuno Gonçalves, Charléne Viana, Helena Marques, Fernando Manso, Ricardo Pereira, Joaquim Costa Pereira

Hospital de Braga, Hospital de Braga, Braga, Portugal

Background and Purpose: The traumatic diaphragmatic hernia is often missed at the time of the initial event. Some studies indicate that 2,7% to 50% of diaphragmatic ruptures may not be diagnosed initially. The computed tomography had increased the rate of early diagnosis. Some ruptures only can be seen later because an unidentified rupture can enlarge when intra-abdominal pressure rises. We can classify the diaphragmatic hernias in acute or chronic. Some authors use 7 days or 1 month as a cutoff time for acute. Left-sided hernias are more common than right-sided. For the right-sided diaphragmatic ruptures, the liver has a protective role and limits protrusion of intra-abdominal organs.

Material and Methods: Presenting a video.

Results: Female patient, 33 years old. She was admitted to the emergency department after a fall from a height, which resulted in thoracic, abdominal and vertebral trauma. The thoracic imaging study revealed fracture of several ribs with bilateral pneumothorax. She underwent bilateral chest drainage and was admitted to intensive care. On the 10th day of hospitalization due to failure to resolve the pneumothorax on the right, an imaging study with tomography and bronchoscopy was done. Bronchoscopy excluded bronchopleural fistula. CT scan revealed extensive diaphragmatic rupture with hepatic herniation. The patient was proposed for laparoscopic correction. After reducing the hernial content, the diaphragmatic rupture was corrected with suture and a double-sided prosthesis. Postoperatively, we kept the chest tube on the right side. The surgery and the postoperative period were uneventful. Prior to discharge, she underwent imaging reassessment with CT that revealed complete lung expansion and resolution of the pneumothorax. She was discharged home asymptomatic.

Conclusion(s): Improved awareness of diaphragmatic injuries will increase the rate of early diagnosis and improve prognosis. The laparoscopic approach is safe and less aggressive for the patient.

Keyword(s): Thoracic trauma; Diaphragmatic rupture; Laparoscopic surgery

NEW TECHNOLOGY IN SURGICAL ONCOLOGY

PRESSURIZED INTRAPERITONEAL AEROSOL CHEMOTHERAPY (PIPAC) FOR PERITONEAL MALIGNANCIES: 4 YEARS' EXPERIENCE FROM AN ITALIAN DEDICATED CENTER

Francesco Casella, Rebecca Rigoli, Giacomo Guerzoni, Francesca Meloni, Carmelo Puccio, Maria Bencivenga, Giovanni de Manzoni

General and Upper GI Surgery, University of Verona, Verona, Italy

Background and Purpose: PIPAC is an innovative method for treatment of primary and metastatic peritoneal tumors. It has numerous advantages, including the replicability of the procedures, allowing infusion of chemotherapy directly in the abdominal cavity and being able to perform laparoscopy and cyto-histological analysis, having direct control over the stage of the disease. This study aims to analyze our experience in using this technique.

Material and Methods: This retrospective cohort-study included patients treated with PIPAC at a single-center from February 2019 to June 2023. Both Peritoneal Cancer Index (PCI) and Peritoneal Regression Grading Score (PRGS) were respectively used as intraoperative staging and histological grading response systems. The toxicity of each procedure was assessed using the Common Terminology Criteria for Adverse Events (CTCAE). Complications were reported according to Clavien-Dindo classification.

Results: Overall, 110 patients received 172 PIPACs with cisplatin/doxorubicin (7.5mg/m^2+1.5 mg/m^2 n=28; 10.5mg/m^2+2.1 mg/m^2 n=136), oxaliplatin 92.5 mg/m^2 (n=7) or nab-paclitaxel 112.5mg/m^2 (n=1) for gastric (n=89), colorectal (n=5), breast (n=5), hepato-biliopancreatic (n=4), malignant pleural mesothelioma (n=2), small bowel (n=2), ovarian (n=2) and pseudomyxoma peritonei (n=1) primary cancers. 43 patients were subjected to a bidirectional approach, underwenting a mean of 1,5 procedures per patient. In 16 cases bilateral adnexectomy was performed. 11 patients underwent cytoreductive surgery, in 8 cases associated with HIPEC. Median PCI was 26(2-39) and in 26 cases a complete (PRGS of 1 n= 8) and major (PRGS of 2 n=18) histological response were recorded. The overall and major CTCAE toxicity rates were respectively 8.2% and 2.7%. The postoperative complications rate according to Clavien classification were 9.1%, major complications (CD≥3a) occurred only in 2 cases.

Conclusion(s): The use of PIPAC has proved to be a useful tool for the treatment of peritoneal metastases. The complications recorded in our experience are minimal, being a safe and effective method, especially in a bidirectional setting.

Keyword(s): peritoneal metastases; PIPAC; CRS+HIPEC

RARE GI TUMORS (NEUROENDOCRINE TUMORS, GIST, AND SARCOMAS)

DUODENAL GIST SURGERY

Lorenza Beomonte Zobel[(1)], *Sirvjo Dhimolea*[(1)], *Andrea Divizia*[(2)], *Giuseppe S. Sica*[(1)]

Minimally Invasive Unit, Department of Surgical Science, University and Policlinico Tor Vergata, Rome, Italy[(1)] - Emergency Surgery Unit, Department of Surgical Science, University and Policlinico Tor Vergata, Rome, Italy[(2)]

Background and Purpose: Gastrointestinal stromal tumors (GISTs) are rare mesenchymal tumors of the gastrointestinal tract that originate from the intestinal cells of Cajal (ICC). GISTs rarely occur in the duodenum, and only a few cases have been reported. Its clinical manifestations are not specific, and the imaging examination results are not typical, so a preoperative diagnosis is challenging.

Material and Methods: A 69-year-old female completely asymptomatic underwent an abdominal ultrasound for routinally follow up that revealed a suspect for pancreatic IPMN. She underwent contrast-enhanced MRI that described 3cm mass near uncinate process of pancreas. The mass surrounded the horizontal parts of the duodenum, apparently in continuity with it. It also compressed the portal vein. The patient also underwent contrast-enhanced computer tomography that cofirmed the presence of duodenal exofitic growing lesion. A gastroduodenoscopy was done with no sign of invasion of duodenal mucosa. Based on these results, the lesion was finally diagnosed as duodenal GIST. The patient underwent surgical resection without targeted therapy and recovered well.

Results: GISTs are the most common among mesenchymal tumors of the gastrointestinal tract. The clinical presentations of duodenal GIST are highly variable. They are often diagnosed as a pancreatic head tumor as they are very difficult to relate to the duodenum with CT, MRI, or ultrasound. There is no consensus on the optimal surgical treatment of duodenal GIST. The aim is to achieve a R0-type surgery with complete en bloc surgical resection of the tumor and the surrounding tissue.

Conclusion(s): Duodenal GIST are rare. The clinical symptomatology is very variable even if frequently occur with digestive bleeding, but they can be totally asimptomatic. The aim of the surgery is the complete removal of the tumor (R0) however looking to perform minimum resections.

Keyword(s) GIST; duodenum; laparoscopic surgery

UPPER GI (SURGERY, ONCOLOGY AND ENDOSCOPIC INTERVENTION)

LAPAROSCOPIC SUBTOTAL GASTRECTOMY

Maria Bencivenga, Federica Filippini, Michele Sacco, Mariella Alloggio, Jacopo Weindelmayer, Giovanni de Manzoni, Simone Giacopuzzi

Department of General Surgery, University of Verona, Verona, Italy

Background and Purpose: We report the case of a patient with distal early gastric cancer, who underwent laparoscopic subtotal gastrectomy with D2 lymphadenectomy. The technique used is based on the one developed in the East.

Material and Methods: The operation involves placement of 5 trocars: the first operator is on the right side of the patient, the assistant on the left, and camera between legs. First phase involves the colo-epiploic detachment: we open the omentum beyond the gastroepiploic arch to access retro-cavity of the epiploon and we ligate the left gastroepiploic vessels. The detachment proceeds on the right-side until lymphnode station number 6 (infrapyloric), where we find the right gastric vein and ASPDV that join into the Henle venous truck. We proceed with ligation of the right gastroepiploic vessels, to remove the fat tissue over this area.

Results: We move to the lesser curvature,opening the small epiploon. Once the first duodenal portion have been freed,duodenum is sectioned around 2 cm beyond the pylorus. Now, the right gastric artery could be ligated. The next phase of the operation involves the opening of the small epiploon until visualization of the right diaphragmatic pillar. We proceed with en-bloc D2 lymphadenectomy. The assistant lifts cranially the left gastric artery to show the U and V shape lines, that need to be followed for the dissection. With the other hand, the assistant keeps the pancreas slightly tractioned downwards with a gauze(rolling pancreas). Posterior limit of lymphnode dissection is the portal vein. The dissection proceeds from the left gastric artery towards the hepatic artery(8a) and the hepato-duodenal ligament(12a). Then following the V shape,we remove linfonodes on the splenic artery(11p). Now we can proceed with ligation of left gastric artery.

Conclusion(s): Finally,we perform section of the stomach and preservation of stump supported by short gastric vessels. The digestive tract is reconstructed with a jejunal loop, previously prepared. The gastro-jejunum L-L anastomosis is performed using 60 mm antecolic EndoGIA. Jejuno-jejunal anastomosis was already performed with circular stapler.

Keyword(s): laparoscopic gastrectomy, gastric cancer, D2 lymphadenectomy

NON-EXPOSED ENDOSCOPIC WALL-INVERSION SURGERY (NEWS)

Eugenia Mattioni, Federica Filippini, Maria Bencivenga, Simone Giacopuzzi, Francesco Tomba

University of Verona, General and Upper GI Surgery Division, Department of Surgery, Verona, Italy

Background and Purpose: Non-exposed endoscopic wall-inversion surgery (NEWS) is a combined laparoscopic and endoscopic surgery for full-thickness resection of ulcerated tumors without intentional perforation.

Material and Methods: The strength of this technique is the exeresis of the tumor by endoscopy, without the exposure of gastric lumen in the peritoneal cavity. Tumor size over 30 mm represents a limitation for this technique, due to elevated risk of esophagus perforation during the extraction.

Results: The location of the tumor is identified both endoscopically and laparoscopically: under endoscopic vision the markers are traced by electrocautery on the mucosa around the tumor and a solution for submucosal lifting with indigo and carmine dye is injected circumferentially into the submucosal layer using a standard injection needle. Once this step is performed, through to infrared transillumination endoscopy, a visual guide is created for the laparoscopic operator who marks an outline on the serous layer by electrocautery and perform a seromuscular incision around the serous markings, taking care to keep the submucosal layer outlined by the dye intact; after inserting a spongy spacer, the seromuscular layer is sutured with a 3-0 thread and the lesion is naturally reversed inside the stomach.

Conclusion(s): Sequentially, under endoscopic vision, an important protrusion of the mucosa into the gastric lumen will be noted: the mucous-submucosal layer is incised around the markings by ESD technique and the tumor is extracted endoscopically through the oral cavity; finally, the spongy spacer is removed and some clips is placed to suture the mucosa.

Keyword(s): NEWS, surgery, laparoscopy, endoscopy, GIST, upper GI

LAPAROSCOPIC DUODENOJEJUNOSTOMY FOR TREATMENT OF SUPERIOR MESENTERIC ARTERY SYNDROME

Sofia Cavadas, Alexandra Antunes, Hugo Rios, Dina Luis, António Gomes

Hospital de Braga, Hospital de Braga, Braga, Portugal

Background and Purpose: Superior mesenteric artery syndrome is a rare but well recognized clinical entity characterized by compression of the third portion of the duodenum between the aorta and the superior mesenteric artery. Surgical treatment may consist in a duodenojejunostomy.

Material and Methods: Here, we present a video of a duodenojejunostomy for the treatment of superior mesenteric artery syndrome. The patient is a 32-years-old woman who presented with postprandial vomiting and discomfort, early satiety, epigastric pain and weight loss within the last months.

Results: We used a laparoscopic approach. The procedure began with a Kocher maneuver to mobilize the first three portions of the duodenum. After mobilization of the duodenum, we performed an antecolic duodenojejunostomy to the second part of the duodenum, using a linear stapler. The postoperative course was uneventful, and the patient has no complaints two months after the surgery.

Conclusion(s): A laparoscopic duodenojejunostomy can be a safe and easily reproducible procedure for the treatment of superior mesenteric artery syndrome.

Keyword(s): General surgery, laparoscopy, duodenojejunostomy, superior mesenteric artery syndrome

MINIMALLY INVASIVE ESOPHAGECTOMY TO TREAT ESOPHAGEAL CANCER

Alexandra Melo de Araújo Antunes, Ana Sofia Cavadas, Hugo Rios, Dina Luís, António Gomes

Hospital de Braga, Hospital de Braga, Braga, Portugal

Background and Purpose: During the last decades, minimally invasive surgical approaches for the treatment of esophageal cancer have been increasingly pursued. The introduction of laparoscopic and thoracoscopic approaches to replace laparotomy and thoracotomy, respectively is associated with reduced perioperative morbidity and good oncologic outcomes. Although, the rate of anastomotic leaks, mortality and the number of lymph nodes harvested is similar between minimally invasive and open approach, the less invasive procedure demonstrated to be safe and with multiple perioperative benefits. Recent studies showed that cardiovascular and pulmonary complications were less prevalent in the less invasive approach group. Although there is a significant learning curve required to master this technique, thoracoscopic-laparoscopic esophagectomy is rapidly replacing traditional open esophagectomy and has arguably become the new gold standard, as postoperative outcomes continue to improve.

Material and Methods: Presenting a video of a thoracoscopic-laparoscopic Ivor Lewis esophagectomy.

Results: A 42-year-old man, with a history of Barret's esophagus, was diagnosed with a stenosis at 33 cm from the dental arcade histologically compatible with high grade dysplasia (it was not possible to role out adenocarcinoma). The CT scan revealed a concentric thickening of the esophageal walls in an infracarinal location and extending to the esophagogastric junction. The patient was proposed to thoracoscopic-laparoscopic Ivor Lewis esophagectomy. We did first the abdominal part by laparoscopy and the we put the patient on left lateral decubitus to do the thoracic dissection. The postoperative period went uneventful, with less pain, greater mobility and an earlier discharge compared to patients submitted to open surgery. The histology of the specimen revealed to be an adenocarcinoma, pT3 N1 (1/20).

Conclusion(s): Minimally invasive esophagectomy is a safe procedure and has the potential to decrease the rate of respiratory complications associated with thoracotomy, along with the benefits of reduced morbidity and a quicker return to normal activities.

Keyword(s): minimally invasive esophagectomy; esophageal cancer; morbidity

SESSION: ORAL PRESENTATION

ADVANCED IMAGING AND INTERVENTIONAL RADIOLOGY

UTILIZATION OF FOUR-DIMENSIONAL COMPUTED TOMOGRAPHY IN PREOPERATIVE LOCALIZATION OF RENAL HYPERPARATHYROIDISM

Ting-Chun Kuo[1], Kuen-Yuan Chen[1], Yu-Fen Wang[2], Ming-Tsan Lin[1], Ming-Hsun Wu[1]

National Taiwan University Hospital, Department of Surgery, Taipei, Chinese Taipei[1] - National Taiwan University Hospital, Department of Radiology, Taipei, Chinese Taipei[2]

Background and Purpose: Persistent and recurrent renal hyperparathyroidism (RHPT) occurs in 5–30% of patients after parathyroidectomy (PTX) for refractory RHPT. Incomplete identification or resection of parathyroid glands (PTGs) results in surgical failure, especially with ectopic or supernumerary PTGs. Image modalities for preoperative localization of PTGs include ultrasound and scintigraphy. Four-dimensional computed tomography (4D CT) showed good diagnostic performance in preoperative localization in primary hyperparathyroidism (PHPT).

Material and Methods: To compare the accuracy and reliability imaging modalities for preoperative localization in RHPT. Patients who underwent PTX for refractory RHPT between January 2022 and March 2023 at National Taiwan University Hospital, Taipei, Taiwan, were analyzed prospectively. Enhancement patterns and diagnostic performance of 4D CT were compared.

Results: During this period, 37 patients enrolled, including 21 males and 16 females, 34 successful TPX but one recurrent laryngeal nerve injury. Among the 135 surgical resected nodules, there were 124 parathyroid hyperplasia, one parathyroid adenoma, and 3 normal glands histopathologically confirmed. The diagnostic performance as sensitivity, specificity, PPV, NPV and accuracy of 4D CT were: 0.901, 1.000, 1.000, 0.806 and 0.930, respectively. AUC of the ROC curve of image modalities shown superior diagnostic performance of 4D CT over US and MIBI scan (0.95 vs 0.89 and 0.75). Among the 118 lesions detected in 4D CT, there were 85 (72.03%) type B lesions, 32 (27.19%) type A lesions, and one lesion type C.

Conclusion(s): 4D CT provides superior performance in preoperative localization for RHPT and could be considered as second-line image modality especially in ectopic/supernumerary PTGs or previous surgical failure.

Keyword(s): renal hyperparathyroidism (RHPT), parathyroidectomy (PTX), four-dimensional computed tomography (4D CT), preoperative localization, image modality. diagnostic performance

CT-RADIOMICS AND FORMAL METHODS IN DIAGNOSIS AND PROGNOSIS OF ACUTE PANCREATITIS

Aldo Rocca, Maria Chiara Brunese, Gianfranco Vallone, Fulvio Calise, Antonella Santone, Luca Brunese

University of Molise, Department of Medicine and Health Science "V. Tiberio", Campobasso, Italy

Background and Purpose: Acute pancreatitis (AP) is a common disease with an annual incidence rate of about 33.74/100 000, along with a yearly mortality rate of about 1.16/100 000. AP is currently stratified into three degrees of severity: mild AP (MAP), moderately severe AP (MSAP), and severe AP (SAP). Several scores aim to assess a prognosis of acute pancreatitis, but they need more than one day of observation, so sometimes it is not possible to perrfom the most personalized treatement to each patient. Our study aims to recognize acute pancreatitis only from CT images without any clinical data and also to estimate its prognosis and evolution at the primary diagnosis through the innovative Radiomic model based on Formal Methods rather than machine Learning. Radiomics through formal methods appears to be reliable also with small sample of cases, because, after identifying the significant features, the results were no more conditioned by the amount of patients.

Material and Methods: We retrospectively collected the portal-phase CT images of 80 patients divided into two groups: “healthy pancreas” as "control" and “mild pancreatitis” (20 with a good prognosis and 20 evolved into necrotizing pancreatitis). We manually segmented all the pancreatic gland on 3D-slicer. Features were extracted by Pyradiomics on an excel files. Then the model was built, and the necessary features were chosen applying the rule of "significant but not redundant". Finally a rule was formulated and the Model Checker classified patients into "healthy" or "unhealty".

Results: The model can ensure a global accuracy better than 75% percent and a sensitivity and specificity better than 70%.

Conclusion(s): Our model was reliable to predict the developpent of severe pancretitis at moment of primary diagnosis and it was built to be available in different centers to be tested in clinical practice.
Limits:manual segmentation, small case volume

Keyword(s): Ct scan, radiomics, acute pancreatits, formal methods, personalized medicine

NON OPERATIVE MANAGEMENT IN BLUNT ABDOMINAL TRAUMA WITH USG GUIDED PIGTAIL DRAINAGE:AN EFFECTIVE MODALITY; OUR EXPERIENCE AND CASE SERIES

Mahim Koshariya, Ashish Tiwari, Amey Jain, Prasoon Singh, Vijay Tekam, Arshad Kham, Nikhil Tekwani, Utkarsh Bhandari, Yogshri Chaubey

Gandhi Medical College, Department of Surgery, Gandhi Medical College and Hamidia Hospital Bhopal, India 462001, Bhopal, India

Background and Purpose: Blunt abdominal trauma due to Road Traffic Accident or assault or any blunt force is a common presentation in casualty. Blunt abdominal trauma can cause damage to the internal organs, resulting in internal bleeding (hemoperitoneum), or injuries to the bowel, spleen, liver, and intestines. A shift of operative to non operative management of blunt abdominal trauma have been observed in last few decades. NOMAT(non operative Management in Abdominal Trauma) significantly decreased the rate of nontherapeutic laparotomy but carried the risks of higher Blood transfusion requirements and Surgical dillema, delaying The surgical intervention. When surgery was indicated, the policy of minimal intervention positively affected the patient's outcomes.

Material and Methods: Patients presenting in casualty of Hamidia Hospital Bhopal with blunt abdominal trauma were evaluated. Patients with clear signs for bowel injury and requiring emergency therapeutic laparotomy were excluded from the study. and patients with moderate to gross hemoperitoneum and associated solid organ injuries were considered for NOMAT through USG guided pig tail insertion for hemoperitoneum drainage. 11 patients were considered for this modality of NOMAT. patients were observed for general condition,lesser analgesic requirement,duration of hospitalisation, Blood transfusion requirements, complications, oral feed tolerance etc.

Results: 7 patients were male And 4 were female between the age group of 18yrs to 40yrs. Average duration of hospitalisation was found to be less than 8 days.1 out of 11 patients was explored due to surgical dillema.patient's general condition was also found to be improving after pig tail insertion.After this patients required lesser analgesic,early oral feed tolerance and lesser Days of hospitalisation. patients required average 2 units of blood transfusion.

Conclusion(s): Patients with moderate to gross hemoperitoneum associated with solid organ injury can be managed with NOMAT through USG guided pig tail insertion drainage of hemoperitoneum. And have potentials to be proven better modality in cases of surgical dillema for non therapeutic laparotomies.

Keyword(s): NOMAT, Blunt Abdominal Trauma, Pig tail drainage

CIRCULATING AND TISSUE-BASED BIOMARKERS

CIRCULATING TUMOR-DERIVED DNA (CTDNA) IN PATIENTS WITH LOCALLY ADVANCED RECTAL CANCER TREATED WITH MULTIMODAL TREATMENT

Lorenzo Gervaso[1], Davide Ciardiello[1], Liliana Ascione[2], Laura Boldrini[2], Lorenzo Guidi[2], Carmine Valenza[2], Giuliana Gregato[3], Luigi Funicelli[4], Luca Bottiglieri[5], Giuseppe De Roberto[6], Wanda Petz[7], Simona Borin[7], Uberto Fumagalli Romario[7], Marianna Gerardi[8], Francesco Bertolini[3], Giuseppe Curigliano[2], Nicola Fazio[1], Maria Giulia Zampino[1]

IEO IRCCS, Division of Gastrointestinal and Neuroendocrine Tumors, Milan, Italy[1] - IEO IRCCS, Division of Early Drug Development for Innovative Therapies, Milan, Italy[2] - IEO IRCCS, Laboratory of Haemato-Oncology, Milano, Italy[3] - IEO IRCCS, Division of Radiology, Milan, Italy[4] - IEO IRCCS, Division of Pathology, Milano, Italy[5] - IEO IRCCS, Division of Endoscopy, Milano, Italy[6] - IEO IRCCS, Division of Digestive Surgery, Milano, Italy[7] - IEO IRCCS, Division of Radiotherapy, Milano, Italy[8]

Background and Purpose: The management of locally advanced rectal cancer (LARC) relies on a multimodal approach, including chemotherapy, radiation, and surgery. Neither instrumental work-up nor molecular biomarkers are currently available to identify a risk-adapted strategy. We aim to investigate the role of ctDNA and its clearance at different timepoints during chemo-radiotherapy (CT-RT) and correlate with clinical outcomes.

Material and Methods: Prospective observational study enrolling LARC patients managed with neoadjuvant CT-RT and surgery at IEO between 2014-2019. Blood samples for ctDNA were obtained at pre-planned timepoints: baseline, end of chemoradiation, after surgery, end of adjuvant chemotherapy. ctDNA was extracted from plasma and mutations detected on tumor biopsy (KRAS, NRAS, BRAF, PIK3CA) were evaluated on ctDNA. The ctDNA clearance, defined as 100% decrease of variant allele frequency (VAF), assessed at any timepoints was analyzed for correlation with pathologic complete response (pCR), event-free survival (EFS), and overall survival (OS).

Results: Sixty patients harboring mutations on tissue underwent liquid biopsy. Distal primary site accounted for 47% of cases and 51(85%) had clinical node positive disease. Twelve (20%) patients obtained pCR and 48 (80%) down-staging.Thirty-four (57%) received adjuvant chemotherapy. After a median follow-up of 82 months, the 3-year EFS and OS rates were of 83% and 87%, respectively. The median ctDNA value at T0 was 0.11 ng/2 ml. Twenty-five patients (42%) obtained ctDNA clearance at least in one timepoint. No statistically significant associations emerged between ctDNA clearance and pCR, EFS and OS. The 3-year EFS rate was of 92% for patients with at least one ctDNA clearance and 79% for patients with no clearance (Hazard Ratio [HR]: 0.5; 95% CI: 0.1-2.4).

Conclusion(s): In patients with ctDNA clearance at any timepoint the 3-year EFS rate was longer compared with patients without clearance, although not statistically significant. Larger prospective studies are required to define the role of ctDNA in LARC.

Keyword(s): ctDNA, circulating biomarkers, rectal cancer

CONSORTIUM FOR MULTIDISCIPLINARY CLINICAL STUDIES IN GI DISEASES

ABDOMINAL TUBERCULOSIS: CLINICAL PRESENTATION AND ITS SURGICAL MANAGEMENT - OUR EXPERIENCE

Mahim Koshariya, Prasoon Singh, Ashish Tiwari, Yogshri Chaubey, Amey Jain, Utkarsh Bhandari

Gandhi Medical College, Department of Surgery,Gandhi Medical College and Hamidia Hospital Bhopal 462001, Bhopal, India

Background and Purpose: Resurgence of Tuberculosis has become a major health concern in many developed countries dueto a large extent to the epidemic of acquired immune deficiency disease HIV disease. Abdominaltuberculosis can occur anywhere from mouth to anus, the peritoneum and hepatobiliary system. The wide spectrum of presentation makes abdominal tuberculosis a difficult disease to diagnoseand can pose a diagnostic and therapeutic challenge for physicians as well as surgeons to manageit. This paper intends to describe and review the spectrum of surgical presentation of abdominaltuberculosis and its management.

Material and Methods: A retrospective study was carried out in our department of surgery in all admitted patients with established diagnosis of abdominal tuberculosis during a period of five years. All data werecollected and reviewed.

Results: Total number of 160 patients were reviewed in a period of 5 years. Out of 160 patients 90 (56.25%) were female and 70 (43.75%) were male and majority of the patients were of younger age group. Most common presenting complaint was abdominal pain in 95% of patients followedby fever, vomitting and weight. Right Iliac fossa mass was present in 50% of patients. Out of 160 patients 140 (87.5%) patients underwent surgical exploration. Various surgical procedure which carried out were right hemicolectomy 80 (50%), resection-anastomosis in 18 (12.85%), stricturoplasty 10 (7.14%), loop ileostomy 5 (3.57%), closure of perforation 12 (8.57%), adhesiolysis, biopsy and band release 18 (12.85%). There was 3 mortality (1.87%).

Conclusion(s): Though abdominal tuberculosis has wide spectra of clinical presentation and may mimic chronicabdominal condition, a high index of suspicion should be kept in mind for diagnosis in cases of acute/chronic abdomen, intestinal obstruction/perforation and peritonitis. Surgical exploration should be main stay not only for its management but also for histopathological diagnosis. And all patients should receive complete regime of antituberculous therapy.

Keyword(s): Abdominal Tuberculosis, Surgical Management, Antitubercular therapy

DIGITAL HEALTHCARE AND ARTIFICIAL INTELLIGENCE

GASTRIC CANCER PROGNOSIS IN SENEGAL

Idrissa Sy[1], Mamadou Bousso[1], Ayoub Insa Correa[1], Madieng Dieng[2], Aba Diop[3]

Doctoral School of Sustainable Development and Society, Iba Der THIAM University of Thiθs, Thiθs, Senegal[1] - Faculty of Medicine, Pharmacy and Odontology, Cheikh Anta DIOP University of Dakar, Dakar, Sınıgal[2] - Mathematics Department, Alioune DIOP University of Bambey, Thies, Sınıgal[3]

Background and Purpose: Develop a prognostic model for the occurrence of death from gastric cancer five years after treatment.

Material and Methods: The study was retrospective. Patients treated for gastric cancer at Aristide Le Dantec Hospital in Dakar (Senegal) between 2010 and 2017 were included. Data consisted of clinical, pathological and therapeutic factors. We compared several standard statistics and artificial intelligence models.

Results: The Multilayer Perceptron model showed the best performance with 96.9% accuracy; 97% sensitivity and 96% specificity. Among the Machine Learning classifiers, Random Forest achieved the highest accuracy at 95%. As for standard logistic regression, its accuracy was 93%.

Conclusion(s): Our study contributes significantly to the fight against the poor prognosis of gastric cancer in Senegal. The deployment of models integrating clinical, pathological and therapeutic factors provides better guidance towards personalised patient follow-up. This opens up great prospects for the development of artificial intelligence in the medical field in Senegal and Africa.

Keyword(s): Gastric cancer, Prognosis, Artificial intelligence

ROLE OF ARTIFICIAL INTELLIGENCE (AI) IN PRE-OPERATIVE OPTIMISATION AND POST-OPERATIVE RECOVERY OF SURGICAL PATIENTS

Mahim Koshariya, Yogshri Chaubey, Utkarsh Bhandari, Prasoon Singh, Ashish Tiwari, Amey Jain

Gandhi Medical College Bhopal, Department of Surgery, Gandhi Medical College and Hamidiya Hospital Bhopal, India 462001, Bhopal, India

Background and Purpose: Artificial intelligence (AI) involves the use of algorithms that provides machines the ability to analyze through a vast array of data, recognize patterns, and make decisions based on reinforcement learning. This review aims on the use of AI and it's capabilities to help surgeons in pre-operative and post-operative domains of surgical care. Pre-operative optimization has a crucial role in surgical patients in terms of post-operative recovery and long term survival. Artificial intelligence can play a vital role in surgical patient management.

Material and Methods: A review of papers on artificial intelligence with elements of pre-operative optimization and post-operative recovery was done to identify its key concepts and techniques.

Results: Data bases used by AI to formulate algorithm and analysis of available data helps in early diagnosis, careful selection of patient for surgery, accurate risk assessment by evaluating medical co-morbidities, malnutrition, social determinants of health, etc, and helps in adequate pre-operative buildup of the patient, automated drug delivery, predicting anesthetic and surgical complications and postoperative outcomes while working alongside the protocols of enhanced recovery after surgery (ERAS) and can thus lead to effective peri-operative management as well as reduces the cost of treatment and length of hospital stay thereby increasing patient satisfaction.

Conclusion(s): Proper implementation and use of artificial intelligence along with real-time human interpretation can make revolutionary changes in preventing pre-operative and post-operative catastrophes along with giving us an added advantage of their timely management.

Keyword(s): Artificial intelligence, machine learning, ERAS , peri-operative care

THE METAVERSE IN SURGERY: A REAL LIFE LOW-COST CLINICAL APPLICATION FOR TELEMENTORING

Francesca Vescio[1], Mohanad Al Ansari[2], Silvia Curcio[1], Jozel Hila[1], Laura Rizzo[1], Roberto Romano[1], Francesco Marchegiani[3], Nicola de'Angelis[3], Riccardo Memeo[4], Tullio Piardi[5], Davide Cavaliere[6], Adam E Frampton[7], Giuseppe Navarra[8], Giuseppe Currò[9], Michele Ammendola[1]

University "Magna Graecia" Medical School, Science of Health Department, Digestive Surgery Unit, Catanzaro, Italy[1] - Aster Hospital, Dean of the Robotic Surgery Academy, Minimal Invasive Gastrointestinal, Robotic Surgery Unit, Dubai, United Arab Emirates[2] - University Paris Citι, Beaujon University Hospital (AP-HP), Unit of Colorectal and Digestive Surgery, DIGEST Department, Clichy, France[3] - "F. Miulli" Hospital, Hepato-Biliary and Pancreatic Surgical Unit, Acquaviva delle Fonti, Bari, Italy[4] - Centre Hospitalier Universitarie de Reims Champagne-Ardenne, Service de Chirurgie Generale, Digestive et Endocrienne, Reims, France[5] - Morgagni-Pierantoni Hospital, General and Oncologic Surgery, Forlμ, Forlμ Cesena, Italy[6] - University of Surrey, Department of Clinical and Experimental Medicine, Guildford, United Kingdom[7] - University of Messina, "G. Martino" Hospital, Department of Human Pathology of Adult and Evolutive Age, Surgical Oncology Division, Messina, Italy[8] - University "Magna Graecia" Medical School, Science of Health Department, General Surgery Unit, Catanzaro, Italy[9]

Background and Purpose: The 2021 is known as the first year of the metaverse, and around the world, internet giants are eager to devote themselves to it. The aim of this study is to evaluate the results obtained during the scientific collaboration between Translational Research in Surgery Group of "Magna Graecia" University Medical School and the first Metaverse Surgical Hospital (USA).

Material and Methods: Two patients, suffering gallbladder stones and colon cancer, were selected with the eligibility criteria to perform laparoscopic cholecistectomy and laparoscopic left colectomy in Metaverse Surgical Hospital.

Results: The surgeries were executed and projected for demonstration. They were performed without any complications and distractions, discussing surgical strategy remotely making it safer.

Conclusion(s): In this study, we introduced the concept, current development and application of the metaverse and the use of current basic technologies in the medical field, such as virtual reality surgery and telementoring.

Keyword(s): Metaverse, Cholecistectomy, Left Colectomy, Artificial Intelligence (AI), Virtual Reality Surgery (VRS)

GASTROENTEROLOGY

INCREASED RISK OF PANCREATIC CANCER AMONG 141,387 DIABETIC PATIENTS TREATED WITH DPP-4 INHIBITORS ANALYZED WITH COMMON DATA MODEL

Jun Kyu Lee

Department of Internal Medicine, Dongguk University Ilsan Hospital, Goyang, Republic of Korea

Background and Purpose: Dipeptidyl peptidase 4 inhibitors (DPP-4i) are incretin-based anti-diabetes drugs which have been introduced recently. It is concerned that, however, that DPP-4i might cause pancreatic cancer or pancreatitis due to the pleiotropic effects for the exocrine pancreas. In this study, the association between pancreatic cancer and DPP-4i was investigated based on common data model (CDM), an emerging tool for real world data (RWD) analysis.

Material and Methods: The electronic hospital record (EHR) of diabetic patients treated with DPP-4i from 2006 to 2019 was pooled into CDM and compared with those with sodium-glucose co-transporter inhibitors (SGLT)-2i as the control. The enrollment assessment window was considered 6 months. The blackout and washout periods were defined as 2 and 56 days, respectively.

Results: Each cohort of DPP-4i and SGLT-2i consisting of 141,387 and 13,378 patients was formed. Pancreatic cancer was identified in 2,803 (2.14%) patients from the DPP-4i cohort and 129 (1.07%) from the SGLT-2i cohort, which showed statistical difference ($P < 0.0001$). The odds ratio was 2.02 (95% confidential interval: 1.69-2.41) with fixed and random effect models.

Conclusion(s) The study suggests there is increased risk of pancreatic cancer for patients treated with DPP-4i.

Keyword(s): Pancreatic Cancer, DPP-4 Inhibitors, Adverse Drug Reaction, Common Data Model, Acute Pancreatitis

PROGNOSTIC VALUE OF LONGITUDINAL BODY COMPOSITION ANALYSIS USING DEEP LEARNING-BASED AUTOMATED SEGMENTATION IN METASTATIC PANCREATIC CANCER

Taeseung Lee

Seoul National University Hospital, Gastroenterology, Internal Medicine, Seoul, Republic of Korea

Background and Purpose: Sarcopenia or visceral fat has been reported to be related to pancreatic cancer prognosis. However, clinical relevance of the analysis of body compositions and their longitudinal changes is lacking. This study analyzed the association between body composition changes after chemotherapy and survival in patients with metastatic pancreatic cancer.

Material and Methods: 456 patients (272 males and 184 females) with metastatic pancreatic cancer who received palliative chemotherapy from May 2011 to December 2019 were included. Using deep learning-based, fully automated segmentation of initial computed tomography(CT), areas of muscle, subcutaneous fat, and visceral fat were extracted from a single axial image of portal phase at inferior endplate level of the L3 vertebra. Skeletal muscle index(SMI), visceral adipose tissue index(VATI), subcutaneous adipose tissue index(SATI), and mean muscle attenuation(MA) at inferior endplate level of L3 vertebra were calculated, and their effect on overall survival (OS) was analyzed. Longitudinal changes in body composition and prognostic values were also analyzed in a subgroup of patients with 2-month and 6-month follow-up CT(n=349).

Results: Higher MA at initial CT was significantly associated with better OS(hazard ratio[HR]: 0.706; 95% confidence interval[CI], 0.538–0.925; P=0.012 for males, and 0.656; 95% CI, 0.475–0.906; P=0.010 for females), whereas higher SATI(HR, 0.568; 95% CI, 0.388–0.830; P=0.003) was significantly associated with better OS in female patients. In longitudinal analysis, SMI, VATI, and SATI significantly decreased between initial and 2-month CT, whereas mean MA significantly decreased between 2-month and 6-month CT. In cox regression analysis of longitudinal changes, SATI change was significantly associated with OS in male patients(HR, 0.513; 95% CI, 0.354–0.745; P<0.001).

Conclusion(s): In patients with metastatic pancreatic cancer, body composition mostly changed during the first 2 months after starting chemotherapy, and the prognostic factors associated with OS differed between males and females. Therefore, deep learning-based body composition analysis can help predict metastatic pancreatic cancer prognosis.

Keyword(s): Pancreatic cancer, Body composition

THE EFFECT OF PVE ON POSTOPERATIVE OUTCOMES AND LONG TERM SURVIVAL IN PERIHILAR CHOLANGIOCARCINOMA

Taeseung Lee

Seoul National University Hospital, Gastroenterology, Internal medicine, Seoul, Republic of Korea

Background and Purpose: The only curative option for perihilar cholangiocarcinoma is surgical resection of involved bile duct and hemi-liver. Portal vein embolization (PVE) is often recommended to avoid substantial risk of postoperative liver failure and mortality. However, its effect on post-operative outcome and long term survival is limited.

Material and Methods: We retrospectively reviewed 136 patients diagnosed with bismuth type III-IV perihilar CCA from April 2011 to August 2021 in Seoul National University Hospital in Korea. Among 136 patients, 125 patients were included in analyses and divided in four groups: Resection without PVE (A, N=18), Resection with PVE (B, N=60), PVE without resection (C, N=16), Palliative chemotherapy (D, N=31). To evaluate the effect of PVE, we analyzed postoperative outcome and survival of each group. To identify the factors related to survival, cox regression analysis was performed which was stratified by curative resection.

Results: The R0 resection rate was higher in those who underwent surgical resection with PVE than without PVE (50.0% vs 66.7%, P=0.331). However, the rates of severe complication over grade III (33.3% vs 50.0%, P=0.330) and post-operative liver failure were also higher (5.6% vs 10.0%, P=0.914). Overall survival of all groups were presented with Kaplan-Meyer curve in Figure 2. In multivariable model of stratified cox regression analysis, age (HR 1.597-8.405, P=0.002), CCI (HR 1.057-5.917, P=0.037), CA19-9 level (HR 1.158-4.817, P=0.018), and %FLR after PVE (HR0.165-0.716, P=0.004) showed significant association with survival.

Conclusion(s): To improve the survival outcome of perihilar cholangiocarcinoma, PVE should be determined with consideration of possibility of post-operative liver failure, R0 resection, and adjuvant therapy. Also post PVE %FLR is an significant factor associated with long term survival regardless of surgical resection.

Keyword(s): Klatskin Tumor, Portal vein embolization, Hepatectomy

HPB (SURGERY, ONCOLOGY AND ENDOSCOPIC INTERVENTION)

BILE LEAKAGE AFTER HEPATIC RESECTION FOR HEPATOCELLULAR CARCINOMA: DOES IT IMPACT THE SHORT - AND LONG-TERM OUTCOMES?

Ahmed Shehta, Ahmed Farouk, Mohamed Abdel Wahab

Mansoura University, MD, Mansoura / Eldakahlia, Egypt

Background and Purpose: Bile leakage (BL) is one of the commonest morbidities after hepatic resection for hepatocellular carcinoma (HCC). The current study was conducted to evaluate the incidence and different predictive factors for BL after hepatic resection for HCC, and to evaluate of the impact of BL on the long-term survival outcomes.

Material and Methods: We reviewed the patients' data who underwent hepatic resection for HCC during the period between June 2010 and June 2019.

Results: A total of 293 patients were included in the study. BL occurred in 17 patients (5.8%). More Child-Pugh class B patients were found in BL group. There were no significant differences between the two groups except for tumor site, macroscopic portal vein invasion, extent of liver resection, Pringle maneuver use, intraoperative blood loss, and transfusions. Longer hospital stay, higher grades of post-hepatectomy liver failure, and abdominal collections were noted in BL group. After median follow-up duration of 17 months (4-110 months), there were no significant differences between BL and non-BL group regarding overall survival (log-rank, $p = 0.746$) and disease-free survival (log-rank, $p = 0.348$). In multivariate analysis, Child-Pugh class, macroscopic portal vein invasion, liver resection extent (minor/major), and Pringle's maneuver use were the only significant predictors of BL.

Conclusion(s): BL did not significantly impair the long-term outcomes after hepatic resection for HCC. Child-Pugh class, macroscopic portal vein invasion, liver resection extent (minor/major), and Pringle's maneuver use were the main risk factors of BL in the current study.

Keyword(s): Bile leakage; Hepatic resection; Hepatocellular carcinoma; Survival

PREVENTION OF POST HEPATECTOMY LIVER FAILURE AND ASCITES IN CIRRHOTIC PATIENTS UNDERGOING MINIMALLY INVASIVE LIVER SURGERY FOR HCC: HAS THE ROUND LIGAMENT TO BE PRESERVED?

Andrea Benedetti Cacciaguerra[1], *Federico Gaudenzi*[1], *Taiga Wakabayashi*[2], *Daniele Nicolini*[1], *Federico Mocchegiani*[1], *Wakabayashi Go*[2], *Marco Vivarelli*[1]

Polytechnic University of Marche, Department of Experimental and Clinical Medicine, Ancona, Italy[1] - Center for Advanced Treatment of Hepatobiliary and Pancreatic Diseases, Ageo Central General Hospital, Tokyo, Japan[2]

Background and Purpose: Post-hepatectomy liver failure (PHLF) represents a major cause of morbidity and mortality after liver resection. The aim of this study is to assess whether the preservation of the round ligament (RL) may mitigate portal hypertension, thus decreasing the risk of PHLF and ascites in cirrhotic patients while undergoing minimally invasive liver surgery (MILS).

Material and Methods: All the cirrhotic patients who underwent MILS for HCC from 2016 to 2021 in two international tertiary referral center were retrospectively analyzed, comparing cases with RL preserved vs those with RL divided. Only patients with cirrhosis ≥ Child A6, Portal Hypertension and ICG R15 > 10 % were included. Main postoperative outcomes were compared and the risk factors for postoperative ascites (severe PHLF, grade B/C) were investigated.

Results: After the application of the selection criteria, total of 130 MILS patients were identified, 86 patients with RL preserved and 44 with RL divided. RL preserved group showed lower incidence of severe PHLF (7.0% vs. 20.5%, P=0.023) and ascites (5.8% vs. 18.2%, P=0.026) in comparison with RL divided group. After Uni/Multivariate analysis the risk factors related to postoperative ascites were RL division and platelets <92 x103/µL calculated with ROC analysis.

Conclusion(s): The preservation of the round ligament during MILS can prevent the occurrence of post-operative ascites in patients with borderline liver function and portal hypertension.

Keyword(s): Minimally invasive liver surgery, Round ligament preservation, Portal hypertension, Post hepatectomy liver failure, ascites, oncologic surgery

ENHANCED RECOVERY AFTER SURGERY IN LIVER SURGERY: EARLY COMPLIANCE TO CLARIFY THE CAUSE-EFFECT RELATIONSHIP WITH CLINICAL OUTCOME

Mattia Garancini[1], Cristina Ciulli[1], Alessandro Fogliati[1], Fabio Benedetti[1], Francesca Carissimi[1], Mauro Alessandro Scotti[1], Michele Aprigliano[2], Simone Famularo[3], Luca Gianotti[1], Marco Braga[1], Fabrizio Romano[1]

IRCCS San Gerardo dei Tintori, University of Milano-Bicocca, HPB Surgery Unit, Department of General Surgery, Monza, Italy[1] - IRCCS San Gerardo dei Tintori, University of Milano-Bicocca, Department of Anestesiology and Reanimation, Monza, Italy[2] - IRCCS Humanitas Research Hospital, Department of Hepatobiliary and General Surgery, Rozzano, Italy[3]

Background and Purpose: The application of the ERAS program (EP) in liver surgery leads to a faster restoration of pre-operative patient's condition. However, it is debated whether compliance to EP improves postoperative outcome measures or whether the occurrence of morbidity impacts on poor EP compliance. Standardization of a threshold for compliance to EP and of the timing of its detection might clarify this debate.

Material and Methods: From January 2019 to October 2022, EP was prospectively carried out in all patients undergoing elective liver surgery at our Institute. Patient adherence to ERAS items was measured within the second post-operative day (POD2). The cut-off of compliance in terms of number of items achieved that could be predictive of an early post-operative discharge (< 5 days) was determined by a ROC curve analysis. The primary outcome was the compliance to EP and its impact on early discharge. Secondary outcome was correlation of compliance with post-operative morbidity.

Results: 192 patients were enrolled in this study. The optimal threshold for compliance was 83.3% of the ERAS domains achieved. 101 (52.6%) had a compliance ≥ 83.3% (ERAS-IN group), while 91 (47.9%) had a compliance less than the cut-off value (ERAS-OUT group). At the multivariate analysis, items related to early discharge were: minimally invasive surgery (OR:7.165; 95%CI:1.930-26.592), tolerance to oral food (OR:8.841; 95%CI:1.8878-41.630), and mobilization (OR:7.257; 95%CI:1.550-33.977) within POD2. ERAS-IN group had a shorter LOS (6 vs 10 days, p<0.001) and significantly less overall (31.7% vs 59.3%, p<0.001) and major (6.9% vs 20.9%, p=0.005) complications. Readmission rate was 5.9% in the ERAS-IN vs. 3.3% in ERAS-OUT (p=0.386).

Conclusion(s): After the definition of a threshold for adherence and applying an early compliance cut-off value, EP confirms to be the promoter of reduced length of hospitalization and better outcomes. Early hospital discharge seems safe.

Keyword(s): Enhanced Recovery After Surgery, liver surgery, compliance, post-operative complications, early discharge

A MULTI-MODAL PROGNOSTIC MODEL FOR LEFT-SIDED PANCREATIC CANCER UNDERGOING TO MINIMALLY INVASIVE DISTAL PANCREATECTOMY

Niccolo Napoli, Michael Ginesini, Emanuele Federico Kauffmann, Virginia Viti, Armando Di Dato, Elena Annunziata, Lucrezia Lami, Fabio Vistoli, Ugo Boggi

University of Pisa, General Surgery and Transplant Division, Pisa, Italy

Background and Purpose: to identify a prognostic model based on factors related to disease, patient, surgery, post-operative course and associated medical therapy for left-sided pancreatic cancer undergoing to minimally invasive distal pancreatectomy (mi-DPs).

Material and Methods: Data were extracted from a prospectively maintained database reporting all mi-DPs performed for pancreatic cancer at our institution from 2011 to 2022 and retrospectively analyzed considering events occurring within 90 days. Univariate and multivariate Cox proportional-hazard regressions were used for the prognostic model. Cancer specific survival (CSS) calculated from date of surgery or date of starting neo-adjuvant therapy was used as time-to-event endpoint.

Results: Thirty-nine patients underwent mi-DP (23 laparoscopic-DP and 16 robotic-DP). Eight (20.5%) patients underwent neoadjuvant chemotherapy. The median number of harvested nodes was 39. Thirty-three (84.6%) pancreatic ductal adenocarcinoma and 6 malignant IPMN were considered. R1 resection was achieved in 19 (48.7%) in 13 on the anterior margin. The median length of hospitalization was 12 days and 7 (17.9%) patients developed severe post-operative complications. Twenty-seven (72.9%) patients underwent adjuvant chemotherapy and 17 completed all cycles. The median CSS was 36.1 months. The independent prognostic factors by multivariate analysis were BMI (p=0.006) as patient related factor, radical antegrade modular pancreato-splenectomy with divestment of the left-side of superior mesenteric artery (p=0.02), harvested nodes > 40 (p= 0.03) and intra-operative blood transfusions (p=0.01) as surgical factors and completed all cycles of adjuvant therapy (p=0.01) as associated medical therapy related factor.

Conclusion(s): We noticed that patient-related, surgical-related and medical therapy-related factors are significantly associated with the CSS after mi-DP.

Keyword(s): distal pancreatectomy, minimally invasive surgery, prognostic model, pancreatic cancer

OUTCOMES OF DUCT-TO-MUCOSA VS. INVAGINATION PANCREATO-JEJUNOSTOMY FOR DISTAL PANCREATIC STUMP ANASTOMOSIS IN CENTRAL PANCREATECTOMY

Traian Dumitrascu[(1)], *Irinel Popescu*[(2)]

Fundeni Clinical Institute, Carol Davila University of Medicine and Pharmacy, Bucharest, Romania[(1)] - Fundeni Clinical Institute, Titu Maiorescu University, Bucharest, Romania[(2)]

Background and Purpose: Jejunum is primarily used for distal pancreatic stump anastomosis after central pancreatectomy (CP). The study aims to compare duct-to-mucosa (WJ) and distal pancreatic invagination into jejunum anastomoses (PJ) after CP.

Material and Methods: All patients with CP and jejunal anastomoses (January 1, 2002, and December 31, 2022) were retrospectively assessed and compared.

Results: 29 CP were analyzed: WJ – 12 patients (41.4%) and PJ – 17 patients (58.6%). The operative time was significantly higher in the WJ vs. PJ group of patients (195 min vs. 140 min, p = 0.012). Statistically higher rates of patients within the high-risk fistula group were observed in the PJ vs. WJ group (52.9% vs. 0%, p = 0.003). However, no differences were observed between the groups regarding the overall, severe, and specific post-pancreatectomy morbidity rates (p values ≥ 0.170).

Conclusion(s): The WJ and PJ anastomoses after CP were comparable in terms of morbidity rates. However, a PJ anastomosis appears to fit better for patients with high-risk fistula scores. Thus, a personalized, patient-adapted technique for the distal pancreatic stump anastomosis with the jejunum after CP should be considered. At the same time, future research should explore gastric anastomoses' emerging role.

Keyword(s): central pancreatectomy, distal pancreatic stump, duct-to-mucosa anastomosis, jejunal invagination technique, morbidity

PREDICTIVE SCORE IDENTIFYING INTRAHEPATIC CHOLANGIOCARCINOMA PATIENTS WITHOUT LYMPH NODE METASTASES: A BASIS FOR OMITTING LYMPH NODE DISSECTION

Yuya Miura, Ryo Ashida, Katsuhisa Ohgi, Mihoko Yamada, Yoshiyasu Kato, Shimpei Otsuka, Katsuhiko Uesaka, Teiichi Sugiura

Shizuoka cancer center, Division of Hepato-Biliary-Pancreatic Surgery, Shizuoka, Japan

Background and Purpose: The present study aimed to develop a predictive score identifying intrahepatic cholangiocarcinoma (ICC) patients without lymph node metastasis (LNM) by analyzing preoperative factors.

Material and Methods: A total of 123 consecutive ICC patients who underwent liver resection with lymph node (LN) dissection or sampling of regional LNs between April 2002 and December 2021 were retrospectively analyzed. A multivariate logistic regression analysis was performed to develop a predictive scoring system (LNM-PS) for patients without LNM in ICC based on the β coefficients of preoperatively available factors. Moreover, the utility of LNM-PS in patients with peripheral tumors was also evaluated.

Results: Of the 123 patients, 36 (29.3%) had LNM. Four factors were independently associated with LNM: LNM suspicion on enhanced CT (odds ratio [OR] 14.00, p<0.001), low vascularity tumor (OR 6.60, p<0.004), CA19-9 levels ≥ 500U/mL (OR 5.99, p=0.009), and tumor location in the left liver or both (OR 3.88, p=0.046). LNM-PS was created using these factors (assigning 3 points for LNM suspicion on enhanced CT, 2 points for CA19-9 ≥ 500U/mL, 2 points for low vascularity tumor, and 1 point for tumor location in the left liver or both), with an area under the curve of 0.881. A cutoff e of 4 points for LNM-PS, yielded a sensitivity of 0.861 and a negative predictive value of 0.932 in detecting LNM. Moreover, in patients with peripheral tumors, none with LNM-PS <4 had LNM.

Conclusion(s): LNM-PS may be useful for identifying ICC patients without LNM, potentially serving as an indicator for omitting LN dissection.

Keyword(s): intrahepatic cholangiocarcinoma, lymph node metastasis, predictive score, node-negative patients

RESULTS OF RADICAL PANCREATECTOMIES FOR LOCALLY ADVANCED PANCREATIC CANCER, EXPERIENCE OF 111 ARTERIAL RESECTIONS IN 84 PATIENTS

Vyacheslav Egorov, Soslan Dzigasov, Pavel Kim, Alex Kolygin, Mikhail Vyborniy, David Atayan, Tatiana Dakhtler

Ilyinskaya Hospital, Moscow, Russian Federation

Background and Purpose: Modern results of neoadjuvant therapy have justified arterial resections (AR) for locally advanced (LA) PDAC. Combined treatment for LA PDAC patients with "nonmetastatic phenotype" can lead not only for significant increase in survival but for the cure from PDAC. Today efficacy and safety of arterial resections for LAPDAC treatment is a subject for investigation. Aim. To assess safety and efficacy of pancreatectomies (PE) associated with AR for LA-PDAC surgery.

Material and Methods: Retrospective analysis of 84 consecutive PE associated with 111 AR (PE) (2009-2023yy) for morbidity and mortality rates, overall (OS) and progression-free (PFS) survival.

Results: Mean OP time was 384±163min, mean blood loss - 351±196ml, rates of R0- and vein resections – 92 and 67%. Arteries resected were SMA(12), CA and hepatic(99) with branches, PD/DP/TP rate- 12%/53%/35%, overall morbidity 65%, Dindo-Clavien>3-24%, DGE – 29%, Mortality- n6 (7,3%): bleeding(3),MI(1),sepsis(1)) and bowel ischemia. Gastric and liver ischemia–n5(6,6%) and 0, POPF B/C-n21(24,5%). For PDAC(n56) median OS- 28 months, median DFS-20 months, overall 5-year survival-28%, for patients with more than 6 chemotherapy courses–35%. In all cases IOUS and ICG angiography were obligatory technique for blood flow adequacy assessment. All the relapses, except four, were distant.

Conclusion(s): PE+AR can be reasonable option for LA-PDAC patient selected by chemotherapy. Safety and efficiency of such procedures depend on surgeon's experience and IO armamentarium.

Keyword(s): locally advanced pancreatic cancer, arterial resection, pancreatectomy, PDAC neoadjuvant treatment, pancreatic cancer survival

WHICH FACTORS ARE ASSOCIATED WITH DISTAL PANCREATECTOMY OUTCOMES' OPTIMIZATION WITH THE APPLICATION OF AN ENHANCED RECOVERY AFTER SURGERY PROGRAM?

Duilio Pagano, Sergio Li Petri, Fabrizio di Francesco, Sergio Calamia, Pasquale Bonsignore, Alesandro Tropea, Caterina Accardo, Ivan Vella, Noemi Di Lorenzo, Roberta Vella, Giorgia Calandrino, Salvatore Gruttadauria

ISMETT-UPMC Italy, 1. Department for the Treatment and Study of Abdominal Diseases and Abdominal Transplantation. IRCCS-ISMETT-UPMC, Italy, Palermo, Italy

Background and Purpose: Distal pancreatectomy represents the best therapeutic option for patients with body-tail pancreatic neoplasms. The enhanced recovery after surgery protocol is widely used for treating patients with pancreatic neoplasm to speed up postoperative recovery. This study aims to describe our institute's experience in the application of fast recovery protocol in a cohort of patients treated with distal pancreatectomy, identifying predictors facilitating a decrease in the length of hospital stay.

Material and Methods: Were retrospectively enrolled 60 consecutive cases of distal pancreatectomy performed from January 2016 to June 2022 in patients treated with enhanced recovery protocol, 25% of them were treated with spleen preserving procedure. Single-variable logistic regression models were employed to evaluate the potential association between patient characteristics and the probability of postoperative complications. Standard linear regression models were used for length of stay, number of postoperative days from surgery to full bowel function recovery, and number of postoperative days to the interruption of intravenous analgesia administration.

Results: 34 (57%) patients underwent open surgery, and 26 (43%) laparoscopic surgery. Patients who underwent laparoscopic surgery and spleen-preserving procedures experienced a lower complication rate (p=0.037), shorter length of stay, and shorter time of intravenous analgesic requirements. With single-variable logistic regression models patients treated with laparoscopic surgery had statistically significant higher recovery times in terms of nasogastric tube removal (p=0.004), and early enteral nutrition (p=0.001).

Conclusion(s): Continual refinement with enhanced recovery protocol for treating pancreatic neoplasm patients based on perioperative counselling and surgical decision-making is crucial to guarantee low complication rates and reduce patient morbidity and time for recovery.

Keyword(s): pancreatic neoplasm, laparoscopic pancreatic resection, ERAS, outcome

A COMPARISON BETWEEN DIFFERENT DIFFICULTY SCORES IN ROBOTIC LIVER SURGERY

Chiara Gatto[(1)], Matteo Risaliti[(1)], Ilenia Bartolini[(1)], Carlotta Agostini[(1)], Simone Buccianti[(1)], De Peppo Valerio[(2)], Letizia Malucchi[(1)], Luca Tirloni[(1)], Andrea Oddi[(2)], Maria Novella Ringressi[(1)], Scarinci Andrea[(2)], Giacomo Batignani[(1)], Antonio Taddei[(1)], Gian Luca Grazi[(1)]

AOU Careggi, Department of Exepermintal and clinical Medicine, HPBSurgery Unit, Firenze, Italy[(1)] - Regina Elena National Cancer institute, Hepatobiliary and pancreatic surgery IRCCS, Rome, Italy[(2)]

Background and Purpose: The role of minimally invasive techniques is gaining growing attention. Several difficulty scores have been proposed to help surgeons to choose the best technique for each patient. The most used scores in liver surgery are Ban IWATE, Hasegawa, Kawaguchi, and Southampton. We aim to compare these different scores and evaluate the changes in the difficulty level over the years, retrospectively analyzing the results of two Italian high-volume centers.

Material and Methods: All the patients who underwent a robotic liver resection between 2011 and 2023 at the Regina Elena Institute, Rome and at the AOU Careggi, Florence, were retrospectively collected and analyzed.

Results: 101 patients were evaluated. Low-moderate difficult surgeries were the most frequently performed. An increase in the number of patients treated and in the difficulty level has been seen over the years. Compared to all the other scores, Southampton underestimated difficult resections providing a high number of low-medium difficulty cases ($p<0.001$). Similarly, Kawaguchi compared to Hasegawa underestimated low-moderate difficult cases ($p<0.001$). Finally, compared to the IWATE score, both Hasegawa and Kawaguchi overestimated low-moderate cases giving a higher number of difficult resections ($p<0.001$).

Conclusion(s): This analysis shows an increasing difficulty level of the resections over the years. Comparing the different scores, a lot of differences have been found. To compare different case series, it is essential to evaluate the score used to classify the resection difficulty.

Keyword(s): difficulty scores robotic liver surgery

HOW SURGEON CAN PROCEED WHEN VEIN RECONSTRUCTION IN LOCALLY ADVANCED PANCREATIC CANCER SEEMS IMPOSSIBLE

Soslan Dzigasov, Vyacheslav Egorov, Pavel Kim, Alex Kolygin, Mikhail Vyborniy, David Atayan, Tatiana Dakhtler

Ilyinskaya Hospital, Moscow, Russian Federation

Background and Purpose: Pancreatic cancer is considered locally advanced (LA-PDAC) if "SMV/PV are unreconstructible due to tumor involvement or occlusion". Vein reconstruction can be a critical point for LA-PDAC surgery, especially when all SMV tributaries involved. Aim. To assess safety and efficacy of vein management during pancreatectomies for LA-PDAC with involvement of all SMV tributaries.

Material and Methods: Retrospective analysis of 99 pancreatectomies for LA-PDAC with 113 arterial and 74 vein resections(2009-2023).

Results: Vein resection were performed in 74% of pancreatectomies: PD/DP/TP rate-20%/45%/35%. In 15 cases veins only were resected, in 47-arteries+veins, in 32–arteries only. PV-SMV reconstructions were done by direct anastomosis(n11), by patch(n9) and by graft interposition(n12). After resection of SMV with all the tributaries, reconstruction was completed by PV-one of the intestinal branches anastomosis(n24), IMV-SV anastomosis(n8) and without vein reconstruction(n10). Mean OP time-355±154min, mean blood loss-330±170ml, rate of R0- resections–91,4% morbidity 63%, Dindo-Clavien>3-23%,DGE – 25%,POPF B/C-26%. Overall mortality-5,3%, nil -after vein resections, 6,4% - artery+vein and 6,3% after arteries only resections. There were no difference in morbidity and mortality in groups of arterial, vein and combined resections, as well as in groups of different vein reconstructions. Specific complication of SMV resection without reconstruction was prolonged intestinal edema in 5 cases. For PDAC(n76) median OS was 29 months, median DFS-20 months, overall 5-year survival-29%, after more than 6 chemotherapy courses–35%.

Conclusion(s): Pancreatectomies with vein resections in some cases can be CT-planned and successfully completed without vein reconstruction or by the anastomosis with SMV tributary. Use of such techniques can reduce limitations for surgery of LA-PDAC.

Keyword(s): locally advanced pancreatic cancer, vein resection, arterial resection, PDAC survival, pancreatectomy, superior mesenteric vein tributaries resection

BENEFIT OF THE LAPAROSCOPIC APPROACH IN MAJOR HEPATECTOMY

Radoslav Kostadinov, Vassil Mihaylov, Tsvetan Trichkov, Ivan Ivanov, Eyup Eyupov, Stefan Marvakov, Vasil Sirakov, Nikola Vladov

Military Medical Academy, Military Medical Academy, Sofia, Bulgaria

Background and Purpose: Laparoscopic liver surgery is becoming widely adopted treatment for benign and malignant disease. The main advantages of this approach include reduced blood loss, improved post-operative recovery and decreased hospital stay. However laparoscopic major liver resections are still performed mainly in high-volume centers. This study aims to assess the short-term benefit of laparoscopic major hepatectomy (LMH) compared to open major hepatectomy (OMH) in a tertiary referral centre in Bulgaria.

Material and Methods: Our prospectively maintained database was reviewed, searching for patients who underwent LMH. For a 14-year period, between January 2009 – January 2023, we identified 1290 liver resections. For the selected period, 318 patients underwent major hepatectomy. Laparoscopic approach was used in 53 patients (17%). We performed an analysis of the perioperative variables. Continuous variables were analyzed using ANOVA or Mann-Whitney test, depending on the normality of distribution. Categorical variables were analyzed using Chi-square test.

Results: LMH was performed in 53 patients: right hepatectomy – 50 patients; left hepatectomy – 3 patients. The laparoscopic group had significantly longer mean operating time (247 vs. 196 minutes, p= 0,046) and Pringle maneuver (42 vs. 26 minutes, p=0,02). Intraoperative blood loss was significantly less in the LMH group (205 vs. 327ml, p=0,002), as well as the rate of intraoperative hemotransfusion – 15% vs. 32%. The median postoperative stay was shorter in the LMH group 5 days vs. 8 days, p=0,001. The overall postoperative morbidity in the LMH group was 22%. Major complications were recorded in 3 patients (6%) and the 90-day post-operative mortality was nil.

Conclusion(s): The laparoscopic approach in major hepatectomy is associated with longer operative times and hepatic inflow occlusion times. However, the blood loss and the rate of intraoperative transfusion are significantly less. Compared to the open approach, the postoperative stay is significantly reduced.

Keyword(s): Laparoscopic hepatectomy, Major hepatectomy, Liver, Laparoscopic liver resection

INTRALUMINAL BRACHYTHERAPY IN UNRESECTABLE CARCINOMA OF GALLBLADDER PRESENTING AS MALIGNANT OBSTRUCTIVE JAUNDICE

Neeraj Rastogi[1], *Vivek Anand Saraswat*[2], *Sanjay S Baijal*[3]

Sanjay Gandhi Postgraduate Institute of Medical Sciences, Professor, Department of Radiotherapy, Lucknow, India[1] - Mahatma Gandhi Medical College & Hospital, Professor, Department of Gastroenterology, Jaipur, India[2] - Medanta Medicity, Chairman, Interventional Radiology, Gurugram, India[3]

Background and Purpose: Gallbladder carcinoma often present as extra hepatic malignant biliary obstruction and jaundice. The aim is to relieve jaundice and pruritus either by endoscopic or percutaneous transhepatic biliary drainage(PTBD) followed by stenting. Stent block is frequently seen by tumor ingrowth/overgrowth. Intraluminal brachytherapy (ILBT) allows high dose of radiation to tumor area and delays the stent block. This study assesses safety and efficacy of ILBT on stent patency and survival.

Material and Methods: From 1998-2018, 204 unresectable gallbladder cancers with biliary obstruction were analyzed. The 172 patients received ILBT(ILBT group) and 32 did not receive ILBT due to non availability of Iridium(non-ILBT group). The unresectability of disease was determined by CT scan and ultrasound. Malignancy was confirmed by US guided biopsy or cytology. Biliary drainage is attempted by ultrasound and fluoroscopy guided percutaneous transhepatic puncture. HDR brachytherapy with Ir192 used to deliver 10Gy/1fraction, at 1 cm radius from source. Then PTBD tube was replaced by 10 mm, non sheathed self expandable metallic stent(SEMS). All were given 5-Fluorouracil chemotherapy 500mg D1-5 at 4-weekly x 6cycles.

Results: Results were analyzed and updated in January 2023. Palliation of jaundice and pruritus was achieved in all. In both groups, patients' and disease characteristics were well balanced as assessed by two tailed independent 't' test and chi-square test. There was significant improvement in KPS after PTBD in ILBT than non–ILBT group(p=0.003) with median overall survival 7 and 5 months with the stent patency 6 & 4 months. One year OS was 14% versus 3%(p=0.003) respectively. Stent block was more frequently observed in non–ILBT than ILBT group i.e. 68 % vs 13%(p=0.003).

Conclusion(s): PTBD is safe and effective in palliation of Jaundice. The addition of Brachytherapy(ILBT) prolongs stent patency, survival and decreases stent block and gastric outlet obstruction due to high dose radiation delivery around the bile duct.

Keyword(s): Brachytherapy, Gallbladder Cancer, Obstructive Jaundice

COMPLEMENT FACTOR B AS AN ONCOLOGIC PREDICTION MARKER IN THE RESECTED PANCREATIC CANCER

Sung Hyun Kim

Severance Hospital, Yonsei University College of Medicine, Seoul, Republic of Korea

Background and Purpose: For patients with pancreatic cancer, a preoperative assessment of prognosis is crucial to predict cancer recurrence and to prepare a postoperative adjuvant strategy and appropriate patient-counsel. We evaluated the prognostic predictive power of complement factor B (CFB) by comparing it to that of other known tumor markers in resected pancreatic cancer patients.

Material and Methods: From 2016 to 2018, we retrospectively reviewed the plasma CFB levels of 69 pancreatic cancer patients. The hazard ratio (HR) of CFB was calculated, including previously known prognostic factors in pancreatic cancer. In addition, the patients were divided into two groups according to serologic CFB values. Disease-free survival (DFS) and overall survival (OS) rates were analyzed.

Results: Based on the cut-off values (153.5 ng/ml) of plasma CFB, 35 patients were placed in the low CFB group, and the other 34 patients were placed in the high CFB group. In the multivariate Cox regression, high CFB level was one of the poor prognostic factors of resected pancreatic cancer. (DFS: HR=2.08(1.11-3.90), p=0.023; OS HR=2.10(1.05-4.20), p=0.036) In the survival analysis, low CFB group showed better survival outcomes comparing high CFB group. (Low vs. High CFB (months), DFS: 46.0[14.8-77.2] vs. 13.0[2.0-24.0], p= 0.029; OS: 57.0[29.1-84.9] vs. 31.0[20.0-42.1], p=0.025)

Conclusion(s): Preoperative plasma CFB can be used to predict the prognosis of resectable pancreatic cancers.

Keyword(s): Biomarker, complement factor B, pancreatic cancer, prognosis, survival

PREOPERATIVE PREDICTION SCORE FOR UNRESECTABLE FACTORS IN ADVANCED GALLBLADDER CANCER

Ryo Ashida, Katsuhisa Ohgi, Mihoko Yamada, Shimpei Otsuka, Katsuhiko Uesaka, Teiichi Sugiura

Shizuoka Cancer Center, Division of Hepato-Biliary-Pancreatic Surgery,, Shizuoka, Japan

Background and Purpose: Some patients with radiographically resectable gallbladder cancer have occult metastatic disease at laparotomy. However, there are few reports on the predictors of unresectable (UR) disease in patients with radiographically resectable gallbladder cancer.

Material and Methods: One hundred thirty-eight patients underwent exploratory surgery for radiographically resectable gallbladder cancer. UR disease at laparotomy was defined by peritoneal dissemination, positive peritoneal lavage cytology, distant lymph node metastasis, liver metastasis and invasion to the nerve plexus around the proper hepatic artery. Patients were divided into a resected group (R group, n=107) and UR group (n=31). Univariate and multivariate logistic regression analyses were performed using preoperatively available factors to create a prediction score for UR.

Results: Among 31 patients in the UR group, 7 had peritoneal dissemination, 13 had positive peritoneal lavage cytology, 10 had distant lymph node metastasis, 7 had liver metastasis and 1 had invasion to the nerve plexus around the proper hepatic artery. A multivariate analysis revealed that CA19-9>37 U/ml (odds ratio [OR] =5.56, p<0.001), mGPS) >1 (OR=3.05, p=0.013) and PLR>140 (OR=3.05, p=0.030) were identified as independent risk factors for UR. A preoperative prediction score for UR was created by weighting the above three factors and the nomogram showed an area under the curve of 0.812, indicating good predictive potential for UR.

Conclusion(s): For patients whose prediction score indicates a high risk of UR disease, there may be a high possibility of UR factors that are not detectable on preoperative imaging analyses, therefore staging laparoscopy may be useful.

Keyword(s): advanced gallbladder cancer, unresectable factors, prediction score

HAEMORRHAGIC AND THROMBOTIC EVENTS IN POST-HEPATECTOMY LIVER FAILURE: A SINGLE CENTRE CASE SERIES

Gabriele Mauro Di Lucca[1], Cristina Ciulli[2], Francesca Carissimi[2], Federica Ferraina[1], Fabio Benedetti[1], Mauro Alessandro Scotti[2], Mattia Garancini[2], Fabrizio Romano[2]

University of Milano-Bicocca, School of Surgery, Monza, Italy[1] - IRCCS San Gerardo dei Tintori, Unit of HPB Surgery, Department of General Surgery, Monza, Italy[2]

Background and Purpose: Post-hepatectomy liver failure (PHLF) is a serious complication in liver surgery, with a high mortality rate. While progress has been made in clinical management, there are still aspects that require further investigation, such as the relationship between PHLF, thrombotic and haemorrhagic events (TE and HE respectively). In this study we aimed to analyse the incidence of TE and HE in PHLF.

Material and Methods: This study included all patients who underwent liver resection at San Gerardo Hospital from January 2017 to December 2022. A case series of patients with PHLF (as defined by the International Study Group of Liver Surgery), TE and HE was analysed, and a comparison was made between this group and the remaining patient population who did not experience PHLF.

Results: 226 patients were included in the study. PHLF was observed in 24 (10%) patients, and of those patients, 11 (45,8%) experienced postoperative TE while 7 (29,6%) had HE. Six of the patients underwent right hepatectomy, while 12 patients underwent left hepatectomy. All patients received deep vein thrombosis prophylaxis, and the median surgical duration was 340 minutes with a median blood loss of 300 cc. Intraoperative transfusions of blood and plasma were required for 40 patients (16,5%). The overall postoperative mortality rate (at 90 days) after PHLF was 45,8%. TE and HE events were significantly more common in the PHLF group ($p<0.001$). TE and HE concurred to mortality in 5 and 3 patients respectively.

Conclusion(s): TE and HE events are a significant occurrence in patients with PHLF and require thorough investigation and aggressive treatment if diagnosed.

Keyword(s): Post-Hepatectomy Liver Failure, Thrombosis, Haemorrhage, Liver surgery, Liver resection, Postoperative Complications

IMPACT OF MICROSCOPIC PORTAL VEIN INVASION IN PATIENTS WITH HEPATOCELLULAR CARCINOMA

Takashi Kokudo, Fuyuki Inagaki, Yuhi Yoshizaki, Fuminori Mihara, Nobuyuki Takemura, Norihiro Kokudo

National Center for Global Health and Medicine, Department of Surgery, Tokyo, Japan

Background and Purpose: Microscopic portal vein invasion (MPVI) has been reported to be a risk of recurrence in patients with hepatocellular carcinoma (HCC). The aim of the present study is to determine the clinical impact of MPVI in patients with HCC.

Material and Methods: Our database of surgical resection for HCC between February 2012 and December 2022 in a tertiary care Japanese hospital was retrospectively analyzed. We statistically compared the patient characteristics and surgical outcomes in patients with HCC who underwent liver resection. After exclusion of 5 cases with macroscopic portal vein invasion, in 108 hepatic resections, 23 cases showed MPVI and 85 cases did not.

Results: The median survival times (MSTs) in MPVI and non-MPVI groups were 5.96 and 4.12 years, respectively (p=0.035), and the median time to recurrence (TTR) were 4.15 and 2.29 years respectively (p=0.08).

Conclusion(s): Patients with MPVI showed worse survival compared with patients with no MPVI.

Keyword(s): hepatocellular carcinoma, liver resection, vascular invasion

DIABETES-RELATED FACTORS INFLUENCING PROGNOSIS OF PANCREATIC CANCER

Ishido Keinosuke, Takahiro Yamada, Norishisa Kimura, Hayato Nagase, Yusuke Wakasa, Akiko Itaya, Kenichi Hakamada

Hirosaki University Graduate School of Medicine, Department of Gastroenterological Surgery, Aomori, Japan

Background and Purpose: Type 2 diabetes (T2D) is known to be a risk factor for the development of pancreatic cancer (PC), but it is unclear whether it is a prognostic factor. We aimed to investigate T2D-related factors affecting the prognosis of PC.

Material and Methods: We included 155 patients with resectable (R) and borderline resectable (BR) PC who underwent surgery for PC in our department from January 2016 to December 2021. Perioperative clinical factors were analyzed to identify T2D-related factors associated with poor prognosis.

Results: The 155 cases included 151 cases of pancreatic ductal adenocarcinoma, 3 cases of intraductal papillary mucinous carcinoma, and 1 case of adenosquamous carcinoma. There were 132 cases of R-PC and 23 cases of BR. 17 patients (11.8%) had postoperative complications of Clavien-Dindo Grade 3a or higher, but no in-hospital or 90-day postoperative deaths. 126 patients received postoperative adjuvant chemotherapy. Prognostic analysis of the T2D and non-T2D groups showed no significant differences in overall survival (OS) and recurrence-free survival (DFS). In contrast, prognostic analysis of patients with T2D for more than 3 years (hereafter referred to as "long-T2D" group) and the other groups showed that the long-T2D group had a clearly worse OS (95%CI, 12.4-32.5, p<0.01). In multivariate analysis, long-T2D (HR 2.38, 95%CI, 1.22-4.63, p=0.01), with intraoperative blood transfusion (HR 2.06 95%CI, 0.05-4.06, p=0.04) and with postoperative chemotherapy (HR 0.48, 95%CI, 0.23-0.99, p=0.05) were independently poor prognostic factors. In addition, prognostic analysis of 37 patients in the long-T2D group and 37 patients in the other groups, matched for resectable classification, preoperative CA19-9 level, age, gender, and preoperative CT tumor diameter, showed clearly worse OS in the long-T2D group (median survival 24.4 vs 59.8, 95%CI, 12.4-32.5, p<0.01).

Conclusion(s): In R-PC and BR-PC, long-term T2D of more than 3 years was shown to be a poor prognostic factor after surgery.

Keyword(s): Pancreatic cancer, type 2 diabetes mellitus

TRENDS IN THE CHARACTERISTICS AND PERIOPERATIVE OUTCOMES OF PATIENTS UNDERGOING LAPAROSCOPIC AND OPEN RESECTIONS FOR BENIGN LIVER TUMORS

Jasper Sijberden[1], Giuseppe Zimmitti[1], Luca A. Aldrighetti[2], Marc G. Besselink[3], Umberto Cillo[4], John N. Primrose[5], Robert P. Sutcliffe[6], Bjørn Edwin[7], Elio Jovine[8], Andrea Ruzzenente[9], Felice Giuliante[10], Mathieu D'Hondt[11], Alessandro Ferrero[12], Marco Vivarelli[13], Mohammed Abu Hilal[1]

Fondazione Poliambulanza Istituto Ospedaliero, Department of Surgery, Brescia, Italy[1] - IRCCS San Raffaele Hospital, Hepatobiliary Surgery Division, Milan, Italy[2] - Department of Surgery, Amsterdam UMC location University of Amsterdam, Amsterdam, Netherlands[3] - Padova University Hospital, Department of Surgery, Oncology and Gastroenterology, Hepatobiliary Surgery and Liver Transplantation Unit,, Padova, Italy[4] - University Hospital Southampton NHS Foundation Trust, Department of Surgery, Southampton, United Kingdom[5] - Queen Elizabeth Hospital, Liver unit, Birmingham, United Kingdom[6] - Oslo University Hospital and Institute of Medicine, The Intervention Centre and Department of HPB surgery, Oslo, Norway[7] - IRCCS Azienda Ospedaliero-Universitaria di Bologna, Department of Surgery, Bologna, Italy[8] - University of Verona, Department of Surgery, Verona, Italy[9] - Universitŭ Cattolica del Sacro Cuore-IRCCS, Chirurgia Epatobiliare, Rome, Italy[10] - Groeninge Hospital, Department of Digestive and Hepatobiliary/Pancreatic Surgery, Kortrijk, Belgium[11] - Umberto I Mauriziano Hospital, Department of General and Oncological Surgery, Turin, Italy[12] - Riuniti Hospital, Polytechnic University of Marche, Hepatobiliary and Abdominal Transplantation Surgery, Department of Experimental and Clinical Medicine, Ancona, Italy[13]

Background and Purpose: Solid benign liver tumours(BLT) are increasingly discovered, but clear indications for surgical treatment are often lacking. Concomitantly, laparoscopic liver surgery is increasingly performed. The aim of this study was to assess if the availability of laparoscopic surgery has had an impact on the characteristics and perioperative outcomes of patients with BLT.

Material and Methods: This is a retrospective international multicentre cohort study, including patients undergoing a laparoscopic or open liver resection for BLT from 19 centres in eight countries. Patients were divided according to the time period in which they underwent surgery(2008-2013, 2014-2016, and 2017-2019). Unadjusted and risk-adjusted(using logistic regression) time-trend analyses were performed. The primary outcome was textbook outcome(TOLS), defined as the absence of intraoperative incidents≥grade 2, bile leak≥grade B, severe complications, readmission and in-hospital mortality, with a prolonged length of stay added to define TOLS+.

Results: Overall, 845 patients undergoing a liver resection in the first(n=374), second(n=258) or third time period(n=213) were included. The rates of ASA-scores≥3(9.9% to 16%,p<0.001), laparoscopic surgery(57.8% to 77%,p<0.001), and Pringle manoeuvre use(33.2% to 47.2%,p=0.001) increased, whereas the length of stay decreased(5 to 4 days,p<0.001). There were no significant changes in the TOLS rate(86.6% to 81.3%,p=0.151), while the TOLS+ rate increased from 41.7% to 58.7%(p<0.001).

The latter result was confirmed in the risk-adjusted analyses(aOR 1.849,p=0.004).
Conclusion(s): The surgical treatment of BLT has evolved with an increased implementation of the laparoscopic approach and a decreased length of stay. This evolution was paralleled by stable TOLS rates above 80% and an increase in the TOLS+ rate.

Keyword(s): liver neoplasms – hepatectomy - open liver resection – laparoscopic liver resection – treatment outcome

OATP1B3 EXPRESSION IN CASES WITH CONSTITUTIONAL INDOCYANINE GREEN EXCRETORY DEFECT AND ITS EFFECT ON PREOPERATIVE LIVER FUNCTION

Meguri Tanimoto, Yujiro Nishioka, Yoshinori Inagaki, Kiyoshi Hasegawa

Graduate School of Medicine, the University of Tokyo, Hepato-Biliary-Pancreatic Surgery Division, Department of Surgery, Tokyo, Japan

Background and Purpose: The indocyanine green retention rate at 15 minutes (ICGR15) has been widely used to assess preoperative liver function. However, there are some patients with constitutional indocyanine green (ICG) excretory defects. Recently, the absence of organic anion transporting polypeptide1B3 (OATP1B3) due to the particular homozygous mutation was found in those patients. In this study, we analyzed OATP1B3 expression and its effects on other liver function biomarkers in patients who underwent hepatectomy. Subsequently, we evaluated the impact of the heterozygous mutation of OATP1B3 on ICG levels and postoperative outcomes.

Material and Methods: 49 patients who underwent hepatectomy after evaluation of the ICGR15 and technetium-99 m-galactosyl serum albumin (99mTc-GSA) hepatic scintigraphy between 2006 and 2015 were included. We performed immunohistochemistry analysis of OATP1B3 using their specimens and analyzed preoperative liver function and postoperative outcomes. Additionally, we performed genetic analysis of OATP1B3 for 59 patients who underwent hepatectomy for colorectal liver metastasis (CRLM) with normal liver background between 2016 and 2018. And we evaluated their ICG levels and postoperative outcomes.

Results: Six of 49 patients had absent OATP1B3 expression. They had significantly higher ICGR15 value (74.7% vs. 23.5%; p <0.0001), better modified ALBI grade (≤grade 2A, 100% vs. 42%; p =0.010), more normal 99mTc-GSA hepatic scintigraphy (100% vs. 28%; p = 0.0003), and better pathological liver fibrosis (F0-1, 100% vs. 49%; p = 0.027) compared to those with OATP1B3 expression. All three cases without OATP1B3 expression showed the homozygous mutation. Of 59 patients with CRLM, 5 patients had the heterozygous mutation of OATP1B3, however they had no difference in ICGR15 values and other clinical findings compared to the other patients.

Conclusion(s): Constitutional ICG excretory defects may be defined as the absence of OATP1B3 expression. In those patients, 99mTc-GSA hepatic scintigraphy and ALBI grade seemed to be useful for preoperative evaluation of liver function.

Keyword(s): constitutional indocyanine green excretory defect, OATP1B3

PERCUTANEOUS ABLATION OF SMALL-HCC IN PROXIMITY WITH MAJOR VASCULAR STRUCTURES (PERIVASCULAR HCC): IMPACT ON LOCAL TUMOR PROGRESSION

Andrea Bianco[1], Simone Conci[1], Mirko D'Onofrio[2], Tommaso Campagnaro[1], Riccardo De Robertis Lombardi[2], Mario De Bellis[1], Andrea Dalbeni[3], Pietro Campagnola[4], Giancarlo Mansueto[2], Alfredo Guglielmi[1], Andrea Ruzzenente[1]

University of Verona, Division of General and Hepatobiliary Surgery, Verona, Italy[1] - University of Verona, Department of Radiology, Verona, Italy[2] - University of Verona, Division of General Medicine and Hypertension, Verona, Italy[3] - University of Verona, Gastroenterology Unit, Verona, Italy[4]

Background and Purpose: Perivascular location of HCC seem to be a risk factor for local tumor progression after RFA. Aim of the study: identify the features related to local tumor progression (LTP), investigate the impact of perivascular location

Material and Methods: 487 HCC nodules ablated with US-guided single probe percutaneous RFA were retrospectively analyzed. Clinical and radiological features related to LTP were identified by Cox-logistic regression analysis. The Kaplan-Meier method was used to estimate the LTP-free survival probabilities

Results: Overall ablation success rate was 79.7%. Morbidity and mortality rates were 4.7% and 0.0%. The following features resulted independently related to LTP free-survival: nodule size <20mm (HR 2.268, CI 95% 1.585-3.246, p<0.001) and non-perivascular location (HR 2.165, CI 95% 1.481-3.166, p<0.001). Perivascular nodules resulted 19.5% (n=95). 5-years LTP-free survival resulted 46.2% for perivascular nodules and 68.7% for non-perivascular nodules (p<0.001). From the analysis of perivascular nodules, resulted related to LTP-free survival: nodules size <20mm (OR 4.556, CI95% 1.876-11.06, p<0.001), proximity to Glissonian pedicles (OR 3.156, CI95% 1.1317-7.565, p=0.009) and major vascular structure diameter <5mm (OR 3.323, CI95% 1.363-8.102, p=0.007). 5-years LTP-free survival according with nodule size resulted 61.4% versus 17.6% (p<0.001), for nodules near to Glissonian pedicles was 58.4% (versus 38.5% for those near to hepatic veins, p=0.028) and according with major vascular structure diameter resulted 65.9% versus 35.0% (p=0.025). These features were confirmed on multivariate analysis: nodules size <20mm (HR 3.589, CI 95% 1.916-6.722, p<0.001), proximity to Glissonian pedicles (HR 2.294, CI 95% 1.052-4.169, p=0.035) and major vascular structure diameter <5mm (HR 2.177, CI 95% 1.067-4.441, p=0.033)

Conclusion(s): Perivascular location for HCC nodules treated with RFA has an impact on LTP. However, perivascular nodules with low-risk features (<20 mm, proximity to Glissonian pedicles and vascular diameter <5 mm) have a good LTP-free survival. In these cases, RFA may be proposed as treatment in not surgical patients

Keyword(s): ablation, HCC, recurrence

ROLE OF CURIOSITY IN BLENDED MEDICAL EDUCATION FOR ACUTE LIVER FAILURE

Cheng-Maw Ho, Chi-Chuan Yeh, Ming-Tsang Lin, Rey-Heng Hu, Po-Huang Lee

National Taiwan University Hospital, Surgery, Taipei, Chinese Taipei

Background and Purpose: A student's level of curiosity in a subject after learning about it through online videos has not been addressed well in the medical education field. The purpose of this study, therefore, was to investigate online learning's effect on the stimulation of curiosity and short-term learning outcomes in a blended framework of precision medical education.

Material and Methods: A mixed-methods research design was used. During the 2020 academic year, all fifth-year medical students who, prior to class, viewed 6 video clips that presented 6 core concepts were invited to complete a survey and self-reflection on their learning process to assess their level of curiosity in each concept of acute liver failure. For each group of medical students, teaching assistants helped collect anonymous survey data and summative assessment scores representing the students' learning outcomes. Video-viewing patterns, attained through an action log transformation, were also coded for analysis. Mann–Whitney U and Kruskal–Wallis tests were employed to compare differences between groups, and multiple linear regression was used to select the factors affecting learning outcomes. Qualitative data were content-coded through a descriptive approach using thematic analysis.

Results: Of 142 medical students, 136 watched the online videos, 124 responded to the questionnaires, and 92 provided comments. Students' curiosity levels after learning about each concept through online videos significantly correlated with the degree to which a concept was learned. Medical students spent a median of 1.6 hours online, and pause frequency correlated with curiosity in certain concepts. Aroused curiosity was associated with short-term learning outcomes in inconsistent effect sizes and directions. Students' feedback revealed various dimensions of curiosity, including novelty acknowledgment, recognition of an information gap, and information-seeking requests.

Conclusion(s): Curiosity can be induced through online video learning platforms and has a role in short-term learning outcomes in medical education.

Keyword(s): Curiosity; medical education; acute liver failure

SPLEEN-PRESERVING VERSUS STANDART LAPAROCOPIC DISTAL SPLENO-PANCREATECTOMY IN AN EASTERN EUROPEAN HPB CENTER

Ivelin Takorov[(1)], *Tsonka Lukanova*[(1)], *Stefan Tsenov*[(1)], *Maria Abrasheva*[(2)]

Military Medical Academy - Sofia, First Clinic of Abdominal Surgery, Sofia, Bulgaria[(1)] - Military Medical Academy - Sofia, Clinic of Anaesthesiology and Intensive care, Sofia, Bulgaria[(2)]

Background and Purpose: Distal pancreatectomy is currently the only treatment with potential for long-term survival and cure of pancreatic cancer of the body or tail. Laparoscopic distal pancreatectomy is superior to open intervention for the early outcomes. The intimate relationship between spleen vessels and tail of pancreas often imposes a splenectomy. The literature shows decreased postoperative complications in spleen-preserved patients. However it is only feasible in benign lesions. The aim of our study was to provide evidence on the results of spleen-preserving laparoscopic distal pancreatectomy.

Material and Methods: From 01.10.2018 to 31.04.2023, 46 patients underwent distal pancreatectomy in First Clinic of Abdominal Surgery, Military medical academy - Sofia. Among them, 47% had laparoscopic distal pancreatectomy (n=22). In 22% of the minimally-invasive cases, we used Kimura technique to preserve the spleen (n=5). We divided the patients into two groups – standart laparoscopic versus spleen-preserving laparoscopic and retrospectively analyzed their clinicopathological data.

Results: Patients with benign lesions underwent spleen preserving distal pancreatectomies. The mean operative time in this group was 183 (140-235) minutes. Mean hospital stay was 11.4 (5-20) days. One patient developed postoperative pancreatic fistula (POPF) – POPF rate 20%. Morbidity was 20% (n=1) – fluid collection needing percutaneous drainage. We had neither major reinterventions nor postoperative mortality. Patients with malignant lesions underwent standart laparoscopic distal pancreatectomies. The mean operative time was 190 (135-315) minutes and mean hospital stay was 9 days (5-20). POPF rate was 11% (n=2). Postoperative morbidity was 23% (n=4), reoperation rate - 11% (n=2). Postoperative mortality was 5% (n=1) – bilateral pneumonia with respiratory insufficiency.

Conclusion(s): Our experience shows that Kimura spleen preserving distal pancreatectomy is a safe and effective procedure when performed by a skilled surgeon. It should be preferred over standart laparoscopic distal pancreatectomy when dealing with benign tumours because of its benefits regarding hospital stay and outcomes.

Keyword(s) Laparoscopic distal pancreatectomy, Kimura, outcomes

MANAGEMENT OF PANCREATIC DUCTAL ADENOCARCINOMA INVOLVING ABERRANT RIGHT HEPATIC ARTERY ARISING FROM THE SUPERIOR MESENTERIC ARTERY

Sujan Regmee[(1)], Yugal Limbu[(1)], Roshan Ghimire[(2)], Dhiresh Kumar Maharjan[(2)], Prabin Bikram Thapa[(3)]

Kathmandu Medical college teaching hospital, Sinamangal, Fellow, GI and HPB surgery, Kathmandu, Nepal[(1)] - Kathmandu Medical college teaching hospital, Sinamangal, Associate Professor, Kathmandu, Nepal[(2)] - Kathmandu Medical college teaching hospital, Sinamangal, Professor, Kathmandu, Nepal[(3)]

Background and Purpose: Involvement of an aberrant right hepatic artery (aRHA) arising from the superior mesenteric artery in classifying borderline resectable pancreatic ductal adenocarcinoma (BR PDAC) is not included in the prevailing guidelines. This novel classification aims to distinguish different entities depending on the location and degree of tumor involvement of aRHA and propose a strategy to manage it.

Material and Methods: Retrospective analysis was conducted on patients who underwent Pancreaticoduodenectomy (PD) between September 1, 2018- December 31, 2022. Patients with arterial involvement of the accessory right hepatic artery (aRHA) were chosen. Imaging was used to classify the arterial involvement into two groups. Group I: proximal involvement of the aRHA within 2 cm from its origin in the superior mesenteric artery (SMA), group II: distal involvement of the aRHA beyond 2 cm from its origin in the SMA. The resection margin status was examined in relation to the technique used to manage the tumor-involved artery.

Results: 140 patients underwent PD, 9 patients had tumor involvement of the aRHA arising from the SMA. Among the five patients in group I, three patients who had upfront surgery showed R1 resection regardless of periarterial divestment or resection/reconstruction, whereas R0 resection was achieved in the two patients who had neoadjuvant therapy. All patients in group II had R0 resection regardless of receiving neoadjuvant therapy. There were no significant morbidity and mortality in our series.

Conclusion(s): Management strategies should be customized depending on the location and extent of tumor involvement in the aRHA. Our recommendation is to administer neoadjuvant therapy for cases with proximal involvement, while cases with distal involvement of the aRHA should undergo upfront surgery.

Keyword(s): abberent Right hepatic artery, Superior mesenteric artery, Pancreatoduodenectomy

ICG FLUORESCENCE IMAGING: A PROMISING TECHNIQUE FOR ASSESSING MICROPERFUSION AT PANCREATIC RESECTION MARGIN IN PANCREATICODUODENECTOMY

Roshan Ghimire[1], Yugal Limbu[2], Sujan Regmee[2], Dhiresh Kumar Maharjan[1], Prabin Bikram Thapa[3]

Kathmandu Medical college teaching hospital, Sinamangal, Associate Professor, Kathmandu, Nepal[1] - Kathmandu Medical college teaching hospital, Sinamangal, Fellow, GI and HPB surgery, Kathmandu, Nepal[2] - Kathmandu Medical college teaching hospital, Sinamangal, Professor, Kathmandu, Nepal[3]

Background and Purpose: Pancreas being a highly vascularized organ, intravenous ICG administration has been shown to aid in the identification of healthy and poorly perfused pancreatic tissue. This confirmation of good tissue perfusion in the pancreatic remnant can potentially mitigate complications of post-operative pancreatic fistula.

Material and Methods: All consecutive patients who underwent pancreaticoduodenectomy from January to December 2022 were included in this study. Intraoperative ICG was given via intravenous route before pancreatic anastomosis. Vascularity of the resected pancreatic margin was accessed with infrared inspection.

Results: 30 patients underwent pancreaticoduodenectomy in the given time period. Good tissue perfusion of remnant pancreatic cut margin was noted before anastomosis in all the surgeries. However in two patients, pancreatic remnant cut margin had to be refreshened intraoperatively due to low perfusion of pancreatic margin. There were no Clinically Relevant Post-Operative Pancreatic Fistula (CR POPF) noted in this series.

Conclusion(s): The intravenous administration of ICG followed by infrared inspection is a novel method to identify poorly perfused pancreatic tissue thereby potentially decreasing rates of CR POPF.

Keyword(s): Icg Fluorescence, Perfusion Of Pancreas, Pancreatoduodenectomy

MINI-INVASIVE LIVER RESECTION VERSUS PERCUTANEOUS THERMOABLATION FOR SINGLE HEPATOCELLULAR CARCINOMA LESS THAN 3 CM: A REAL-LIFE NATIONAL WEIGHTED COMPARISON OF LONG-TERMS OUTCOMES

Simone Famularo[1], Francesco Ardito[1], Alessandro Vitale[2], Andrea Lauterio[3], Federica Cipriani[4], Nadia Russolillo[5], Mariano Giglio[6], Raffaele Dalla Valle[7], Alessandro Ferrero[5], Luca Aldrighetti[4], Luciano De Carlis[3], Umberto Cillo[2], Franco Trevisani[8], Felice Giuliante[1]

Fondazione Policlinico Universitario Gemelli IRCCS, Hepatobiliary surgery division, Rome, Italy[1] - Department of Surgical, Oncological and Gastroenterological Sciences (DiSCOG), University of Padova, Second General Surgical Unit, Padua, Italy[2] - Grande Ospedale Metropolitano Niguarda, Department of General and Transplant Surgery, Milan, Italy[3] - Ospedale San Raffaele IRCCS, Hepatobiliary Surgery Division, Milan, Italy[4] - Mauriziano Hospital "Umberto I", Department of General and Oncological Surgery, Turin, Italy[5] - Federico II University Hospital, Department of Clinical Medicine and Surgery, Division of HPB, Neaples, Italy[6] - University of Parma, Division of HPB surgery, Parma, Italy[7] - Alma Mater Studiorum-University of Bologna, Department of Medical and Surgical Sciences, Semeiotics Unit, Bologna, Italy[8]

Background and Purpose: In case of very early hepatocellular carcinoma(HCC), the Western guidelines recommend percutaneous thermoablation(PTA) because of less complications than open surgery. The aim was to compare mini-invasive liver surgery (MILS) versus percutaneous thermoablation in terms of overall survival (OS) and disease-free-survival (DFS).

Material and Methods: This is a multicentric (34 centres) real-life observational study derived from the HE.RC.O.LE.S. and ITA.LI.CA. registers. All patients treated for single HCC<=3cm were included. To reduce the selection bias, an inverse-probability weighting (IPW) was done. Survival was estimated by Kaplan-Meier method and uni and multivariate Cox regression analysis.

Results: Between 2010 and 2021, 1465 patients were enrolled, 969 in the PTA and 496 in the MILS group respectively. Alcohol consumption (p<0.001), HBV+ (p:0.001), cirrhosis (p<0.001), Child B (p<0.001), presence of varices (p<0.001), lower median alfa-feto-protein (p:0.042), were more frequent in the PTA group. After IPW for those variables, two pseudopopulation were obtained: 1617 cases in PTA and 1330 in MILS respectively. After a median follow-up of 59 months (IQR 30-93), One, three- and five-years OS were 87.8%, 65.9%, 45.0% for PTA and 94.1%, 80.5% and 69.0% for MILS (p<0.001). Regarding recurrence, 1, 3 and 5 years DFS were 65.3%, 35.5%, 22.8% and 78.9%, 60.1%, 46.9% for PTA and MILS respectively (p<0.001). The risk of recurrence was independently associated with presence of cirrhosis (HR 1.34, 95%CI: 1.05-1.72, p:0.021), presence of varices (HR 1.28, 95%CI: 1.09-1.49, p:0.002), MILS (HR 0.80, 95%CI: 0.68-0.95, p:0.010) and size (HR 1.22, 95%CI: 1.08-1.37, p:0.001). The risk of mortality was associated with being Child B (HR 2.15, 95%CI: 1.66-2.78, p<0.001) and MILS (HR 0.70, 95%CI: 0.56-0.88, p:0.002).

Conclusion(s): MILS was superior to PTA in ensuring oncologic long-term survival and in reducing the risk of recurrence after treatment in case of small single HCC.

Keyword(s): mini-invasive liver surgery, thermoablation, hepatocellular carcinoma, therapeutic hierarchy, very early HCC, small HCC, therapeutic hierarchy

EVALUATION OF THE INTERNATIONAL STUDY GROUP OF PANCREATIC SURGERY AND THE VERONA GROUP RISK CLASSIFICATIONS FOR POSTOPERATIVE PANCREATIC FISTULA AFTER PANCREATODUODENECTOMY IN A SINGLE-CENTER

Traian Dumitrascu[(1)], Vladislav Brasoveanu[(2)], Cezar Stroescu[(3)], Simona Dima[(1)], Irinel Popescu[(2)]

Fundeni Clinical Institute, Carol Davila University of Medicine and Pharmacy, Bucharest, Romania[(1)] - Fundeni Clinical Institute, Titu Maiorescu University, Bucharest, Romania[(2)] - Fundeni Clinical Institute, Fundeni Clinical Institute, Bucharest, Romania[(3)]

Background and Purpose: Pancreatic fistula (POPF) represents an essential source of morbidity after pancreatoduodenectomy (PD). Assessing the risk of POPF development is paramount for clinical decision-making. Recently, the International Study Group of Pancreatic Surgery (ISGPS) and the Verona Group have released risk classifications for POPF. The study assesses the predictive value of the two risk classifications.

Material and Methods: All patients with PD (2016 - 2021) were included. The rate of clinically-relevant POPF and severe morbidity (i.e., ≥ grade 3 Dindo) was calculated per risk category.

Results: Overall, 363 patients were included in ISGPS risk categories: A (n = 151, 41.6%), B (n = 35, 9.7%), C (n=68, 18.7%), and D (n=109, 30%) with corresponding POPF rates of 19.2%, 42.9%, 39.7%, and 41.3%. The severe morbidity rates per category were 21.2%, 25.7%, 23.5%, and 35.8%. According to the Verona risk classification, the patients were considered at low (n=156, 43%), intermediate (n=113, 31.1%), and high-risk (n=94, 25.9%), with corresponding POPF rates of 20.5%, 33.6%, and 47.9%. The severe morbidity rates per category were 18%, 27,4%, and 39.4%. There were statistically significant differences in POPF rates only between the A and B groups (p = 0.006) but not between the B and C groups (p = 0.833) and between C and D groups (p = 0.875). However, there were statistically significant differences in POPF rates between the low, intermediate, and high-risk groups (p = 0.017, 0.042, and < 0.0001, respectively). No differences were observed between the groups regarding the morbidity rates for both risk classifications (p values ≥ 0.073).

Conclusion(s): The Verona classification is a good tool for adequately assessing the risk of POPF development after PD, but there is no corresponding predictive value for severe morbidity. The ISGPS classification failed to stratify the risk of both POPF and severe morbidity after PD.

Keyword(s): pancreatoduodenectomy, pancreatic fistula, severe morbidity, risk classification

CLINICO-MORPHOLOGICAL CORRELATION OF RESECTED PANCREATIC DUCTAL ADENOCARCINOMA AFTER NEOADJUVANT TREATMENT

Gabriella Lionetto[1], Laura Maggino[1], Filippo M. Martelli[2], Fabio Casciani[1], Giulia Savegnago[1], Salvatore Paiella[1], Antonio Pea[1], Alessandro Esposito[1], Claudio Bassi[1], Aldo Scarpa[2], Roberto Salvia[1], Giuseppe Malleo[1], Claudio Luchini[2]

University of Verona, Department of Surgery, Dentistry, Paediatrics and Gynaecology - Unit of Pancreatic Surgery, Verona, Italy[1] - University of Verona, Department of Diagnostics and Public Health - Section of Anatomical Pathology, Verona, Italy[2]

Background and Purpose: To investigate the frequency of the different PDAC morphologies in patients undergoing radical intent pancreatectomy after neoadjuvant therapy (NAT); and to determine the prognostic impact of the presence of a secondary morphology in the primary tumor.

Material and Methods: All patients who underwent pancreatic resection after NAT for PDAC (2013-2019) at one academic institution were enrolled. All pathological samples were included in toto and reviewed by experienced pathologists. The presence of a secondary morphology in the primary tumor specimen was determined according to a morphological cut-off ≥10%. Tumor regression grade (TRG) was classified according to the MDA grading system. The clinico-pathological characteristics and the survival of the cohort were studied by means of conventional statistical analyses.

Results: Among the 401 included patients 205 (51,5%) received Folfirinox, 134 (33,7%) gemcitabine/nab-paclitaxel. The median follow-up was 28.0 months, and the median disease specific survival (DSS) was 29.7 months. Gland forming PDAC with conventional morphology (n=167, 41,6%) was the most frequent subtype. Overall, no significant difference in DSS was observed. 154 (38,4%) patients presented a secondary morphology in the primary tumor. PDACs harboring a secondary tumor morphology displayed a significantly more advanced pathological profile and a higher TRG, as well as significantly shorter DSS and recurrence free survival (RFS). At multivariable Cox regression, the presence of a secondary tumor morphology was independently associated with worse DSS (HR 1.881, $p<0.001$) and RFS (HR 1.635, $p<0.001$).

Conclusion(s): In patients receiving pancreatectomy after NAT, the presence of a secondary morphology in the primary tumor is frequent, occurring in over one third of the cases. This feature is associated with a less favorable pathological profile and a higher TRG, and represents an independent predictor of shorter DSS and RFS. Based on these findings, including a detailed morphological description in pancreatectomy pathology reports might provide valuable prognostic information and possibly help post-surgical decision-making.

Keyword(s): PDAC

FAILURE TO RESCUE AFTER DUODENOPANCREATECTOMY: WHAT CAN WE DO?

Serena Langella, Giacomo Bottero, Nadia Russolillo, Rebecca Panconesi, Gaia Russo, Alessandro Ferrero

Mauriziano Hospital, General and Oncological Surgery, Turin, Italy

Background and Purpose: The term Failure to Rescue (FTR) was introduced in pancreatic surgery to identify patients in which major complications lead to death. Aim of the study was to find factors associated to FTR after duodenopancreatectomy (DP)

Material and Methods: A cohort of 311 consecutive patients who underwent DP from January 2014 to December 2022 was included in the study. All perioperative variables were analyzed according to the severity of complications (Dindo>/=IIIA). Results in "Rescue" patients and FTR were compared.

Results: Major complications were registered in 67 patients (21.5%): 49 were classified Dindo III/IV (rescue) and 18 Dindo V (FTR). Univariate analysis found risk factors for FTR: comorbidity, ASA 3/4, primitive site duodenum, soft pancreas and pneumonia. Among these factors, post-operative pneumonia was an independent predictor of FTR (OR 10.91 CI95%1.494-79.774), p=0-019. Excluding from FTR group 4 deaths for SARSCOV2 pneumonia (without any surgical complications associated), multivariate analysis showed the haemoperitoneum as the only independent predictor for FTR (OR 0.162 CI95% 0.027-0.959), p= 0.045.

Conclusion(s): During Covid era post-operative pneumonia heavily burden on FTR. In patients without pneumonia, the management of hemorrhagic complications plays a key role to decrease the risk of mortality after DP.

Keyword(s): failure to rescue, duodenopancreatyectomy, Covid

DUODENOPANCREATECTOMY WITH PANCREATOGASTRIC ANASTOMOSIS: EVOLUTION OF POST-OPERATIVE RESULTS AT A TERTIARY CENTER

Giacomo Bottero, Serena Langella, Marsia Tancredi, Rosario Giordano, Gaia Russo, Alessandro Ferrero

Mauriziano Hospital, General and Oncological Surgery, Turin, Italy

Background and Purpose: Aim of the study was to analyze early post-operative results (<90gg) after duodenopancreatectomy (DP) with pancreaticogastric anastomosis (PGA) assessing the evolution over time.

Material and Methods: from January 2014 to December 2022 data from a prospectively collected database on DP with PGA was retrospectively analyzed. Both benignant and malignant diseases were considered. The main perioperative variables were studied to evaluate post-operative outcomes and the oncologic appropriateness in case of malignat disease. Results in patients who underwent DP in Period 1 (P1, years 2014-2019) were compared with those in Period 2 (P2, years 2019-2022).

Results: 311 were included in the present study. The number of DP per years increased over time (p=0.004). Preoperative data of the two groups were homogeneous. FRS>/=7 was observed in 8.1% P1 vs 14.3% P2, p=0.05. The rate of post-operative pancreatic fistula was 30.6% P1 vs 18.6%, p= 0.019, arterial aneurysm 4.1%P1 vs 0.5%, p=0.037, hemoperitoneum 12.2% P1 vs 4.8% P2, p=0.017. Median hospital stay decreased from 17 days P1 to 13 days P2, p=0.003. R1 rate were similar (28.8% P1 vs 23.5%, p=ns). Median number of harvested lymph-node in case of lymphadenectomy was 26 P1 vs 31 P2 (8-99), p<0.001. 90-days mortality (5.7% P1 vs 5.9% P2, p=ns) and Dindo III/IV complications (15.4% P1 vs 16% P2, p=ns) didn't changed.

Conclusion(s): post-operative outcomes after DP with DP improved over time. The increasing number of procedures per years and the standardization of both surgical technique and perioperative management contributed to this improvement.

Keyword(s): duodenopacreatectomy, PGA, post-operative outcomes

MANAGEMENT OF GIANT HEPATIC HEMANGIOMAS: REPORT OF 3 CASES IN SENEGAL AND LITERATURE REVIEW

Gueye Mohamadou Lamine[1], Sow Omar[2], Saidy Raymond[3], Niang Cheikhou[4], Diop Balla[5]

Cheikh Anta Diop University, Professor Assistant, Dakar, Senegal[1] - Assane Seck University of Ziguinchor, Professor Assistant, Ziguinchor, Senegal[2] - Cheikh Anta Diop University, Student, Dakar, Senegal[3] - HMO, Radiologist, Dakar, Senegal[4] - Thies University, Professor, Thies, Senegal[5]

Background and Purpose: To report the diagnostic features and management of giant liver hemangioma in Senegal.

Material and Methods: Descriptive study with 3 cases.

Results: Case 1 - A 37-year-old patient with an abdominal contusion presented with tenderness on the right hypochondrium. CT scan revealed a heterogeneous enhanced 8 cm lesion of the segment VII of the liver, suggesting a parenchymal hematoma. Biological workup (including FBC, hepatic workup, renal workup) were unremarkable. A second control CT scan led to the diagnosis of uncomplicated giant hemangioma of segment VII. He was discharged at day 2 with favorable evolution without surgery. Case 2 - A 43-year-old female patient presented with a painful and warm epigastric mass, hemodynamic parameters were unremarkable. CT scan revealed a discontinuous and nodular lesion of the liver segments II and III of 12 cm with enhancement kinetics suggesting a hepatic hemangioma. Conservative treatment was recommended with analgesics use if necessary. Given the persistence of pain and the patient's anxiety, surgery was performed at M7. An uncomplicated giant hemangioma of the left lobe was found. A left lobectomy was performed, with simple outcomes. Pathological examination of the specimen confirmed the diagnosis of hepatic hemangioma. Case 3 - A 48-year-old female patient presented with epigastric pain evolving for 3 weeks. She had a known history of a 9 cm hepatic hemangioma since 4 years for wich surgical abstention was decided. Physical examination revealed a small epigastric hernia. Abdominal CT confirmed the hernia and revealed a 14 cm hemangioma (6 cm growth). Laboratory tests were normal. An aponeurorrhaphy was performed for the hernia, the hemangioma was respected as it was asymptomatic. Follow-up was favorable, with disappearance of epigastric pain.

Conclusion(s): There is no consensus on the optimal therapeutic strategy for giant hemangiomas. The growth potential of these tumors often push the surgeon to adopt an interventionist attitude, which is not accepted by all.

Keyword(s): Giant hemangioma, liver

LIVER RESECTION FOR PRIMARY INTRAHEPATIC LITHIASIS IN THE WESTERN WORLD: SAFETY, EFFICACY, AND ASSOCIATION WITH CHOLANGIOCARCINOMA

Francesco Taliente, Agostino Maria De Rose, Simone Famularo, Giovanni Moschetta, Elena Panettieri, Francesco Ardito, Felice Giuliante

Hepatobiliary Surgery Unit, Foundation ''Policlinico Universitario A. Gemelli'', IRCCS, Catholic University, Rome, Italy

Background and Purpose: Hepatolithiasis, also known as primary intrahepatic lithiasis (PIL), refers to the presence of gallstones in the bile ducts. The incidence of PIL varies geographically, with higher rates observed in East Asia compared to the Western world. PIL is often symptomatic condition with a possibility of malignant transformation. Surgical resection is considered the most effective treatment. This retrospective single-center cohort study aimed to evaluate the safety and efficacy of liver resection for PIL in the Western world. Additionally, the study sought t o identify common clinical features linking PIL and cholangiocarcinoma (CC)

Material and Methods: A total of 151 consecutive patients who underwent liver resection for PIL at a single tertiary referral center in the Western world were included in the study. The study design involved retrospective analysis of patient data. Surgical techniques and outcomes were assessed, and associations between clinical features and CC were investigated.

Results: The study findings indicate that hepatectomy for PIL is a safe and effective treatment option. The incidence of major morbidity and mortality was low. However, postoperative complications were more likely in patients with prior infections and long term disease. Laparoscopy seems to be protective towards septic complications. Notably, PIL showed a strong association with CC with an overall incidence of 13.2 %.

Conclusion(s): This study demonstrates that liver resection is a safe and effective treatment for PIL in the Western world. Laparoscopic techniques contribute to favorable outcomes, with low rates of complications. An association between CC and PIL was noted. Before surgery it is important to rule out malignancy. Patients with recurrent PIL should undergo extended surveillance due to the increased risk of developing CC over time after liver resection.

Keyword(s): Hepatolithiasis, primary intrahepatic lithiasis, cholangiocarcinoma, liver resection, laparoscopy

SURGICAL MANAGEMENT OF HEPATOCELLULAR CARCINOMA IN SENEGAL: A PROSPECTIVE SERIES AT DANTEC / HMO HOSPITAL

Mohamadou Lamine Gauye [(1)], Reymond Saidy[(2)], Balla Diop[(3)], Omar Sow[(2)], Madieng Dieng[(4)]

Ouakam Military Hospitals (HMO), Cheikh Anta Diop, Dakar, Senegal[(1)] - Peace hospital, Assane Seck University of Ziguinchor, Ziguinchor, Senegal[(2)] - Thies hospital, Thies University, Thies, Senegal[(3)] - Faculty of medicine, Cheikh Anta Diop University, Dakar, Senegal[(4)]

Background and Purpose: Hepatocellular carcinoma (HCC) is a common disease commonly diagnosed at late stage in our setting. Surgical management has variable results depending on the disease's stage and the patient's condition. This study aim to report the indications and surgical results of HCC in patients operated at the Aristide Le Dantec (HALD) and Ouakam Military Hospitals (HMO).

Material and Methods: We carried out a prospective and descriptive study between January 2022 and March 2023. Included were patients who underwent surgical treatment for HCC in General Surgery department of HALD and HMO. The parameters studied were epidemiological data, stage of the disease, patient's condition, surgical procedure and morbi-mortality.

Results: Seven patients met the inclusion criteria. The sex ratio was 5:2 in favor of men. Mean age was 36.8 years. Four patients were HBsAg positive. All patients had a thoraco-abdomino-pelvic CT scan results compatible with HCC and also MRI was requested in 4 patients, evoking HCC in all cases. The patients were classified as Child A6 in 5 cases and B7 in 2 cases. There were 5 BCLCA and 2 BCLCB patients. Prophylactic treatment with Tenofovir was started in the Ag HBsAg + patients prior to surgery (n=4). Three major hepatectomies were performed (2 right hepatectomies; one included segment IV and another left hepatectomy); 2 bisegmentectomies (segments VI-VII and V-VI); 2 segmentectomies (segment V), one was associated with right colectomy for colonic invasion. Three cases of morbidity (2 high-flow biliary fistulas and one stroke). One case of mortality due to post hepatectomy liver failure in a 28-year-old B7 at Day 35 post-extended right hepatectomy.

Conclusion(s): HCC is still diagnosed at a late stage in low-income-countries. Rigorous patient selection, better surgical planning and optimization are essential to improve results. Systematic vaccination against HBV is the best way to prevent this condition.

Keyword(s): HCC, hepatectomy, surgery, Hepatitis B virus.

HYPER ACCURACY THREE-DIMENSIONAL SURGICAL TECHNOLOGY FOR PLANNING COMPLEX LIVER RESECTIONS: A PRELIMINARY SINGLE CENTER EXPERIENCE

Andrea Marchese, Laura Alaimo, Diletta Roman, Simone Conci, Mario De Bellis, Tommaso Campagnaro, Alfredo Guglielmi, Andrea Ruzzenente

Department of Surgery, Dentistry, Gynecology and Pediatrics, Division of General and Hepato-Biliary Surgery, University of Verona, Verona, Italy

Background and Purpose: Three-dimensional visualization technology (3DVT) has been recently introduced to oncologic liver surgery. The aim of this observational study was to describe the preliminary results of 3DVT for complex liver resections.

Material and Methods: In the period 2020-2022 were recorded prospectively the perioperative data of 73 patients candidate to complex liver resections at Division of General and Hepatobiliary Surgery of Verona. The variables: tumor site, vascular anatomical variations, vascular/biliary neoplastic invasion, were evaluated preoperatively with two-dimensional diagnostics (2DI) and with 3DVT. The results were compared with intraoperative and pathological evidence.

Results: 59 hepatectomies were performed: 35 major (59.3%) and 13 extended (22%). We did not observe any differences between 2DI and 3DVT in the calculation of FRLV and tumor size. The paired samples t-test assessed positive correlation between the two methods ($p< 0.001$). After 3DVT, the previously planned procedure was changed in 16 cases (27.1%), due to the clearer information provided. The 3DVT identified 63 (56.2%) anatomical variations of the hepatic artery, 10 (0.08%) of the portal vein, and 39 (34.8%) major hepatic venous tributaries. 2DI identified 10 cases (16.9%) of vascular invasion, while 3DVT 23 (38.9%). The intraoperative finding was of 24 cases (40.6%). Vascular reconstruction was performed in 12 cases (20.3%) and portal vein was resected in more than half of these cases (66.7%). The CCI complication index was 29.6 (IQR, 20.9-40.8), mortality 5.9% (3).

Conclusion(s): The precision of the 3DVT in evaluating liver anatomy and identifying the tumor site and its relationship with adjacent structures is useful for planning complex liver resections and could improve surgical results.

THE PREOPERATIVE RECURRENCE SCORE: DEVELOPMENT AND INTERNAL VALIDATION OF A SIMPLE TOOL TO PREDICT EARLY RECURRENCE AFTER SURGERY IN PERI-HILAR CHOLANGIOCARCINOMA

Simone Conci[1], Giovanni Catalano[1], Davide D'Amore[1], Mario De Bellis[1], Tommaso Campagnaro[1], Riccardo De Robertis[2], Laura Alaimo[1], Bernardo Dalla Valle[1], Mirko D'Onofrio[2], Andrea Ruzzenente[1], Alfredo Guglielmi [1]

Division of General and Hepatobiliary Surgery, University Hospital G.B. Rossi, Verona, Italy[1] - Department of Radiology, University Hospital G.B. Rossi, Verona, Italy[2]

Background and Purpose: Despite advances in surgical techniques, the rate of early recurrence in perihilar cholangiocarcinoma (PCC) remains high. In this study, we sought to identify preoperative radiological predictive factors for recurrence in order to develop a simple prognostic tool to avoid futile up-front surgery in peri-hilar cholangiocarcinoma: the Preoperative Recurrence Score (PRS).

Material and Methods: Data of patients who underwent surgery for PCC between 2009 and 2020 were retrospectively collected. Only patients with CT or MRI performed before any invasive procedure were included. The images were analyzed and reviewed to evaluate tumor size, presence of suspected lymphadenopathy, vascular involvement both portal and arterial, and biliary extension according with Bismuth classification. Univariate and multivariate analyses on RFS were performed to identify the risk factors and determine the HR of each one. The PRS was based on the respective HR, and then validated using a prospective internal cohort of patients who underwent surgery for PCC in 2021 and 2022.

Results: The testing cohort and the validation cohort included 54 and 27 patients, respectively. Preoperative radiological factor related with RFS were portal invasion (HR 2.473, p=0.019), suspected lymph-nodes (HR 2.048, p=0.042), tumor size >18mm (HR 1.879, p=0.047), and arterial invasion (HR 1.512, p=0.032). The PRS was calculated based on HR of each factor and the cohort were divided into low (< 5 points) and high risk (> 5 points) group. Recurrence rates were 0.0% and 27% at 6 months and 24% and 62% at 12 months in low and high risk group, respectively (p=0.006, p=0.007). Applying the PRS score to the validation cohort: recurrence rates at 12 months were 14% and 67% in low and high risk group (p=0.036).

Conclusion(s): The Preoperative Recurrence Score is a simple tool useful to preoperatively stratify the risk of recurrence in resectable PCC's patients. Up-front surgery should be carefully evaluated in patients with high PRS. Multimodal and integrated treatment strategies should be evaluated in high risk patients.

INFECTION AND COMPLICATIONS IN SURGERY AND ONCOLOGY

CEPHALOSPORIN PROPHYLAXIS IS ASSOCIATED WITH BETTER OUTCOMES IN PANCREATICODUODENECTOMIES AFTER BILIARY DRAINAGE

Tommaso Stecca, Bruno Pauletti, Bao Quoc Riccardo, Mariangela Ruperto, Alessandra Greco, Adriana Di Giacomo, Ezio Caratozzolo, Marco Massani

AULSS2 Marca Trevigiana, General Surgery Department, HPB Referral Centre, Treviso, Italy

Background and Purpose The risk of postoperative morbidity is burden by infectious complications in patients with preoperative biliary drainage (PBD) undergoing pancreaticoduodenectomy (PD). The aim is to evaluate the outcomes in patients with and without PBD and the role of bacteriobilia and prophylaxis in post-operative complications.

Material and Methods: Data relating to the PDs performed at the HPB Surgical Dpt of Treviso Hospital between 2014 and 2021 were retrospectively evaluated. Morbidity and intra-hospital mortality related to preoperative biliary stent were the primary outcomes. Data on the biliary cultures were analyzed: bacterial species, resistance to prophylactic antibiotic therapy and therapeutic switch in the post-operative period.

Results: Between 2014 and 2021, 130 patients (mean age 69 yrs) underwent PD; 61 were treated with early surgery (ES) and 69 underwent preoperative biliary drainage (PBD). Overall morbidity was 60.6% in the ES cohort and 52.2% in the PBD. In the PBD group, bacteriobilia was found in 88.4% of the bile cultures (61/66, 3 missing), versus 9.8% in the non-PBD group. In 39.3% (24/61) of cases, at least one of the isolated bacteria was resistant to the perioperative antibiotic prophylaxis. In the PBD group, the majority of postoperative surgical complications occurred in patients with prophylaxis-resistant bacteriobilia, although not statistically significant (62.5% vs 45.9%; p = 0.08). At correlation analysis, cephalosporin-based prophylaxis was less prone to resistance, p=0.049 (27.6% vs 50.0%). Mean post-operative day of oral diet resumption was delayed (7 vs 6 days, p=0.025) and mean hospital stay (18 vs 13 days, p=0.027) was longer in patients with resistant bacteriobilia.

Conclusion(s): Patients undergoing PD after PBD can benefit from a cephalosporin-based antibiotic prophylaxis with a consequent decrease in morbidity and better outcomes (hospital stay and oral intake). Cephalosporin is less prone to microbial resistance and should be the prophylaxis of choice in PBD-patients undergoing a PD.

Keyword(s): Pancreaticoduodenectomy, bacteriobilia, preoperative biliary drainage, prophylaxis

NON HODKIN'S LYMPHOMA WITH MULTIPLE EXTRA NODAL ORGAN INVOLVEMENT: CASE REPORT AND REVIEW OF LITERATURE

Mahim Koshariya[1], Prasoon Singh[2], Yogshri Chaubey[1], Amey Jain[1], Vijay Tekam[2], Arshad Khan[2], Nikhil Tekwani[2], A.P. Sharath[2]

Gandhi Medical College, Department of Surgery, Gandhi Medical College and Hamidia Hospital Bhopal, India 462001, Bhopal, India[1] - Gandhi medical college, Department of Surgery, Gandhi Medical College and Hamidia Hospital Bhopal, India 462001, Bhopal, India[2]

Background and Purpose: NHL is a heterogeneous group of malignancies arising predominantly from the lymph nodes and characterized by an abnormal clonal proliferation of T-cells, B-cells or both. Non-Hodgkin lymphomas located at the bone are very rare diseases that account for approximately 5% of all extra-nodal non-Hodgkin lymphomas, among which diffuse large B cell is most common. The occipital soft swelling is a very uncommon presentation for bone involvement.

Material and Methods: A 45Yr old Female presented with Generalised lymphadenopathy, Right axillary lump, occipital swelling, Parotid swelling and severe splenomegaly. Her Computed Tomography (CT) Abdomen reported 26 cm massive splenomegaly with few soft tissue lesions in retroperitoneal region. Her Computed Tomography (CT) Thorax reported soft tissue density in Right axilla suggestive of lymphomatous origin, few soft tissue nodules in apical segment of right upper lobe, left upper lobe & left lower lobe likely metastasis and her CT Head reported extra calvarial lesion in subcutaneous plane of occipital convexity associated with cortical erosion & multiple permeative lytic lesions with further extension into epidural space. Excision biopsy of right axillary lump along with IHC markers confirmed the diagnosis of Non Hodgkin's Lymphoma of B cell (DLBCL) type.

Results: The patient is currently receiving chemotherapy and is on continuous follow up program with laboratorial and imaging evaluation. There is comparable decrease in generalised Lymph nodes size and splenomegaly.

Conclusion(s): Careful evaluation of patient and proper investigations are required for correct diagnosis so that patient will receive the treatment in early stage which leads to a good prognosis.

Keyword(s): Non Hodgkin's Lymphoma ,Extra nodal involvement ,Multiple organs.

INFLAMMATORY BOWEL DISEASES MANAGEMENT

IMPACT OF KONO-S ANASTOMOSIS ON LONG-TERM QUALITY OF LIFE AFTER ILEOCOLIC RESECTION IN CROHN'S DISEASE

Michele Cricrì[1], Francesca Paola Tropeano[1], Antonio Miele[1], Antonio Rispo[2], Fabiana Castiglione[2], Giovanni Domenico De Palma[1], Gaetano Luglio[1]

University of Naples Federico II, Endoscopic Surgery Unit, Naples, Italy[1] - University of Naples Federico II, Gastroenterology Unit, Naples, Italy[2]

Background and Purpose: This study aimed to assess the impact of the recent antimesenteric, functional, end-to-end, handsewn Kono-S anastomosis on quality of life of patients undergoing ileocolic resection for primary or recurrent Crohn's disease (CD).

Material and Methods: Patients with primary or recurrent CD participating in the ongoing SuPREMe-CD trial were interviewed about quality of life using the Inflammatory Bowel Disease Questionnaire (IBDQ). Primary endpoint was disease-specific quality of life, assessed with IBDQ. Secondary outcomes were quality of life related to bowel symptoms, systemic symptoms, social function, and emotional function, measured by the scores of the four individual domains of IBDQ. Statistics was performed by using standard analyses.

Results: Of the 94 patients included, 51 (54%) received the conventional side-to-side anastomosis and 43 (46%) the Kono-S anastomosis. The two groups were comparable in terms of demographic and disease-related factors. The mean time from surgery was 53.7 months in the conventional group and 54.4 months in the Kono-S group (P=0.8). The mean total IBDQ score was 155.1+28.07 in the conventional group and 163.8+25.23 in the Kono-S group (P=0.1). When considering Bowel symptoms and Social function, mean scores were 50.7 and 23.5 in the conventional group, and 56.3 and 26.5 in the Kono-S group, respectively (P=0.002 and 0.02, respectively). Systemic symptoms and emotional function mean scores were 23.5 and 57.3 in the conventional group, and 24.8 and 56.2 in the Kono-S group, respectively (P=0.3 and 0.6, respectively). Kono-S anastomosis was independently associated with improved quality of life regarding bowel symptoms (P=0.003). and social function (P=0.02) after correcting for other confounding factors on linear regression analysis.

Conclusion(s): Kono-S anastomosis is associated with significantly better long-term bowel and social functions- related quality of life compared to conventional side-to-side anastomosis; global quality of life is also improved, even if not significantly.

Keyword(s): Crohn's disease, Kono-S anastomosis, Quality of life

LAPAROSCOPIC AND ROBOTIC SURGERY

ROBOT ASSISTED PANCREATODUODENECTOMY: LEARNING CURVE ANALYSIS OF A HIGH-VOLUME CENTER. THE PISA EXPERIENCE

Michael Ginesini[1], Kauffmann Emanuele Federico[1], Niccolò Napoli[1], Virginia Viti[2], Armando Di Dato[2], Lucrezia Lami[2], Elena Annunziata[2], Fabio Vistoli[3], Ugo Boggi[2]

University of Pisa, General Surgery and Transpland Division, Pisa, Italy[1] - University of Pisa, General Surgery and Transplant Division, Pisa, Italy[2] - University of Pisa, General, Pisa, Italy[3]

Background and Purpose: to analyze the learning curve of robot-assisted pancreatoduodenectomy (r-PD) and the effects of training on short-term prognosis.

Material and Methods: the learning curve of r-PD performed by a single highly experienced surgeon in a high-volume center was determined using the cumulative sum method, based on operative time (OT) and length of hospitalization (LOH). Data were extracted from a prospectively maintained database and analyzed retrospectively considering all events occurring within 90 days of index operation. The outcomes were studied into three different groups based on three phases of CUSUM-LOH.

Results: We analyzed 298 r-PD. A three phases model was observed for both outcomes. Considering OT there was a drop-down after 37 procedures (median OT 550 min. vs. 505 min., p=0.0017) and an increase after 233 procedures (median OT 505 min. vs. 547 min., p=0.0001). Considering LOH, the plateau was achieved after 130 procedures and a drop-down after 183 procedures (median LOH: 18 days vs. 15 days, p= 0.02) without differences in OT and conversion rate; conversely the vein resection rate increased (6.9% vs. 7.6% vs. 14.8%, p=0.04). The three groups didn't shown difference considering severe post-operative complications and mortality rate, clinically-relevant POPF rate and failure-to-rescue rate.

Conclusion(s): OT is initially reduced (37 procedures) and subsequently increased (233 procedures) due to the higher procedure's difficulty (represented by the vascular resections rate). Proficiency regarding post-operative outcomes (LOH) was obtained later (183 procedures). Despite more challenging procedures the mastery by the surgeon and the team allows complications rate to remain unchanged and shorten the LOH.

Keyword(s): robot assisted pancreatoduodenectomy, learning curve, pancreatic cancer

THE LEARNING CURVES OF CONCOMITANT TRAINING IN ROBOTIC AND LAPAROSCOPIC LIVER RESECTIONS: A RETROSPECTIVE PHASE 1 ANALYSIS

Lorenzo Bernardi[1], Emanuele Balzano[2], Raffaello Roesel[1], Giacomo Menconi[2], Davide Ghinolfi[2], Francesco Mongelli[1], Filippo Vagelli[2], Annamaria Senatore[1], Pietro Majno-Hurst[1], Paolo De Simone[2], Alessandra Cristaudi[1]

Hepatobiliary Surgery Unit, Lugano Regional Hospital, Ente Ospedaliero Cantonale (EOC), Lugano, Switzerland[1] - Hepatobiliary surgery and liver transplant unit, Azienda Ospedaliera Universitaria Pisana (AOUP), University of Pisa, Pisa, Italy[2]

Background and Purpose: In the setting of minimally invasive liver surgery (MILS), training in robotic liver resections (RLR) usually follows previous experience in laparoscopic liver resections (LLR). The aim of our study was to assess the learning curve (LC) of RLR of a surgeon who started RLR and LLR training concomitantly.

Material and Methods: We retrospectively analyzed consecutive RLRs and LLRs by a surgeon trained simultaneously in both techniques (Surg1); procedures by a second surgeon who only performed LLRs were used as control (Surg2). Data were analyzed focusing on operative time, difficulty of the procedures (IWATE score), intra- and postoperative complications. A regression model was used to adjust for confounders and a Cumulative Sum (CUSUM) analysis was carried out to assess the learning phases.

Results: Two-hundred-forty-five procedures were identified (RobSurg1, n=75, LapSurg1, n=102, LapSurg2, n=68). Mean IWATE was 4.0, 4.3 and 5.8 ($p<0.001$) in each group respectively. According to the CUSUM analysis of the adjusted operative times the learning phase was estimated in 40 cases (RobSurg1), 40 cases (LapSurg1), 48 cases (LapSurg2); for IWATE score was 38 cases (RobSurg1), 33 cases (LapSurg1), 38 cases (LapSurg2) respectively. Conversions to open surgery (6.7%, 10.8%, 5.9% in each group respectively; $p=0.442$) were uniformly distributed over the time. Postoperative morbidity plateaued after 42 cases for RLRs; such analysis for LLRs wasn't reliable as most of the complications occurred in the late phase where both surgeons performed the most demanding cases.

Conclusion(s): Our preliminary experience showed a similar LC of 40 cases for low and intermediate difficulty RLR and LLR. Concomitant training in both techniques was safe and may be a practical option for starting a MILS program.

Keyword(s): Minimally invasive, liver surgery, robotic, laparoscopic, learning curve

LAPAROSCOPIC RIGHT HEMIHEPATECTOMY AFTER FUTURE LIVER REMNANT MODULATION VERSUS EX NOVO: A SINGLE SURGEON'S EXPERIENCE

Tijs Hoogteijling[1], Jasper Sijberden(1), John Primrose[2], Victoria Morrison-Jones[2], Sachin Modi[3], Giuseppe Zimmitti[1], Marco Garatti[1], Claudio Sallemi[4], Mario Morone[4], Mohammad Abu Hilal[1]

Fondazione Poliambulanza Instituto Ospedaliero, Department of Surgery, Brescia, Italy[1] - University Hospital Southampton NHS Foundation Trust, Department of Surgery, Southampton, United Kingdom[2] - University Hospital Southampton NHS Foundation Trust, Department of Interventional Radiology, Southampton, United Kingdom[3] - Fondazione Poliambulanza Instituto Ospedaliero, Department of Interventional Radiology, Brescia, Italy[4]

Background and Purpose: Laparoscopic right hemihepatectomy (L-RHH) is still considered a technically complex procedure, which should only be performed by experienced surgeons in specialized centers. Future liver remnant modulation (FLRM) strategies including portal vein embolization (PVE) and associating liver partition and portal vein ligation for staged hepatectomy (ALPPS) might increase the surgical difficulty of L-RHH due to the distortion of hepatic anatomy, periportal inflammation, and fibrosis. Therefore, this study aims to evaluate the safety and feasibility of L-RHH after FLRM, when compared with ex novo L-RHH.

Material and Methods: All consecutive L-RHHs performed by a single surgeon between October 2009 and September 2022 were retrospectively analyzed. The patient characteristics and perioperative outcomes of L-RHH after FLRM and ex novo were compared.

Results: A total of 58 patients were included in the analysis, of whom 31 underwent FLRM. Patients undergoing FLRM prior to L-RHH more often were male (93.5% vs. 44.4%, P < 0.001), had an ASA-score > 2 (48.4% vs. 9.1%, P = 0.003), and underwent a two-stage hepatectomy (45.2% vs. 7.4% P = 0.001). L-RHH after FLRM was associated with longer operative time (Median 360 versus 300 minutes, P=0.004) and Pringle duration (30.5 versus 24 minutes, P=0.015). Intraoperative blood loss, unfavorable intraoperative incidents, and conversion rates were similar in both groups. There were no significant differences in length of hospital stay and 30-day overall and severe morbidity rates. Radical resection margin (R0) and textbook outcome rates were equal. One patient who underwent an extended RHH in the FLRM group deceased within 90 days after surgery, due to post-hepatectomy liver failure.

Conclusion(s): L-RHH after FLRM is more technically complex than L-RHH ex novo, objectified by longer operative time and Pringle duration. Nevertheless, this procedure appears safe and feasible in experienced hands.

Keyword(s): liver neoplasms, right hemi hepatectomy, laparoscopic liver resection, future liver remnant modulation, treatment outcome

EARLY VERSUS DELAYED LAPAROSCOPIC CHOLECYSTECTOMY IN ACUTE CHOLECYSTITIS- ITS RELEVANCE AND SIGNIFICANCE

Mahim Koshariya[1], Utkarsh Bhandari[2], Yogshri Chaubey[1], Ashish Tiwari[1], Amey Jain[1], Prasoon Singh[1], Vijay Tekam[1], Arshad Khan[1]

Gandhi Medical College, Department of General surgery, Gandhi medical college and Hamidia Hospital Bhopal, India 462001, Bhopal, India[1] - Gandhi medical college, Department of General surgery, Gandhi medical college and Hamidia Hospital Bhopal, India 462001, Bhopal, India[2]

Background and Purpose: Cholecystitis is an inflammation of gall bladder. The current standard of treatment for acute cholecystitis is laproscopic cholecystectomy(LC).Two approaches are available for the treatment of acute cholecystitis; the first approach is early (within 7 days of onset of symptoms) laparoscopic cholecystectomy, the second approach is conservative management and then delayed cholecystectomy after an interval of 6–12 weeks.

Material and Methods: A prospective randomized study was undertaken on the patients presenting to the OPD/ Emergency department with Acute Cholecystitis. Randomization was done based on the patient's choice. In the early group, laparoscopic cholecystectomy was performed within 96 hours of acute symptoms, whereas in the delayed group conservative management with intravenous fluids and antibiotics was done and LC was done 6 weeks later.

Results: A total of 162 patients (80 early and 82 delayed) with a median age of 49 years were studied over 36 months. The mean operating time was 60 min in both groups, conversion to Open Cholecystectomy rate was 10% in early group and 6.25% in delayed group, the overall complication rate was 25% in early group and 13.41% in the delayed group.The mean total HS was 4.5 (3–6 days) in the early and 7.45 (3–13 days). The difference in total HS was statistically significant.

Conclusion(s): Both early and delayed LC are feasible and safe in acute cholecystitis; however, delayed LC is associated with lower conversion rate as compared to early LC; early cholecystectomy offers definitive treatment at the initial admission and avoids the problem of failed conservative management and recurrent symptoms which required emergency surgery. Early LC is associated with a shorter total hospital stay as compared to delayed LC, which is a major economic benefit to the health care system.

Keyword(s): Acute Cholecystitis, Laparoscopic Cholecystectomy, Early and delayed laproscopic cholecystectomy

THE FIRST CASES OF LAPAROSCOPIC COLECTOMY FOR CANCER IN ZIGUINCHOR, SENEGAL

Omar Sow[1], Reymond Saidy[2], Mouhamadou L Gueye[3], Ibrahima Ka[4], Madieng Dieng[5]

Peace Hospital, Assane Seck University, Ziguinchor., Ziguinchor, Senegal[1] - Peace Hospital, Assane Seck University, Ziguinchor., Ziguinchor, Sınıgal[2] - Military Hospital Ouakam, Cheikh Anta Diop University, Dakar, Sınıgal[3] - Idrissa Pouye General Hospital, Cheikh Anta Diop University, Dakar, Sınıgal[4] - Faculty of Medecine, Cheikh Anta Diop University, Dakar, Sınıgal[5]

Background and Purpose: Background and purpose: laparoscopic colectomy is a standardized technique for the curative treatment of colon cancer, based on the principles of carcinological surgery. It is rarely performed in our region but common practice in developed countries

Material and Methods: we conducted a retrospective study of the first 4 cases of laparoscopic colectomy for cancer.

Results: the patients were 3 men and 1 woman, with mean age of 54.2 years. Of the 4 cancers, 3 were localized to the sigmoid and one to the cecum. The main symptom was rectal bleeding. Total colonoscopy with biopsy was performed in 3 patients and the histological type was a lieberkühnian, infiltrative, moderately differentiated adenocarcinoma. Thoraco-abdomino-pelvic computed tomography (TAP CT) was performed in all the cases. Three patients were presented to the multidisciplinary team (MDT) prior to surgery. The operations were one right hemicolectomy and three left hemicolectomies. Mean operative time was 182.25 min [152-210]. Average blood loss was estimated at 200 cc. Average hospital stay was 4.71 days. Cancer staging was classified as stage I in 1 case (p T1N0M0) and stage III in 3 cases (pT3N1Mx, pT3N2Mx). Resection margins were healthy. The number of lymph nodes removed was 12, 14, 17 and 13 respectively.

Conclusion(s): this is a safe and reproducible technique, but requires a much higher cost than laparotomy.

Keyword(s): colectomy, cancer, laparoscopy, Ziguinchor.

LAPOSCOPIC GASTRECTOMY FOR GASTRIC CANCER IN LOW INCOME COUNTRY, SENEGAL

Reymond Saidy[1], Omar Saidy[1], Mohamadou Lamine Gueye[2], Dieng Madieng[3]

Peace hospital, Assane Seck University of Ziguinchor, Ziguinchor, Senegal[1] - HMO, Cheikh Anta University, Dakar, Dakar, Senegal[2] - Faculty of medicine, Cheikh Anta University, Dakar, Dakar, Senegal[3]

Background and Purpose: Minimally invasive surgery is increasing in the treatment of Gastric cancer. While laparoscopic gastrectomy has become standard therapy for early-stage gastric cancer in developed countries. This technique has not gained its popularity yet in our context due to limited resources in both human and material. As a result, we aim to report the results of the management of laparoscopic gastrectomy for gastric cancer patients in a rural setting.

Material and Methods: A descriptive and retrospective study from January 2022 to April 2023 was conducted in five patients. We included laparoscopic gastrectomy patients who presented with Antro-pyloric tumor.

Results: The patients were four women and one man, aged 50, 65, 30, 72 and 23 years, respectively. Epigastric pain was predominant in all cases. The diagnosis was based on OGDF + biopsy and CT scan. Three patients were transfused in pre op while one intraoperative. All the patients were admitted a day prior to surgery and went through elective laparoscopic gastrectomy. The surgery duration was 240 min, 300 min, 180 min, 210 min and 240 min respectively (mean duration 234min). The blood loss was estimated at 50cc, 300cc, 30cc, 400cc and 100cc respectively, mean blood lost 176 cc. One patient benefited from abstention while one had conversion. Digestive continuity was by trans-mesocolic GEA iso peristaltic by endo GIA 40. Lymph node resection was D1.5 type. The postoperative hospital stay was 04, 06, 03, 08 and 05 days, (mean duration 5.2 days). Pathological specimen reported gastric ADC in 4 cases with TMN stage T3N1M0, T4N2M0, T1N0M0, T2N1M0. Morbidity and Mortality was nil.

Conclusion(s): Laparoscopic gastrectomy can offer various advantages like early post op recovery, short hospital stay, less morbidity, early return to normal activities and should be encouraged in our settings.

Keyword(s): Gastric cancers, gastrectomy, laparoscopy, Ziguinchor

LIVER TRANSPLANT (ONCOLOGICAL AND NON-ONCOLOGICAL INDICATIONS)

IMPACT OF LAPAROSCOPIC LIVER RESECTION AND/OR THERMAL ABLATION FOR ACCESS TO THE WAITING LIST OF A SINGLE REGIONAL CENTER FOR LIVER TRANSPLANTATION IN SOUTHERN ITALY

Duilio Pagano, Fabrizio di Francesco, Sergio Li Petri, Pasquale Bonsignore, Sergio Calamia, Alessandro Tropea, Caterina Accardo, Ivan Vella, Roberta Vella, Noemi Di Lorenzo, Giorgia Calandrino, Salvatore Gruttadauria

ISMETT-UPMC Italy, Department for the Treatment and Study of Abdominal Diseases and Abdominal Transplantation., Palermo, Italy

Background and Purpose: Hepatocellular carcinoma (HCC) is the most common primary liver cancer, and both liver resection (LR) and liver transplantation (LT) are considered potentially curative options. We aimed to explore the impacting role of minimally invasive approach on entry and drop-out flows waiting list of a single regional center for LT in southern Italy with a very low deceased donation rate.

Material and Methods: We retrospectively analyzed our experience performed during a 7-year period between January 2016 and February 2023 in patients treated for end-stage-liver-disease (ESLD) and/or with surgically unresectable early and intermediate stage HCC. Linear correlation was used to evaluate dependence between the number of laparoscopic LR (LLR) treatments for HCC on the following flows of enrollments on the waiting list during the study period:-Enrollments present at the beginning of the year.-Enrollments that took place during the year, the Intention-To-Treat (ITT, present at the beginning of the year+admissions during the year).-Registrations present at the end of the year, and waiting for transplants for transplanted patients.

Results: There were 282 HCC patients treated with a first-line approach of LLR (n = 116) or open LRs (n = 166), with an incremental number of LLR per months. Considering the number of LLR and the rate of drop-out of ITT population and the number of enrolled patients per year, we observed a strong inverse linear correlation (rho=-0.82,p=0.023).

Conclusion(s): Minimally invasive surgical therapies for HCC has a specific impact on drop-out percentage of overall ITT population, and waiting time for transplants for transplanted HCC patients.

Keyword(s): Hepatocellular carcinoma; liver resection; laparoscopy; liver transplantation, drop-out

ORGAN TRANSPLANTATION IN BOSNIA AND HERZEGOVINA

Zijah Rifatbegović, Senaid Trnačević

Department of Abdominal Surgery, Clinic for Surgery, University Clinical Centre Tuzla, SERC, Tuzla, Bosnia and Herzegowina

Background and Purpose: B&H is territorially divided into the Federation of B&H, the Republic of Srpska, and the Brčko District (Figure 2). The complex structure and organization of B&H is an essential problem in effectively establishing all aspects relevant for organ transplantation.

Material and Methods: Unfortunately, there remains a lack of education on the need for organ donation. Consent rates remain disappointingly low with only 2 consents out of 10 brain-dead donors in 2019 and 2020.

Results: From 1974 until August 2021, 523 kidney transplants have been completed in B&H total number of kidney transplants performed since 1997. Graft survival has been 94%, 82%, and 60% by 1, 5, and 10 y, respectively.Until January 2021, a total of 20 liver transplants, including 3 retransplantations, have been accomplished at the University Clinical Center Tuzla.The average survival of patients is 9.8 y. Survival of patients on the waiting list after 1 y is 40% compared with 75% for transplanted patients. Bone marrow transplantation started at the University Clinical Center Tuzla in 2004, and 150 transplantations have been performed until August 31, 2021 (23 allogeneic, 127 autologous bone marrow transplant).Cornea transplants started in 2007, and 66 have been performed. Graft survival after 1, 5, and 10 y has been 100%, 75%, and 50%, respectively.

Conclusion(s): Although small in size, B&H has had an active history of kidney, liver, cornea, heart, and bone marrow transplantations.

B&H has enthusiastic and experienced transplant providers; however, the availability of organs from deceased donors remains scarce. Infrastructure is not on satisfactory level, with shortcomings in the organization of transplantation

Keyword(s): Organ transplantation, liver, kidney, bone marrow, cornea

LOWER GI AND COLORECTAL (SURGERY, ONCOLOGY AND ENDOSCOPIC INTERVENTION)

NEOADJUVANT S-1 AND OXALIPLATIN PLUS BEVACIZUMAB THERAPY FOR HIGH-RISK LOCALLY ADVANCED RECTAL CANCER: A PROSPECTIVE MULTICENTER PHASE II STUDY

Takuya Miura[1], Hajime Morohashi[1], Yoshiyuki Sakamoto[1], Takuji Kagiya[1], Tatsuya Hasebe[2], Yoshihito Nakayama[3], Hiromasa Fujita[4], Kenichi Hakamada[1]

Hirosaki University Hosipital, Department of gastroenterological surgery, Hirosaki, Japan[1] - Odate Municipal General Hospital, Department of Surgery, Odate, Japan[2] - Hachinohe City Hospital, Department of Surgery, Hachinohe, Japan[3] - Hirosaki University Hosipital, Department of radiology, Hirosaki, Japan[4]

Background and Purpose: We report the short/mid-term results of surgery for high-risk locally advanced rectal cancer (LARC) after neoadjuvant chemotherapy (NAC, four courses of S-1+oxaliplatin+ bevacizumab) without radiotherapy with the primary aim of ypT0-2.

Material and Methods: High-risk LARC was defined as cT4b, mesorectal fascia (MRF) ≤ 1 mm (MRF+), or lateral lymph node metastasis (cLLN+) on high-resolution MRI. The planned 32 cases from April 2018 to December 2021 were all included.

Results: There were 10 patients at cT4b (31.2%), 26 MRF+ (81.3%), and 22 cLLN+ (68.8%). Thirteen (40.6%) underwent NAC after a colostomy for stenosis. NAC was completed in 26 (81.2%). Grade 3 or higher adverse events occurred in six (18.7%). One patient developed progressive disease (3.2%). Eleven were ycT0-3MRF-LLN- (34.3%). Curative-intent surgery was performed on 31, with sphincter-preserving surgery in 20, abdominoperineal resection in nine, total pelvic exenteration in two, and lateral lymph node dissection in 24. Two had R1/2 resection (6.4%). A Grade 3 or higher postoperative complication rate occurred in 3.2%. Pathological complete response and ypT0-2 rates were 12.9% and 45.1%. Three-year disease-free survival rates (3yDFS) for ypT0-2 and ypT ≥ 3 were 81.2%, 46.6% (p = 0.061), and 3-year local recurrence rates (3yLR) were 0%, 48.8% (p = 0.015). 3yDFS for ycT0-3MRF-LLN- and ycT4/MRF+/LLN+ were 87.5%, 48.0% (p = 0.031) and 3yLR were 0%, 42.8% (p = 0.045).

Conclusion(s): NAC yielded a clinically significant effect in about half of high-risk LARC patients. If NAC alone is ineffective, radiotherapy should be added, even if extended surgery is intended.

Keyword(s): locally advanced rectal cancer, neoadjuvant chemotherapy, S-1, oxaliplatin, bevacizumab

THE ANATOMICAL BASIS FOR AUTONOMIC DYSFUNCTION IN COLORECTAL SURGERY

Elroy Weledji

Departments of Anatomy and Surgery, Faculty of health Sciences, University of Buea, Buea, Cameroon

Background and Purpose: In rectal cancer surgery quality of life issues include preservation of continence, preservation of reasonable bowel frequency and avoidance as far as possible, of permanent sexual and urinary disturbance. Operative neural damage after pelvic and perineal surgery may affect bladder or sexual function. The anatomical and physiological basis of autonomic dysfunction in surgical coloproctology is ascertained.

Material and Methods: Electronic searches of the Medline (PubMed) database, Cochrane library and Science citation index were performed to identify original published studies on urogenital dysfunction after pelvic and perineal surgery. Relevant chapters in specialized texts on the anatomical and physiological basis of autonomic dysfunction and surgical implications were searched and all included.

Results: Sexual dysfunction is a common postoperative complication following pelvic surgery. Urinary dysfunction commonly follows perineal surgery. Radiotherapy affects sexual function more than urinary function. Pelvic autonomic nerves are especially at risk in cases of low rectal cancer, anterior encroaching tumours and during abdominoperineal excision. Total mesorectal excision (TME) for rectal cancer improves autonomic nerve preservation. Impotence is rare after rectal excision for inflammatory bowel disease but retrograde ejaculation has been recorded. Pelvic nerve injury would be best avoided by identification and preservation of autonomic nerves early in operation using 'intraoperative nerve stimulation'.

Conclusion(s): Urogenital dysfunction is a common problem in colorectal surgery. Structured education of surgeons with regard to pelvic neuroanatomy and systemic registration of identified nerves intraoperatively may improve functional outcome. The refinement of surgery for both benign and malignant pelvic and perineal diseases with regard to the better understanding of the anatomy and physiology of urinary and sexual function would decrease the incidence of urogenital dysfunction.

Keyword(s): rectal cancer, surgery, dysfunction, urinary, sexual

POSSIBILITY TO TREAD LOCALLY ADVANCED COLORECTAL CANCER (LACC) USING SURGERY PLUS PIPAC

Nikolay Belev

Department of Propedevtic of Surgical Desease, Faculty of Medicine, Medical University-Plovdiv, Plovdiv, Bulgaria)

Background and Purpose: Despite efforts to conduct screening, 60% of patients are diagnosed at an advanced stage with a significantly poorer prognosis compared to early-stage disease,Nearly a 25% of patients with locally advanced (T4 stage) or perforated colon cancer are at risk of developing peritoneal metastases with poor prognosis. Local relapse and peritoneal carcinomatosis (PC) for pT4 colon cancer is estimated in 15,6% and 36,7% for 12 months and 36 months from surgical resection respectively, achieving a 5 years overall survival of 6%. There are promising results using prophylactic HIPEC in this group of patients, and it is estimated that up to 26% of all T4 colon cancer could benefit from this treatment with a minimal morbidity. We aimed to determine the safety and efficacy of radical surgery plus pressurized intraabdominal chemotherapy (PIPAC) in patients with locally advanced colon cancer(LACC), compare to surgery plus systemic adjuvant chemotherapy.

Material and Methods: Patients with LACC(T4), obturated, perforated cancers and patients with positive cytology are eligible. After radical surgical treatment (laparoscopically, open) We perform PIPAC with Oxaliplatin, followed by adjuvant chemotherapy. Since 01.01.2023 8 patients underwent radical surgical treatment plus PIPAC for LACC.

Results: Morbidity rate is zero. Secondary points are relapse of disease and 1- and 3-years survival rate.

Conclusion(s): PIPAC shows superior pharmacological properties with high local concentration and low systemic exposure. Radical surgery combine by PIPAC could reduce incidence of peritoneal metastases followed by better long-term results.

Keyword(s): Locally advanced colorectal cancer, PIPAC, Laparoscopic colorectal surgery

INTESTINAL INTUSSUSCEPTION IN ADULTS

Vasil Bozhkov[1], Plamen Chernopolsky[1], Dilyan Chaushev[2], Rossen Madjov[3]

Medical University, Associate Professor, Varna, Bulgaria[1] - Medical University, Assistant Professor, Varna, Bulgaria[2] - Medical University, Professor, Varna, Bulgaria[3]

Background and Purpose: The intestinal Intussusception (I.I.) in adults is a rare disease, and is very different in etiology from the same disease in children. I.I. in elderly represents around 5% from all cases of intussusceptions, and is responsible for about 1% of all patients with intestinal obstruction.

Material and Methods: All of the 32 patients (17 males and 15 females) are at an age between 28 and 79 (an average age of 54.5). Most of them were with clinical manifestation of intestinal obstruction - chronic, intermittent and/or acute. Abdominal pain was the most common symptom. The exact preoperative diagnosis was identified only in 19 patients (59,3,5%). 14 of the patients were with symptoms of small bowel intussusception and 18 - with symptoms of large bowel intussusception. CT /contrast-enhanced/ is the most informative diagnostic tool. In above 90% of the cases with I.I. in elderly was found a pathologic lesion for the intussusception - big polypus, adenocarcinoma, secondary metastatic lesion.

Results: Surgical intervention was performed in all of the patients. Resection and primary anastomosis was done in all of the patients with small bowel intussusception, and in one patient - desintussusception. Concerning the patients with large-bowel intussusception: in 12 patients was done resection with primary anastomosis, and in 6 patients - resection with colostomy. Post-operative complications were found in 7 patients; early postoperative mortality in one patient.

Conclusion(s): I.I. in adults is presented with wide clinical variety - acute, intermittent and/or chronic symptoms and very often the diagnostics are very tough. The surgical intervention - radical resection of the affected segment is preferred, and it is the only radical method, because in most of the cases the reason for the intussusception was a malignant lesion

Keyword(s): intestinal intussusception, resection, primary anastomosis, colostomy

CAN TUMOR BUDDING BE AN IMPORTANT MARKER IN PREDICTING LYMPH NODE METASTASIS REGARDLESS OF TUMOR SIZE?

Alisina Bulut[1], Muhammed İkbal Akın[1], Niyaz Shadmanov[2], Suha Goksel[3], Oktar Asoglu[2]

Marmara University, General Surgery, İstanbul, Turkey[1] - Bogazici Academy for Clinical Sciences, General Surgery, İstanbul, Turkey[2] - Maslak Acibadem Hospital, Department of Pathology, İstanbul, Turkey[3]

Background and Purpose: The main factor on the prognosis of colon cancers is TNM stage. However lymphatic, venous and perineural invasion, tumor grade and tumor budding(tm bd) are proposed as additional prognostic factors. Tm bd is thought to contribute to the prediction of lymph node metastasis. We aimed to reveal the relationship between the prognostic factors defined in colon cancer (especially lymph node status) and tm bd.

Material and Methods: The data of 189 patients who were operated for colon cancer in a tertiary center between the years 2017-2022 were analyzed retrospectively. Tm bd evaluation was made based on the criteria of the international tm bd consensus conference held in 2016. The presence of single cells or small clusters of less than five cells at the advancing front of the tumor is considered as peritumoral tm bd and it is classified as Bd1, Bd2 and Bd3. The relationship between tm bd and other prognostic factors such as age, tumor size, lymph node status and lymphatic-perineural-venous invasion was evaluated. SPSS version 22 program was used for statistical analysis.

Results: There was no data on tm bd in 35 patients, and it could not be evaluated due to neoadjuvant in 17 patients. Tm bd data of the remaining 137(72.4 %) patients were evaluated. The relationship between tm bd and other prognostic parameters is evaluated; a statistically significant correlation was found between the degree of tm bd and the number of positive lymph nodes(bd0vsbd2;p=0.06 and bd0vsbd3;p=0.01. In addition, there was a significant relationship between tm bd and lymphatic invasion and venous invasion(Table-1).

Conclusion(s): Tm bd may be evaluated as a prognostic factor such as lymphatic invasion and venous invasion. In addition, tm bd may be an important marker in predicting lymph node metastasis regardless of tumor size.

Keyword(s): Tumor budding, Prognostic factors, Colon cancer

COMPARISON OF SURGICAL SITE INFECTION BY LOW VS LARGE VOLUME BOWEL PREPARATION IN COLORECTAL CANCER SURGERY: MULTICENTER PROSPECTIVE RANDOMIZED CONTROL TRIAL

Sung-Min Lee[(1)], Jun Seok Park[(2)], Soo yeun Park[(3)], Hye Jin Kim[(3)], Min Hye Jung[(4)], Su Jin Kang[(4)], Gyu Seok Choi[(2)]

Kyungpook National University, Clinical professor, Daegu, Republic of Korea[(1)] - Kyungpook National University, Professor, Daegu, Republic of Korea[(2)] - Kyungpook National University, Associate professor, Daegu, Republic Of Korea[(3)] - Kyungpook National University, Clinical fellow, Daegu, Republic of Korea[(4)]

Background and Purpose: We tried to identify clinical efficacy and patients satisfaction of low volume bowel preparation, pico sulfate (PICO) to large volume bowel preparation, Polyethylene glycol (PEG) in the setting of randomized trial

Material and Methods: From July 2019, patient who were diagnosed as colorectal adenocarcinoma enrolled from 4 tertiary university hospital. Primary outcome was surgical site infection (SSI). We assumed non-inferiority margin of PICO as 10%. Completeness of bowel preparation was measured by surgeons at the operation theatre using scoring from 0 to 10. Patient's tolerance was measured by self-administered questionnaire, which consisted of 6 questions; abdominal distension, pain, nausea, vomiting, discomfort, willingness to use same agent again

Results: Until Dec 2022, 203 patients (103 in PICO group, 100 in PEG group) were included in this analysis. The rate of SSI was not different between 2 groups (7.9% in PICO, 8.0% in PEG , P=0,627). Organ space SSI was 3 in PICO group and 5 in PEG group. 5 cases were related with anastomosis leakage. Surgeon's satisfaction of bowel preparation was 8 (interquartile range : 8-9) in PICO group and 8 (interquartile range : 7-9) in PEG group (P=0.246). PICO groups showed better tolerance than PEG group in the questionnaire of nausea (10% vs 27%; P=0.004), vomiting (2% vs 10%; p=0.033), abdominal discomfort (15% vs 30%; p=0.048), and willingness to use again (82% vs 48%; P=0.001).

Conclusion(s): According to the present study , low volume bowel preparation was not inferior to large volume bowel preparation in terms of SSI. Low volume bowel preparation might be satisfactory alternative to large volume which is currently widely used in colorectal cancer surgery.

Keyword(s): Colorectal surgery, bowel preparation

LESSONS FROM MAGNETIC RESONANCE DEFECOGRAPHY OF PATIENTS WITH OBSTRUCTED DEFECATION SYNDROME

Rui Ferreira-Santos[1], Rafaela Brás Gonçalves[1], Eduarda Gonçalves[1], António Girão de Caires[2], Joaquim Costa Pereira[3]

Hospital de Braga, Resident doctor, Braga, Portugal[1] - Hospital Dr. Nélio Mendonça, Resident doctor, Funchal, Portugal[2] - Hospital de Braga, Chief of surgery, Braga, Portugal[3]

Background and Purpose: Obstructed defecation syndrome (ODS) is a manifestation of female pelvic organ prolapse and is associated with pelvic floor anatomical and functional abnormalities. The aim of this study is to evaluate magnetic resonance defecography (MRD) alterations in female patients with ODS.

Material and Methods: We conducted a retrospective analysis of female patients with ODS between March 2018 and December 2022 at a tertiary hospital. MRD findings included pelvic floor descent, cystocele, rectocele, central compartment prolapse and enterocele. The presence of pelvic organ prolapses was evaluated at maximal strain during defecation and defined by imagological criteria. Tricompartimental prolapse was defined as simultaneous prolapse of the anterior, central, and posterior compartments.

Results: Forty-one female patients were included, with a mean age of 63.2 ± 10.8 years old. Descent of the muscular pelvic floor was the most common anatomic abnormality seen in 40 (97.6%) patients. Anterior rectocele was present in 38 (92.7%) patients, being the second most common abnormality identified. Cystocele was present in 37 (90.2%) patients and middle compartment prolapse was present in 30 (73.2%) patients. Enterocele was diagnosed in 23 (56.1%) patients. Thirty-eight patients (92.7%) presented with prolapse of at least two pelvic compartments simultaneously. Twenty–seven (65.9%) had a tricompartimental prolapse. Only 2 (4.9%) patients presented with an isolated posterior compartment prolapse.

Conclusion(s): The great majority of patients with ODS do not have a single pelvic compartment prolapse or a single anatomical defect. Defecography is essential to demonstrate pelvic floor and anorectal abnormalities underpinning ODS and is crucial to surgical planning, as most patients will need to correct simultaneous defects.

Keyword(s): Obstructed defecation syndrome, Pelvic Organ Prolapse, Rectocele, Central compartment prolapse, Cystocele, Enterocele, Tricompartimental prolapse, Pelvic floor descent

ANTERIOR RECTAL RESECTION, LAPAROSCOPIC TME WITH TEMPORARY ILEOSTOMY FOR RADIOCHEMOTREATED LOW RECTAL CANCER. SURGICAL EXPERTISE, ONCOLOGICAL AND SURGICAL TIMING AMONG THE MAIN PROGNOSTIC FACTORS

Agostino Lorenzo Fracasso, Riccardo Maglio, Piercosimo Nisi, Fatima Sayad, Piero Mingolla, Mariasole Fracasso

Doctor, Surgeon, Veris Delli Ponti Hospital, Scorrano, Italy

Background and Purpose: Anterior rectal resection with ultralow colo-rectal anastomosis, laparoscopic TME with temporary ileostomy for radiochemotreated low rectal cancer. Surgical expertise, oncological and surgical timing among the main prognostic factors.

Material and Methods: We present the clinical case of a patient with a low rectal cancer (cT3N0M0 to MRI) radiochemiotreated after a multidisciplinary meeting. After neoadjuvant therapy, patient underwent anterior rectal resection (RAR), ultralow colo-rectal anastomosis, laparoscopic Total Mesorectal Excision (TME) and ileostomy. We carried out a staging laparoscopy, isolation of the splenic flexure, central ligation of the lower mesenteric vessels, lymphectomy with preservation of the superior and inferior hypogastric plexus and of the ureters, TME, rectal resection, ultralow colo-rectal anastomosis and ileostomy.

Results: Laparoscopic RAR with TME for cT3N0M0 rectal cancer with R0 resection improves patient's prognosis with a good quality of life. Histological examination gave free margins.

Conclusion(s): For rectal cancer among the main prognostic factors we should remember: Surgical Expertise, TME technique, high tie of the mesenteric inferior vessels; neoadjuvant therapy and a multidisciplinary team discussion. It could be done a high or low ligation of the inferior mesenteric artery (IMA). As we know, high ligation can improve lymph nodes yield rate permitting more accurate tumor staging, better disease prognosis and allows a tension-free anastomosis.

Low ligation enables adequate blood supply to the colon proximal to the anastomosis. High ligation is necessary for oncological reasons or is technically useful for the anastomosis? Low ligation is oncologically comparable to high ligation? As reported in literature, further studies are needed.

Keyword(s): Rectal cancer, TME

ABDOMINAL DRAIN, PROLONGED ANTIBIOTIC PROPHYLAXIS, AND CME WITH D3 LYMPHADENECTOMY DO NOT INFLUENCE POSTOPERATIVE ILEUS AFTER LAPAROSCOPIC RIGHT HEMICOLECTOMY WITH INTRACORPOREAL ANASTOMOSIS

Leandro Siragusa, Brunella Pirozzi, Roberto Sorge, Giorgia Baldini, Marzia Franceschilli, Vittoria Bellato, Andrea Martina Guida, Giuseppe S. Sica

University of Rome "Tor Vergata", Department of Surgical Sciences, Rome, Italy

Background and Purpose: Extensive lymph-nodes dissection and intra-abdominal anastomosis during right colectomy with CME are called responsible for prolonging postoperative ileus. Routinary use of abdominal drain or prolonged antibiotic prophylaxis have been proposed to prevent risks of contamination following intracorporeal anastomosis. The aim of our study was to evaluate the efficacy of routinary use of abdominal drain or antibiotic-therapy on post-operative ileus in both patients undergoing standard right colectomy with D2 lymph nodes dissection and those receiving a CME-D3 hemicolectomy.

Material and Methods: This is a monocentric randomized pilot study including all consecutive patients undergoing laparoscopic right hemicolectomy for cancer with intracorporeal anastomosis fashioning over a period of 18 months. Patients were randomized to receive abdominal drain, antibiotic-therapy, or none. Results were stratified depending on the kind of surgery performed: standard D2 dissection or CME-D3. Primary aim was postoperative ileus. Secondary aims were postoperative length of stay and complications.

Results: Thirty-six patients were randomized, 12 for each arm according to postoperative management. There was no difference in length of stay, and general and specific complications. There were no differences in time to first bowel movement, bowel open to gas and stool, time to liquid and solid diet, laboratory tests, readmission, reoperation rate, and mortality rate.

Conclusion(s): Postoperative avoidance of abdominal drain and the systematic use of antibiotic-therapy is safe and feasible in patient undergoing laparoscopic right colectomy with intracorporeal anastomosis. Further prospective studies with larger samples are required to validate these results and determine the non-inferiority of antibiotic-therapy and abdominal drain avoidance in these patients' subset.

Keyword(s): Colon cancer, Right colectomy, Intracorporeal anastomosis, Complete mesocolon excision

LOW TIE OF IMA COMBINED WITH CENTRAL LYMPHADENECTOMY FOR RADICAL SURGICAL TREATMENT OF LOW RECTAL CANCER. OUR EXPERIENCE

Vasile Bintintan

University of Medicine and Pharmacy, 1st Clinic of Surgery, Associate Professor Honorary, Consultant in General Surgery, Cluj Napoca, Romania

Background and Purpose: In a low tie of the inferior mesenteric artery (IMA) the origin of left colic artery is preserved and the colonic stump is perfused through both the lateral and medial vascular arcades, of Drummond and Mikulicz respectively. Combined with central lymph node dissection this technique provides adequate oncological clearance while preserving unaltered the blood supply in the long colonic stump. However, it is technically demanding especially in a laparoscopic setting.

Material and Methods: Surgery starts with lymphadenectomy at the origin and trunk of IMA, progresses caudally to the origin of left colic, sigmoidian and upper rectal arteries, the latter two being divided. Lymphadenectomy continues cranially along the arcade of Mikulicz and inferior mesenteric vein to the inferior margin of the pancreas. Before creation of the colorectal anastomosis, if the trunk of IMA limits advancement of the colonic stump in the pelvis, it is divided with preservation of patency between the arcade of Mikulicz and the left colic/proximal sigmoidian arteries. The laparoscopic technique is demonstrated in a video.

Results: The last 50 patients operated open and laparoscopic with this technique are retrospectively reviewed. 85% received neoadjuvant radiochemotherapy. In all cases the dual blood supply to the colonic stump was preserved, the colon wall was well perfused at division with scissors and the colon reached the pelvic floor without tension. There was no case of postoperative necrosis of the colonic stump. Anastomotic fistula occurred in 12% of these patients, involved less than 20% of the circumference and was treated successfully in all cases using transanal endosponge vaccum therapy. The median lymph node count was 13.

Conclusion(s): This technique avoided the cases of ischemia and necrosis of the colonic stump leading to large anastomotic defects encountered historically and thus allowed us to efficiently manage the fistula by a simpler transanal approach.

SESSION: ORAL (VIDEO) PRESENTATION

LOWER GI AND COLORECTAL (SURGERY, ONCOLOGY AND ENDOSCOPIC INTERVENTION)

LAPAROSCOPIC RESECTION OF THE SPLENIC FLEXURE WITH EN-BLOC SPLENECTOMY AND DISTAL PANCREATECTOMY FOR LOCALLY ADVANCED COLON CANCER

Alessandro Valdegamberi, Giulia Turri, Gabriele Gecchele, Sabrina Zambelli, Jessica Cassiani, Jacopo Graziosi, Ernesto De Giulio, Noemi Bicelli, Angelo Di Vittori, Vittoria Butera, Giacomo Faccioli, Corrado Pedrazzani

Division of General and Hepatobiliary Surgery, Department of Surgical Sciences, Dentistry, Gynecology and Pediatrics, University of Verona, Verona, Italy

Background and Purpose: Treatment of locally advanced colon cancer located at the splenic flexure presenting with acute colonic obstruction represents a clinical challenge in balancing oncological radicality and management of the acute presentation.

Material and Methods: We hereby describe the case of a 64-years old lady presenting with acute colonic obstruction due to a stenosing colon cancer of the splenic flexure. Past medical history included previous treatment for rhino-pharyngeal carcinoma, appendectomy, hysterectomy, and refusal of blood transfusion due to religious belief. Given the acute presentation, we decided to proceed with self-expandable colonic stenting. The patient quickly recovered from obstruction, underwent CT staging and was discharged home for planned elective surgery.

Results: After an interval time of 10 days, the patient was admitted for elective treatment. At laparoscopic exploration, the tumor of the splenic flexure was found to be strictly attached to the tail of the pancreas, therefore we performed laparoscopic resection of the splenic flexure with en-bloc with splenectomy and distal pancreatectomy in order to achieve R0 resection. The post-operative course was uneventful, and the patient was discharged home on post-operative day 7. Histological examination revealed mucinous adenocarcinoma pT4bN2b (24/30) G3 MSS R0 and the patient was submitted to adjuvant chemotherapy.

Conclusions: Self-expandable metallic stent represents a good option for patients presenting with acute obstruction from colon cancer. When feasible, it permits to plan radical oncological surgery with benefits in terms of post-operative recovery and long-term survival.

Keywords: colon cancer, laparoscopic surgery, obstructing colon cancer, blood management, advanced colon cancer

SESSION: ORAL PRESENTATION

LOWER GI AND COLORECTAL (SURGERY, ONCOLOGY AND ENDOSCOPIC INTERVENTION)

SHORT AND LONG-TERM RESULTS OF LAPAROSCOPIC COMPLETE MESOCOLIC EXCISION FOR RIGHT-SIDED COLON CANCER

Ernesto De Giulio, Giulia Turri, Gabriele Gecchele, Sabrina Zambelli, Jessica Cassiani, Jacopo Graziosi, Noemi Bicelli, Angelo Di Vittori, Vittoria Butera, Giacomo Faccioli, Alessandro Valdegamberi, Andrea Ruzzenente, Corrado Pedrazzani

Division of General and Hepatobiliary Surgery, Department of Surgical Sciences, Dentistry, Gynecology and Pediatrics, University of Verona, Verona, Italy

Background and Purpose: The potential benefits of complete mesocolic excision (CME) with central vascular ligation (CVL) for patients with colon cancer (CC) include a better specimen quality, adequate circumferential and longitudinal resection margins, and an optimal lymphadenectomy. However, debate still exists among Western surgeons due to concerns on increased post-operative morbidity without clear advantages on long-term outcomes. The aim of our study is to present our experience with this demanding procedure.

Materials and Methods: All consecutive patients undergoing laparoscopic right hemicolectomy for CRC between Jun 2014 and March 2023 were analyzed. After exclusion of patients with metastatic disease or stage I CC, 91 laparoscopic CME right hemicolectomy were included.

Results: 54% of patients were male, with a mean age was 67.9 years. The median BMI was 24.9 kg/m^2 (IQR 22.9-28.1) and 35% of patients were ASA 3 or above. No cases required conversion to open surgery. The median duration of surgery was 208 minutes (IQR 186-248), with minimal blood loss (median 30, IQR 20-60). Intracorporeal anastomosis was performed in 48 patients (52.7%). No post-operative deaths occurred, and only 6 patients (6.6%) suffered severe post-operative complications, including 1 case of anastomotic leak. The median post-operative stay was 5 (IQR 4-7). Pathological examination showed stage III CC in 39.6% of cases with a mean harvest of 31 lymph node. With regards to long-term results, 5-years disease-free, overall-, and cancer-related survival were 81.0%, 83.4%, and 94.4%, respectively. No local recurrence occurred during the follow-up.

Conclusion: Laparoscopic CME right hemicolectomy remains a demanding procedure with longer operative time. However, when performed in experienced centers, its optimal short- and long-term results without increased morbidity.

Keywords: laparoscopy, right hemicolectomy, colon cancer, complete mesocolic excision, D3 lymphadenectomy

MOLECULAR PATHOLOGY

YAP ACTIVATION IS ASSOCIATED TO A WORSE PROGNOSIS OF POORLY COHESIVE GASTRIC CANCER

Francesca Meloni[1], Maria Bencivenga[1], Lorena Torroni[1], Mariagiulia Dal Cero[1], Alberto Quinzii[2], Camilla Zecchetto[2], Valeria Merz[2], Simona Casalino[2], Francesco Taus[3], Silvia Pietrobono[2], Domenico Mangiameli[2], Federica Filippini[1], Mariella Alloggio[1], Claudia Castelli[4], Mar Iglesias[5], Manuel Pera[6], Davide Melisi[2]

Department of General Surgery, University of Verona, Verona, Italy[1] - Digestive Molecular Clinical Oncology Research Unit, University of Verona, Verona, Italy[2] - Department of Diagnostics and Public Health, Univerity of Verona, Verona, Italy[3] - Anatomical Pathology Unit, University of Verona, Verona, Italy[4] - Department of Pathology, Hospital del Mar Medical Research Institute (IMIM), Barcelona, Spain[5] - Section of Gastrointestinal Surgery, Hospital del Mar Medical Research Institute (IMIM), Barcelona, Spain [6]

Background and Purpose: Poorly Cohesive (PC) Gastric Cancer (GC) is extremely aggressive in progression. Accordingly, there is an urgent need to identify the molecular pathways involved in tumor progression. We hypothesize the essential role of the RhoA-YAP axis in these mechanisms.

Material and Methods: The present observational multicenter retrospective study included 133 patients with PC GC treated at two dedicated European surgical centers between 2004 and 2014. YAP nuclear localization was measured by immunohistochemical (IHC) analyses in tissue biopsies. The complete absence of nuclear reactivity was coded as a negative expression; we considered as "any positive" the low nuclear expression (<0% but >10% of cells) and high nuclear expression (≥ 10% of cells). Women represented about half of the present series (52%), and the median age was 64 years. Neoadjuvant and adjuvant treatments were administered to 10% and 54% of whole cases, respectively. D2 was the most common lymphadenectomy (54%). In nearly all cases, the number of retrieved nodes was ≥15, i.e. adequate for tumor staging (94%). An R0 resection was achieved in 80% of cases. Most patients were pT3/pT4 (79.0%) and pN2/pN3a/pN3b (47.0%) at the pathological examination. Twenty patients (15%) presented distant metastases. About 30% of negative YAP cases were at stage pT1-2 compared with 10% of cases showing YAP expression (p=0.039).

Results: Five-year overall survival (OS) was significantly higher in patients with negative YAP (46%, 95% CI 31.1-60.0%) than in the other patients (27%, 17.5-38.1%) p=0.029. Moreover, when controlling for sex, age, pT, pN and percentage of Signet Ring Cells in multivariable analysis, YAP expression was a significant predictor of overall survival (HR 2.03, 95% CI: 1.18-3.51, p=0.011).

Conclusion(s): Our results provide new insights into the role of the YAP signalling cascade, as its activation is associated with a worse prognosis in PC GC.

Keyword(s): Poorly Cohesive, Gastric Cancer, Yap expression, Tumor Progression

NEW TECHNOLOGY IN SURGICAL ONCOLOGY

PROPENSITY-MATCHING ANALYSIS COMPARING THE OUTCOMES OF RADIOFREQUENCY ABLATION VERSUS TRANSORAL ENDOSCOPIC THYROIDECTOMY FOR UNILATERAL BENIGN THYROID NODULES: A RETROSPECTIVE COHORT STUDY

Ting-Chun Kuo, Kuen-Yuan Chen, Ming-Tsan Lin, Ming-Hsun Wu

National Taiwan University Hospital, Department of Surgery, Taipei, Chinese Taipei

Background and Purpose: When thyroidectomy can be performed in a scarless manner, whether ablation is still the treatment of choice based on safety, effectiveness, and cost remains unclear. We aimed to compare new approaches as radiofrequency ablation or transoral endoscopic thyroidectomy vestibular approach that ensure scarless outcomes in the treatment of benign thyroid nodules.

Material and Methods: We retrospectively reviewed all patients with unilateral benign thyroid nodules who had undergone scarless procedures between December 2016 and September 2021 at our institution. Propensity score matching was performed to minimize selection bias. This main outcome was effectiveness as measured by therapeutic success, patient satisfaction with cosmetic improvement, and goiter classification graded by clinicians at one year.

Results: Of the 2,814 nonfunctional thyroid nodule cases treated during this period, 642 were benign and unilateral. Overall, 121 and 100 patients had undergone radiofrequency ablation and transoral endoscopic thyroidectomy vestibular approach, respectively. After matching, 168 patients were selected and divided into two groups (84 patients in each group). The incidence of complications was comparable between the two groups, except for a higher incidence of transient subclinical hypothyroidism in transoral endoscopic thyroidectomy vestibular approach group (7.14% vs. 0%, $p = 0.0285$). Treatment time (30.8±13.6 min vs. 120.7±36.5 min, $p < 0.0001$) and cost ($2,059.5±$86.8 vs. $4,621.9±$162.3, $p < 0.0001$) were lower in radiofrequency ablation group. A year after treatment, therapeutic success (100.0% vs. 90.5%, $p = 0.0070$), patient satisfaction with cosmetic improvement, and goiter classification graded by clinicians were superior in the transoral endoscopic thyroidectomy vestibular approach group.

Conclusion(s): Both scarless procedures were comparable in terms of complication risk. Transoral endoscopic thyroidectomy vestibular approach was more effective and provided better satisfaction, whereas radiofrequency ablation was less expensive.

Keyword(s): Transoral endoscopic thyroidectomy vestibular approach, Radiofrequency ablation, Benign thyroid nodule, Thyroidectomy, Minimal invasive procedure, Scarless procedures

NUTRITION AND LIFESTYLE

A PICTURE OF BODY MASS INDEX (BMI) IN GASTRIC CANCER TREATMENT: THE ITALIAN GROUP OF GASTRIC CANCER RESEARCH (GIRCG) EXPERIENCE

Lorena Torroni [1], Maria Bencivenga[2], Mariella Alloggio[2], Michele Sacco[2], Francesco Taus[3], Fausto Rosa[4], Maurizio Degiuli[5], Daniele Marrelli[6], Leonardo Solaini[7], Elisabetta Marino[8], Francesca Steccanella[9], Giovanni de Manzoni[2], Giuseppe Verlato[10]

University of Verona, Unit of Epidemiology and Medical Statistics, Department of Diagnostics and Public Health. Unit of General and Upper GI Surgery, Verona, Italy[1] - University of Verona, Unit of General and Upper GI Surgery, Verona, Italy[2] - University of Verona, Unit of Epidemiology and Medical Statistics, Department of Diagnostics and Public Health; Unit of Forensic Medicine, Verona, Italy[3] - Universitü Cattolica del Sacro Cuore, Digestive Surgery, Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Roma, Italy[4] - San Luigi University Hospital, Orbassano, Surgical Oncology and Digestive Surgery Unit, Orbassano, Italy[5] - University of Siena, Department of Medicine, Surgery and Neurosciences, Unit of General Surgery and Surgical Oncology, Siena, Italy[6] - University of Bologna, Morgagni-Pierantoni Hospital, Department of Medical and Surgical Sciences, Forlµ, Italy[7] - University of Perugia, Department of General and Emergency Surgery, Santa Maria della Misericordia Hospital, Perugia, Italy[8] - AOU San Giovanni di Dio and Ruggi d'Aragona, General Surgery of Ruggi, Salerno, Italy[9] - University of Verona, Unit of Epidemiology and Medical Statistics, Department of Diagnostics and Public Health, Verona, Italy[10]

Background and Purpose: Obesity is a severe health problem and considered a risk factor for surgical procedures in gastric cancer (GC). The present study aims to analyse the postoperative outcomes after gastrectomy according to BMI categories in a multicenter series.

Material and Methods: This is a national multicenter retrospective observational study, considering operated patients with primary GC between 01/01/2010 and 31/12/2020 in 7 participating GIRCG centres. The BMI was categorised according to the World Health Organization (WHO) classification.

Results: Data from 1367 patients who underwent gastrectomy were retrospectively collected. 61% of our series were males with a median age of 70 (63-78) years. The median BMI was 24.7 (22.2-27.3) kg/m^2, and the distribution of BMI categories was: 728 (53%) norm-weight, 489 (36%) over-weight and 150 (11%) obese. The percentage of patients treated with neoadjuvant chemotherapy did not differ between BMI categories. The percentage of patients who underwent laparoscopic approach was similar in obese and norm weight. The sub total gastrectomy was more frequent in overweight/obese patients (47.8%), while the norm weight (54.3%) in total gastrectomy. In the overweight/obese, the extent of lymphadenectomy was mainly D1+, and the median total number

of removed lymph nodes in the obese patients was significantly lower (median 30, min-max: 2-126) from the norm weight (32, 0-160) (p=0.028). The pathological TNM did not differ between BMI categories. 89% of obese patients reached the radical intent, and the proportion of postoperative complications was 39% vs 36% vs 36% in obese, normal and overweight, respectively. The proportion of death during the follow-up was 38% and significantly different among BMI groups (p=0.031).

Conclusion(s): Some technical issues likely affect lymphadenectomy for GC in obese patients. This is associated to a significantly lower long-term survival in such patients. Technology should be used to improve surgical procedures in obese patients with GC.

Keyword(s): BMI, Gastric Cancer, National study, GIRCG, obesity treatment

RARE GI TUMORS (NEUROENDOCRINE TUMORS, GIST, AND SARCOMAS)

RETROPERITONEAL SOFT TISSUE SARCOMAS

Rossen Madjov, Vasil Bozhkov, Plamen Chernopolsky, Dilyan Chaushev

University Hospital 'St. Marina', 2nd Dept. Surgery, Varna, Bulgaria

Background and Purpose: Retroperitoneal sarcomas (RPS) are rare malignant tumors with aggressive course of disease and high local recurrence rate. Of all soft tissue sarcomas 10-20% are located in the retroperitoneum.

Material and Methods: Authors perform a retrospective analyses of the treatment in 51 patients with primary or recurrent RPS

Results: Peak incidence occurs during the fifth-sixth decades of life, although RPS can occur in any age group. At the time of diagnosis 30% had distant metastases, most common – liver mets. Liposarcoma was the most common type (found in 21 pts), followed by leiomyosarcoma. Operative treatment resulted in a complete tumor resection in 58% of the patients. In 9 patients there was recurrence (mean disease free period – 9 months), followed by reoperations.

Conclusion(s): Aggressive surgery is recommended in the majority of patients. Complete tumor resection (en bloc) and low malignancy grade were independent favourable prognostic factors. Authors strongly advise that patients with RPS should be treated in specialized centers with high experience in the multidisciplinary therapeutic approach.

Keyword(s): retroperitoneal sarcomas, surgery

TARGETED THERAPY AND IMMUNOTHERAPY

EFFICACY OF GV1001 WITH GEMCITABINE/CAPECITABINE IN PREVIOUSLY UNTREATED PATIENTS WITH ADVANCED PANCREATIC DUCTAL ADENOCARCINOMA HAVING HIGH SERUM EOTAXIN LEVELS (KG4/2015)

Si Young Song[1], *Jung Hyun Jo*[2], *Hyungsik, Roger Moom*[3]

Yonsei University College of Medicine, Professor, Emeritus, Seroul, Republic of Korea[1] - Yonsei University College of Medicine, Professor, Seroul, Republic of Korea[2] - University of Southern California, Professor, Los Angelis, United States of America[3]

Background and Purpose: The TeloVac study indicated GV1001 did not to improve the survival of advanced pancreatic ductal adenocarcinoma (PDAC). However, the cytokine examinations suggested that high serum eotaxin levels may predict responses to GV1001. This phase III trial assessed the efficacy of GV1001 with gemcitabine/capecitabine for eotaxin-high patients with untreated advanced PDAC.

Material and Methods: Patients recruited from 16 hospitals received gemcitabine (1,000 mg/m^2, D 1, 8, and 15)/capecitabine (830 mg/m^2 BID for 21 days) per month either with (GV1001 group) or without (control group) GV1001 (0.56 mg; D 1, 3, and 5, once on week 2–4, 6, then monthly thereafter) at random in a 1:1 ratio. The primary endpoint was overall survival (OS) and secondary endpoints included time to progression (TTP), objective response rate, and safety.

Results: Total 148 patients were randomly assigned to the GV1001 (n=75) and control groups (n=73). The GV1001 group showed improved median OS (11.3 vs. 7.5 months, p=0.021) and TTP (7.3 vs. 4.5 months, p=0.021) compared to the control group. Grade >3 adverse events were reported in 77.3% and 73.1% in the GV1001 and control groups (p=0.562), respectively.

Conclusion(s): GV1001 plus gemcitabine/capecitabine improved OS and TTP compared to gemcitabine/capecitabine alone in eotaxin-high patients with advanced PDAC.

Keyword(s): GV1001, pancreatic cancer, phase III

UPPER GI
(SURGERY, ONCOLOGY AND ENDOSCOPIC INTERVENTION)

INTRACORPOREAL HAND SEWING ANASTOMOSIS IN LAPAROSCOPIC D2 TOTAL GASTRECTOMY FOR GASTRIC CANCER

Veronika Patsko, Yurii Ostapenko, Kateryna Cherchenko, Andrii Lukashenko

National Cancer Institute of Ukraine, Department of Minimally Invasive and Endoscopic Surgery, Interventional Radiology, Kyiv, Ukraine

Background and Purpose: Mechanical stapling method is widely used for laparoscopic esophago-jejunal anastomosis after total gastrectomy (TG), but the costs and safety compared to hand sewing anastomosis were not much considered.

Material and Methods: The data of patients for whom laparoscopic total gastrectomy with D2 lymphatic dissection was performed at National Cancer Institute (Ukraine) from January 2016 to December 2021 was assessed. All patients were randomized into two groups. Patients included into Group 1 underwent reconstruction using linear stapling technique, while patients in Group 2 underwent laparoscopic intracorporeal hand sewing technique of anastomosis. Patients with similar characteristics were included into the analysis.

Results: Overall 119 patients with similar characteristics were included into the study, for 106 89.07% of them laparoscopic TG with D2 lymphatic dissection and esophagojejunostomy were successfully performed. The reason for exclusion was the need for conversion to laparotomy. There were significant differences in the operative time and time for esophagojejunostomy between stapling and hand sewing groups. Intra-operative blood loss didn't differ much (58.3 ± 24.5 mL vs 51.4 ± 26.8 mL), as well as time to defecation (3.5 ± 0.8 d vs 3.1 ± 0.9 d, P = 0.12) and time to solid diet (4.2 vs 3.9), there was a difference in time of hospitalization in two groups (9.4vs7.5) time to ambulation (6.9 ± 1.1 d vs 5.1 ± 1.4 d, P = 0.11). There were no other serious morbidity in both groups. In addition, operation cost was significantly higher in Group I

Conclusion(s): Hand sewing technique showed to be more cost effective and safe compared to stapling method, on the other hand it was slower and required a more experienced surgeon to perform the procedure. Further studies are needed to evaluate which method is the best for improving sort- and long term results.

Keyword(s): Gastric, cancer, endoscopy, anastomosis, surgery

THE POTENTIALS AND POSSIBILITIES OF MULTIVISCERAL RESECTIONS IN LOCALLY ADVANCED GASTRIC CANCER

Tsvetan Trichkov, Vassil Mihaylov, Radoslav Kostadinov, Eyup Eyupov, Vassil Sirakov, Vesselin Ivanov, Nikola Vladov

Military Medical Academy, Clinic of HPB and Transplant Surgery, Sofia, Bulgaria

Background and Purpose: Multivisceral resections (MVRs) in advanced gastric cancer are curable in selected patients when R0 is possible. The safety is questionable because of the reported data heterogeneity. The study compares outcomes between standard and multivisceral resections.

Material and Methods: A monocentric retrospective study in patients with gastric adenocarcinoma between 2004 and 2022. Of the 365 operations, 106 underwent MVRs. The remaining 259 experienced standard gastric resections (SGRs). 106 patients with palliative procedures (PPs) are used to compare survival. The information is processed using SPSS Statistics™. A p-value < 0.05 is considered significant.

Results: The MVRs had a lower OS than SGRs but were higher than the PPs ($p < 0.05$). The comparison of 5-year survival (MVRs-18.8% and SGRs-24.6%) demonstrates no significance ($p=0.24$). The 30-day mortality is 3.96% (n = 4), and the median survival is 28.1 months. The most resected organs are the spleen (n = 69, 65.1%), followed by the pancreas (n = 34, 32.1%), liver (n = 23, 21.7%), and colon (n = 22, 20.8%). In 55.7% (n = 59), two organs are resected; in 30.2% (n = 32) – three; in 13.2% (n = 14) – four. No significance compared to the number and type of resected organs ($p > 0.05$). The leading complications of the MVRs were bleeding (n = 10, 9.9%), abscess (n = 8, 7.9%), anastomotic leak (n = 6, 5.9%), and pancreatic fistula (n = 6, 17.7%). The major complications in the MVRs were 14.85% (n = 15) and in the SGRs 6.4% (n = 11) ($p < 0.05$).

Conclusion(s): MVRs established poorer outcomes than SGRs, except for the 5-year survival. The procedure is achievable when an experienced team performs in specialized centers. However, no general conclusion about feasibility and safety at this stage can be drawn. More studies are needed to understand this controversial issue better.

Keyword(s): Gastric adenocarcinoma, multivisceral resection

WESTERN VALIDATION OF KOQUSS-40 QUESTIONNAIRE ASSESSING QUALITY OF LIFE (QOL) OF GASTRIC CANCER PATIENTS AFTER GASTRECTOMY

Federica Filippini[1], Lorena Torroni[2], Hyuk-Joon Lee[3], Jeong Sang-Ho[4], Francesca Steccanella[5], Mariella Alloggio [1], Flavia Zoccola[5], Han-Kwang Yang[3], Giovanni de Manzoni[1], Maria Bencivenga[1]

University of Verona, Department of General Surgery, University of Verona, Verona, Italy[1] - University of Verona, Unit of Epidemiology and Medical Statistics, University of Verona, Verona, Italy[2] - Seoul National University College of Medicine, Department of Surgery, Seoul National University College of Medicine, Seoul, Republic of Korea[3] - Gyeongsang National University Changwon Hospital, Department of General Surgery, Gyeongsang National University Changwon Hospital, Changwon, Republic of Korea[4] - University of Salerno, Department of General Surgery, AOU San Giovanni di Dio e Ruggi d'Aragona, University of Salerno, Salerno, Italy[5]

Background and Purpose: None of the questionnaires used to assess quality of life after gastrectomy for gastric cancer, as EORTC-QLQ-STO22, evaluates specifically post-gastrectomy syndrome symptoms. Questionnaire developed by Korean Quality of life in Stomach cancer patients Study group, KOQUSS-40,was validated to fill this gap,inlcuding 40 items on 11 topics. Aim of this study is to provide a Western validation of KOQUSS-40 questionnaire.

Material and Methods: After translation, KOQUSS-40 was administered to 20 patients after gastrectomy at Upper GI Surgery of Verona to check comprehensibility and adjust for cultural adaptation. Some differences emerged and we modified 3 questions,about public exposure of scars and treatment cost, while a new one (41) was added, on effects of neoadjuvant therapy. This version (IQUSS-41) was administered from May 2021 to April 2022 to 92 patients in 2 Italian Centers. Criterion validity was assessed comparing IQUSS-41 and EORTC questionnaires scores. Items were developed using 4-points Likert scale. We evaluated average score and standard deviation of each item.

Results: Patients's median age was 66 years, 59.8% were male, 57.6% had BMI>25.Patients were affected mostly by T≥3(50.0%),N0(61.9%) and M0(96.7%) gastric cancer,55.4% underwent total gastrectomy and 67.4% D2 lymphadenectomy,mainly with open technique(81.5%). Neoadjuvant therapy was administered in 37%, adjuvant chemo in 44.6%. Analysis of criterion validity showed good correlation between IQUSS-41 and EORTC questionnaires.After cultural adaptation, item analysis revealed that IQUSS-41 was more appropriate,with 3 or 4 as maximum score in all items.Most unanswered questions was due to mistakes or low level of education,while item 41 can only be filled by patients undergone neoadjuvant therapy.Thus,we had to simplify the vocabulary and add a sub-question introducing 41,before multicenter phase.

Conclusion(s): KOQUSS-40 is the only questionnaire that specifically assess post-gastrectomy symptoms. We provided evidences on effective cultural adaption of KOQUSS-40 with elaboration of IQUSS-41,in a Western population.Further changes are requested before administering IQUSS-41 in multicenter study at 10 Italian Centers.

Keyword(s): Gastric cancer, Quality of life, questionnaire, KOQUSS-40

THE NEED OF CDH1 GERMLINE MUTATION SCREENING IN PATIENTS WITH GASTRIC CANCER IN THE WEST

Mariella Alloggio[1], Michele Sacco[2], Anna Tomezzoli[3], Gianluca Tedaldi[4], Lorena Torroni[5], Giovanni de Manzoni[6], Maria Bencivenga[1]

University of Verona, Upper GI division, Verona, Italy[1] - University Hospital of Verona, Upper GI division, Verona, Italy[2] - University Hospital of Verona, Department of Pathology, Verona, Italy[3] - Biosciences Laboratory, Istituto Scientifico Romagnolo per lo Studio e la Cura dei Tumori (IRST) IRCCS, Meldola, Italy[4] - University of Verona, Unit of Epidemiology and Medical Statistics, Department of Diagnostics and Public Health, Veorna, Italy[5] - University of Verona, Chief of Upper GI division; Director of General Surgery Department and of Surgical, Odontostomatologic, Maternal and Child Sciences, Verona, Italy[6]

Background and Purpose: Hereditary-Diffuse Gastric Cancer (HDGC) is an autosomal dominant cancer syndrome predominantly caused by germline mutations in the tumour suppressor gene CDH1. 1-3% of Gastric Cancers arise in the context of HDGC, however the screening for CDH1 germline mutations is not carried out systematically in Europe. The aim of the present study is to show the results of a 10-years screening in the West.

Material and Methods: It is a retrospective observational study that involves two Italian centres. From January 2011 to April 2021, 33 patients, diagnosed with DGC at Upper GI Surgery of Verona and meeting the criteria for CDH1 germline mutations screening, were tested. Blood samples were collected and then analysed at Biosciences Laboratory of I.R.S.T., in Meldola: from 2011 to 2018 (13 cases) the analyses were carried out by Trusight Cancer illumina panel, then (20 patients) by SOPHiA Hereditary Cancer Solution.

Results: In the first group, 4 out of 13 subjects (30%) showed pathogenic CDH1 aberrations: 3 point mutations (c.781G>T p.Glu261Ter; c.360delG p.His121ThrfsTer94; c.1137G>A p.Thr379=) and 1 deletion (DEL 1-2). In the second group, 2 out of 20 subjects (10%) show a pathogenic CDH-1 point mutation (c.1565+1G>A p.?; c.1062delG p.Leu355Ter). The screening of 40 relatives identificated of 18 mutation carriers, 12 of them underwent prophylactic total gastrectomy (PTG). 8 of these patients presented neoplastic foci in the specimen. 15 patients underwent to surgery due to clinically detectable tumours or positive biopsies during endoscopic surveillance; the youngest case of early SRC tumours endoscopic detection was aged 15. During surgery, 7 patients required an additional oesophageal resection due to the presence of gastric mucosa at the extemporary frozen section.

Conclusion(s): CDH1 genetic screening should be offered to high-risk Western patients. A PTG could be indicated in high number of CDH1 mutation carriers with a dramatic impact in controlling cancer development.

Keyword(s): Hereditary Diffuse Gastric Cancer, CDH1

GASTRIC CANCER IN THE YOUNG ADULT. NEW INCIDENCE FROM EAST TO WEST?

Esteban Serrano[(1)], Lorena Torroni[(1)], Maria Bencivenga[(1)], Mariella Alloggio[(1)], Michele Sacco[(1)], Francesco Taus[(2)], Paulo Kassab[(3)], Osvaldo Antonio Prado Castro[(3)], Etsuro Bando[(3)], Masanori Terashima[(4)], Giovanni De Manzoni[(1)], Giuseppe Verlato[(2)]

University of Verona, Unit of General and Upper Gi Surgery, Verona, Italy[(1)] - University of Verona, Unit of Epidemiology and Medical Statistics, Department of Diagnostics and Public Health, Verona, Italy[(2)] - Santa Casa of São Paulo Medical School, Department of Surgery, Gastric and Obesity Surgical Division, Sao Paulo, Brazil[(3)] - Shizuoka Cancer Center, Division of Gastric Surgery, Shizuoka, Japan[(4)]

Background and Purpose: The incidence of gastric cancer(GC)declined in the past five decades, while an increasing trend has been reported in GC young adult patients(GCYA).We aimed to study the prevalence of GCYA patients(≤45 years)as a function of country, histology, treatment, survival, and compared to gastric cancer in adults(GCA).

Material and Methods: We designed an observational, multicentric international retrospective study considering consecutive patients who underwent gastrectomy for GC from January 1st,2010,to December 31st,2020, in three centers located in Europe(Italy), South America(Brazil),and Asia (Japan).Over ten years, 1657 patients were collected from three centers. Among them, 156 patients were GCYA and 1501 GCA.

Results: Most GCA patients were male(67%),while in GCYA,56% were female.The median age of GCA was 68 years(p25-p75=59-75)and 39 years(35-42)in the GCYA patients. In the GCYA group, the frequency of diagnoses increased from 3.8% in 2011 to 5.8% in 2020. Indeed,an increase in GC diagnoses has been observed in the young adult group of patients, with a peak around 40 years old.The clinical tumor stage in GCYA was lower in Japan than in Italy,while TNM did not significantly differ among the three centers at pathological examination.Differences in histological classification emerged between the three centers in GCYA patients: in the Italian and Brazilian centers,the predominant histotype was diffuse, while in the Japanese centre,mixed histotype was the most prevalent.No differences were found in the choice of extension of lymphadenectomy,D2 being the main procedure. The Overall survival(OS)in the GCYA group did not differ between the Western centers;in contrast,OS was significantly higher in Japan,with a five-year survival of 86.7%(CI 95%: 0.74-0.93)(p=0.034).

Conclusion(s): Over the past ten years,new diagnoses peaked at ages less than 50 years. This new trend can be found in countries with different ethnicity and risk factors for Gastric Cancer development. Screening programs focused on young people should be planned.

Keyword(s): Gastric cancer, incidence, young adults, observational, multicenter, retrospective

ENDOSCOPIC VACUUM-ASSISTED TREATMENT WITH ESO-SPONGE IN PATIENT WITH ANASTOMOTIC LEAKAGE AFTER IVOR-LEWIS ESOPHAGECTOMY IN SALVAGE SURGERY PROCEDURE

Carlo Muzi, Federica Filippini, Mariella Alloggio, Michele Sacco, Jacopo Weindelmayer, Simone Giacopuzzi, Giovanni de Manzoni, Maria Bencivenga

University of Verona, Unit of General and UpperGI Surgery, Verona, Italy

Background and Purpose: Esophagogastric leakage is one of the most severe postoperative complications after esophagectomy,with mortality rate of 20%. Partial anastomotic dehiscence can be successfully treated with an endoscopic vacuum-assisted treatment,thanks to use of Eso-SPONGE.In the present paper,we report a case of esophago-gastric leakage after subtotal esophagectomy sec.Ivor-Lewis for esophageal cancer who was successfully treated using this procedure.

Material and Methods: Endoscopic vacuum therapy (eso-SPONGE) was used for treatment of partial anastomotic dehiscence after subtotal esophagectomy.

Results: A 75-year-old female underwent Ivor-Lewis esophagectomy with regional lymphadenectomy for distal esophageal SCC, with laparoscopic and thoracic-robotic-assisted approach. Patient received neoadjuvant chemoradiotherapy treatment(CROSS scheme)and salvage surgery was performed 5 months after the end of therapy.Eight days after surgery,due to the appearance of fever unresponsive to antibiotic therapy and increase of leukocytes,a CT abdomen-thorax scan was performed that showed a small dehiscence of anastomosis with associated paraesophageal wide fluid and air collection.We performed a gastroscopy that confirmed the presence of 1,5cm dehiscence on the posterior wall of the esophagus connected with cavity filled with fibrin and pus of 3 cm in diameter.During this procedure eso-SPONGE was placed between the cavity and oesophageal lumen.Dehiscence was successfully treated after 5 substitutions of this device with a progressively reduction in size of the sponge.In the meantime,patient was fed with enteral nutrition through nasogastric sonde that was removed with eso-Sponge at the end of therapy.CT scan and swallow X ray were performed after eso-SPONGE removal to check successful closure of wall defect.

Conclusion(s): Eso-SPONGE treatment could be an effective and safe method of therapy for esophagogastric leakage that could avoid surgical treatment for patients and other possible complications. Indeed in our Center we successfully treated with this type of vacuum-therapy 10 patients with esophago-gastric leakage after Ivor-Lewis esophagectomy,from 2019 to 2022.

Keyword(s): esophago-gastric leakage, Eso-SPONGE, endoscopic vacuum therapy, esophageal cancer

CLINICAL FEATURES OF GASTRIC SIGNET-RING CELL CANCER: RESULTS FROM A SYSTEMATIC REVIEW AND META-ANALYSIS

Mariagiulia Dal Cero[1], Maria Bencivenga[2], DHW Liu[3], Michele Sacco[2], Mariella Alloggio[2], KGP Kerckhoffs[4], Federica Filippini[2], Luca Saragoni[5], Anna Tomezzoli[6], Fatima Carneiro[7], Heike Grabsch[4], Giuseppe Verlato[8], Lorena Torroni[8], Guillaume Piessen[9], Manuel Pera[1], Giovanni de Manzoni[2]

Universitat Autonoma de Barcelona, Section of Gastrointestinal Surgery, Hospital Universitario del Mar, Hospital del Mar Medical Research Institute (IMIM), Barcelona, Spain[1] - University of Verona, General and Upper GI Surgery Division, Department of Surgery, Verona, Italy[2] - Maastricht University Medical Cente, Department of Pathology, GROW School for Oncology and Reproduction, Maastricht, Netherlands[3] - Maastricht University Medical Center, Department of Pathology, GROW School for Oncology and Reproduction, Maastricht, Netherlands[4] - Morgagni-Pierantoni Hospital, Pathology Unit, Forlì, Italy[5] - University of Verona, Department of Pathology, Verona, Italy[6] - University of Porto, Department of Pathology, Porto, Portugal[7] - University of Verona, Unit of Epidemiology and Medical Statistics, Department of Diagnostics and Public Health, Verona, Italy[8] - Lille University Hospital, Department of Digestive and Oncological Surgery, Lille, France[9]

Background and Purpose: Conflicting results about the prognostic relevance of signet ring cell histology in gastric cancer have been reported. We aimed to perform a meta-analysis focusing on the clinicopathological features and prognosis in patients with Signet Ring Cell Cancer of the stomach compared with other specific histologies of gastric cancer.

Material and Methods: A systematic literature search in the PubMed database was conducted, including all publications up to October 1st, 2021, using synonyms and MESH terms for 'gastric' and 'signet-ring cell cancer'. A meta-analysis comparing the results of the studies was performed.

Results: 2062 studies referring to gastric cancer with Signet Ring Cell histology were identified. 262 studies reported clinical information about Signet Ring Cell Cancer. Of these, 74 were suitable to be included in the study. In the set of 74 selected articles, we found that the WHO classification was the most frequently used (37%), followed by the Japanese classification (10%). The meta-analysis showed a slightly lower risk of developing nodal metastases in Signet Ring Cell Cancer compared to other histotypes, especially to Undifferentiated/Poorly Differentiated/mucinous cancer (RR=0.76, 95% CI 0.69-0.84) and mixed cancer (RR=0.89, 95% CI 0.87-0.98); the lower risk was more evident in Early Gastric Cancer while slightly increased in Advanced Gastric Cancer. Survival tended to be better in early-stage Signet Ring Cell compared to other histotypes (RR=0.67, 95% CI0.38-0.97), no differences were shown in advanced stages (RR=1.15, 95% CI0.94-1.36), and survival was poorer in metastatic tumors (RR=1.29, 95% CI1.09-1.49). In the subgroup analysis, survival in Signet Ring Cell Cancer was slightly worse compared to Non-Signet Ring Cell Cancer (RR=1.20, 95% CI1.05-1.36) and

Differentiated/Well Moderately Differentiated/Adenocarcinoma not otherwise specified (RR=1.09, 95% CI1.03-1.15).

Conclusion(s): With the limit of the inconsistency of pathological definitions, Signet Ring Cell Carcinoma seems to have different biological behaviour than other histologies of gastric cancer.

Keyword(s); Gastric cancer, Signet Ring cell

WHAT IS NEW ABOUT THE EXTENSION OF LYMPHADENECTOMY FOR GASTRIC CANCER? A SYSTEMATIC REVIEW AND META-ANALYSIS

Francesca Blasa[(1)], Francesco Taus[(2)], Maria Bencivenga[(1)], Simone Giacopuzzi[(1)], Michele Sacco[(1)], Giovanni De Manzoni[(1)], Giuseppe Verlato[(2)]

University of Verona, Unit of General and Upper GI Surgery, Verona, Italy[(1)] - University of Verona, Unit of Epidemiology and Medical Statistics, Verona, Italy[(2)]

Background and Purpose: In the Nineties,two European randomised clinical trials found no survival advantage after extended(D2)lymphadenectomy to limited(D1)one.A very high postoperative mortality burdened D2.Eastern surgeons supported the routine use of D2.International and national guidelines progressively adopted the latter view.Only the National Comprehensive Cancer Network guidelines,produced in the US,mention three types of lymphadenectomies(D0,D1,D2),with the only recommendation to remove 15 lymph nodes.We aimed to update the current evidence on the extension and most recommended lymphadenectomy according to international guidelines.

Material and Methods: A systematic review was carried out on Web of Science database.The research included publications from 2010 to 2021 and combined Medical Subject Headings terms: “Lymphadenectomy and gastric cancer and RCT” or “Lymphadenectomy and gastric cancer and guidelines". Meta-analyses were separately performed on RCTs,and overall survival and recurrence-related survival were also considered.

Results: No new RCT comparing D1 and D2 was found in the last ten years.Only two articles reported the late results of the Dutch and Italian trials.No difference emerged between D1 and D2 as regards overall survival(OS)(RR of D2 vs D1=0.98,95% CI 0.82-1.16; p=0.808),while D2 was significantly favoured as regards recurrence-related survival(RR=0.81, 95% CI 0.69-0.95; p=0.008), i.e. when neglecting postoperative mortality and other causes of death. Interestingly the Italian trial found that OS and Disease-Specific Survival(DSS)were better after D1 in elderly patients and early stages,while DSS was better after D2 in advanced stages(pT>1 N+).

Conclusion(s): New RCTs comparing D1 or D2 were lacking during the observation period,which likely reflects the absence of equipoise concerning the two procedures according to most international guidelines(ESSO-ESMO-ESTRO).Only 15-year results of previously performed trials were published as an update,and they support an advantage of D2 over D1 if performed with no or minimal post-operative mortality.The need to tailor treatment to the patient and the tumour’s characteristics emerged.Indeed,the surgical community is moving from an Eastern-Western confrontation about D1/D2 to a more sensible tailored approach.

Keyword(s): D2lymphadenectomy, D1gastrectomy, gastric cancer, DSS

FEASIBILITY AND SAFETY OF AN ACTIVE SURVEILLANCE PROTOCOL AFTER NEOADJUVANT CHEMORADIOTHERAPY FOR SQUAMOUS CELL CARCINOMA OF THE ESOPHAGUS

Maria Clelia Gervasi[(1)], Carlo Alberto De Pasqual[(1)], Giovanni De Manzoni[(1)], Michele Pavarana[(2)], Daniela Cenzi[(3)], Gabriella Rossi[(4)], Jacopo Weindelmayer[(1)], Leonardo Bertuzzi[(1)], Elia Canepari[(1)], Simone Giacopuzzi[(1)]

Ospedale Civile Maggiore Borgo Trento, University of Verona, General and Upper Gastro Intestinal Surgery, Verona, Italy[(1)] - Ospedale Civile Maggiore Borgo Trento, University of Verona, Oncology department, Verona, Italy[(2)] - Ospedale Civile Maggiore Borgo Trento, University of Verona, Radiology department, Verona, Italy[(3)] - Ospedale Civile Maggiore Borgo Trento, University of Verona, Radiotherapy department, Verona, Italy[(4)]

Background and Purpose: International guidelines indicate active surveillance (AS) after chemo-radiotherapy (CRT) as a possible option in the treatment of esophageal squamous cell carcinoma (SCC). However, there are few data on the actual feasibility and on the long term results of an AS protocol.

Material and Methods: We included all patients submitted to neoadjuvant CRT for esophageal SCC in the period 2015-2022 at our institution. After 6 weeks from the completion of the CRT all patients underwent a clinical response assessment with endoscopy with bite-on-bite biopsies, CT-scan, FDG PET scan. In case of cCR, patients were candidate to AS. The restaging was carried out every 3 months in the first year, every 4 months in the second year and every 6 months afterwards. This group was compared to patients with no cCR and therefore treated with esophagectomy.

Results: We included 103 patients: 39 of them (37,8%) underwent AS (AS group), 56 patients (54,4%) had a surgical resection (surgery group). 8 patients (7,8%) had an optimal/nearly complete response but, since they were not fit for surgery, were candidate to AS (forced active surveillance group, FAS group). 4-year recurrence rate was 18% for AS group, 40% for S group and 100% for FAS group. 4-year OS was comparable between AS and S group (p=0,41), while was significantly lower in FAS group (p<0,001). AS group achieved a better 4-year DFS compared to S group (p=0,03). AS group were compared to patients with pCR after surgery: there were no differences in 4-year DFS (p=0,63).

Conclusion(s) Active surveillance feasible in case of cCR after neoadjuvant CRT in esophageal SCC. A strict protocol and a dedicated multidisciplinary team are essential to successfully apply this strategy.

Keyword(s): ESOPHAGEAL SQUAMOUS CELL CARCINOMA, DEFINITIVE CRT, ACTIVE SURVEILLANCE AFTER CRT,CLINICAL COMPLETE REPSONSE AFTER CHEMORADIOTHERAPHY IN ESOPHAGEAL SQUAMOUS CELL CARCINOMA

IMPACT OF SARCOPENIA ASSESSED BY UPDATED EWGSOP DEFINITION ON SURVIVAL OUTCOMES IN PATIENTS UNDERGOING CURATIVE GASTRECTOMY FOR GASTRIC CANCER

Mehmet Ulusahin, Reyyan Yildirim, Arif Burak Cekic, Oguz Erkul, Murat Emre Reis, Ali Guner

Karadeniz Technical University, Dept of General Surgery, Trabzon, Turkey

Background and Purpose: Sarcopenia, is a known poor prognostic factor in several cancers. However, while its impact on survival outcomes in patients with gastric cancer undergoing gastrectomy has been extensively studied in Asian populations, there is limited evidence on its impact on survival outcomes in Western populations. In this study, we assessed the impact of sarcopenia on survival outcomes in patients who underwent curative gastrectomy for gastric cancer.

Material and Methods: Sarcopenia which is the presence of low muscle mass plus either low muscle strength or low physical performance, was defined based on the updated EWGSOP definition. The long-term data from a prospective study evaluating the postoperative outcomes of sarcopenia in patients who underwent gastrectomy for gastric cancer between December 2016 and April 2020 was used. In addition to the original exclusion criteria, patients with non-curative surgery were excluded. Kaplan-Meier analysis and Cox regression models were used to assess overall survival (OS), recurrence-free survival (RFS), and time-to-recurrence (TTR) in patients with and without sarcopenia.

Results: Among 129 patients, 26 (20.2%) patients had sarcopenia. Patients with sarcopenia had significantly poorer OS (Hazard ratio [HR]: 2.21 [1.22-3.99, p=0.009]), and RFS (HR: 2.17 [1.20-3.91, p=0.010]) than those without sarcopenia. No difference was observed for TTR. After adjusting for age, pathological stage, neoadjuvant/adjuvant chemotherapy, sarcopenia was not an independent factor of OS (HR: 1.64 [0.83-3.22, p=0.154]), RFS (HR: 1.33 [0.66-2.69, p=0.427]), TTR (HR: 0.99 [0.38-2.61, p=0.991]). Severe sarcopenia, muscle strength, muscle mass, physical performance were also not an independent factor for survival outcomes.

Conclusion(s): Sarcopenia is associated with poor survival outcomes in patients with gastric cancer undergoing curative gastrectomy. However, this relationship may be confounded by other factors such as age, pathological stage, and neoadjuvant/adjuvant chemotherapy. Further studies are needed to explore the impact of sarcopenia on survival outcomes in Western populations.

Keyword(s): Gastric Cancer, Sarcopenia, Surgery, Nutrition

ROBOTIC VERSUS LAPAROSCOPIC VERSUS OPEN GASTRECTOMY FOR GASTRIC CANCER

Eli Kakiashvili

Galilee Medical Center, University of Bar Ilan, Naharyia, Israel

Background and Purpose: the study presents preliminary comparison of operative and postoperative outcome between robotic, laparoscopic and open gastrectomies (total and partial) for gastric adenocarcinoma.

Material and Methods: Retrospective cohort of 117 consecutive patients that underwent total or partial gastrectomy for gastric adenocarcinoma at our Hospiat during 2012-2023. Data was collected on basic demographic characteristics, BMI, operating room time, number of dissected lymph nodes, length of hospitalization, intra and postoperative complications. ThE analysis aimed at comparison of ORT, LOH and number of dissected LN between robotic, laparoscopic and open gastrectomies. Non parametric statistical tests MW and Kruskal-Wallis were used for comparisons.

Results: Study included 65 patients after total gastrectomies, 25 of them robot and 52 partial gastrectomies, 34 of them robotic. Age, gender and BMI were similar between patients who underwent robotic, laparoscopic and open procedures. Median length of hospitalization for robotic total gastrectomy was 4.5 days and it was significantly shorter than both laparoscopic total gastrectomy 7.0 days ($p=0.003$) and open total gastrectomy 9.0 days ($p<0.001$). Similar significant differences in LOH between the groups were observed among patients who underwent partial gastrectomy, but the comparison between robotic and laparoscopic procedures was limited due to small numbers of LPG. Median ORT was significantly longer among robotic gastrectomies compared to open, the difference was 64 min in total gastrectomy group and 145 min in partial gastrectomy group ($p<0.001$ for both differences), but the difference in ORT between laparoscopic and robotic procedures were smaller and non-significant. The number of dissected LN was similar between the 3 procedures in total gasrectomies. In partial gastrectomies, the number of dissected LN was even higher among both laparoscopic and robotic gastrectomies compared to open ($p<0.001$).

Conclusion(s): da Vinci robotic assisted total and partial gastrectomies for gastric adenocarcinoma are associated with oncologically adequate lymphadenectomy and faster patient recovery, but longer operating time.

Keyword(s): gastric, cancer

REAL WORLD DATA OF PERIOPERATIVE FLOT IN RESECTABLE GASTRIC CANCER

Ana Sofia Cavadas, Alexandra Antunes, Hugo Rios, Dina Luís, António Gomes, Joaquim Costa Pereira

Hospital de Braga, Hospital de Braga, Braga, Portugal

Background and Purpose: In patients diagnosed with locally advanced resectable gastric cancer, perioperative chemotherapy has improved overall survival (OS), with the FLOT regimen being the standard of care. The aim of this study was to evaluate disease-free survival (DFS) and OS in patients with gastric cancer who underwent perioperative chemotherapy with FLOT in a real-life context.

Material and Methods: This is a retrospective observational study that included adult patients with gastric cancer who underwent perioperative chemotherapy between January 2018 and December 2020. Kaplan-Meier curves were used to evaluate DFS and OS.

Results: During the study period, 54 patients were proposed for perioperative chemotherapy with FLOT, but only 47 completed at least one cycle pre- and post-operatively. The mean age at diagnosis was 59.3 (SD 8.1) years, and 61.7% were male. Regarding staging, 51.1% and 25.5% were in stages II and III, respectively. Laparotomy was the surgical approach in 70.2% of patients, and 95.7% of resections were R0. About 21% of patients had a complete pathological response. With a median follow-up time of 27.1 (IQR 19.5) months, the median DFS and OS have not yet been reached (74.5% without evidence of recurrence and 83.0% alive at the time of study completion). In the group with a complete pathological response, there was no significant difference in OS and DFS (p=0.482 and p=0.687, respectively). There were more adverse events of higher severity in the postoperative chemotherapy cycles, with a different toxicity profile (more episodes of nausea/vomiting in cycles 1-4 and more episodes of neutropenia in cycles 5-8).

Conclusion(s): Our study shows a higher percentage of complete pathological response than reported in the FLOT4-AIO study (21.7% versus 17%), although not demonstrating a benefit in DFS or OS at this time.

Keyword(s): Gastric cancer, Perioperative chemotherapy, FLOT, Survival

SESSION: POSTER
BARIATRIC SURGERY

LAPAROSCOPIC SLEEVE GASTRECTOMY FOR MORBID OBESITY: INNOVATION OF SURGICAL TECHNIQUE AND SHORT-TERM RESULTS

Isaya Hashimoto, Katsuhisa Hirano, Shozo Hojo, Emi Kanaya, Nana Kimura, Naoya Takeda, Takeshi Miwa, Toru Watanabe, Haruyoshi Tanaka, Shinichi Sekine, Kazuto Shibuya, Isaku Yoshioka, Koshi Matsui, Tomoyuki Okumura, Tsutomu Fujii

University of Toyama, Department of Surgery and Science Faculty of Medicine, Academic Assembly, Toyama, Japan

Introduction: Laparoscopic sleeve gastrectomy (LSG) is an increasingly popular treatment option for morbid obesity and obesity-related health problems.
Objective: We report on the history of the introduction of LSG at our hospital, and review the innovations in surgical techniques and short-term treatment results.

Material and Methods: We retrospectively analyzed the clinical data of 9 cases of LSG for morbid obesity from May 2019 to the present.

Results: Mean age 42 years (21-55), male to female ratio (4:5), mean BMI 45 (36-62), all patients had coexisting type 2 diabetes mellitus, dyslipidemia and fatty liver. Eight patients had sleep apnea, four had hypertension, and three had abdominal surgery (uterine cancer, pancreatic tumor, and cesarean section). Although 5 patients had psychiatric complications, they were judged to be amenable to surgical treatment due to stable disease status. The mean operative time was 180 minutes (107-287). The average blood loss was 6 g (5-15). The mean postoperative hospital stay was 9 days (4-16). No postoperative complications were observed. Diabetic medications could be discontinued or reduced in all patients. At 1 year postoperatively, subcutaneous fat area reduction was 31% (22-45), visceral fat area reduction was 27.2% (11.7-45.8), liver volume reduction was 28.2% (10.6-39), and %TWL was 27%. As a modification of the surgical technique, the stomach was dissected ahead of time in 3 cases. The operation time and postoperative hospital stay were significantly shorter in the group of patients who underwent prior gastrectomy.

Conclusion(s): The results suggest that safe introduction of LSG can be achieved and that short-term outcomes can be improved by improving the surgical technique. We will continue to improve the outcome of bariatric surgery through the maturation of the bariatric surgery team.

Keyword(s): LSG

BARIATRIC SURGERY
CIRCULATING AND TISSUE-BASED BIOMARKERS

SIGNIFICANCE OF VOLATILE ORGANIC COMPOUNDS IN SURGICAL RESECTION TISSUES AND EXHALED BREATH FROM COLORECTAL CANCER PATIENTS

Linda Mezmale[1], Anna Marija Lescinska[1], Andrejs Pcolkins[1], Inga Bogdanova[1], Arnis Kirsners[1], Clemens Ager[2], Pawel Mochalski[2], Marcis Leja[1]

Institute of Clinical and Preventive Medicine, University of Latvia, Riga, Latvia[1] - Institute for Breath Research, University of Innsbruck, Dornbirn, Austria[2]

Background and Purpose: The human body releases numerous volatile organic compounds (VOCs) through tissues and various body fluids, including breath.These compounds form a specific chemical profile that may be used to detect the colorectal cancer-related changes in human metabolism and thereby,to diagnose this type of cancer at an early stage.The main goal of this study was to investigate the volatilomic signatures formed by VOCs released from the cancer and noncancerous tissues obtained during surgery and identify potential volatile biomarkers of this type of cancer. An additional goal was to identify VOCs in the same patients' breath.

Material and Methods: Volatiles released by the tissue samples were captured using solid phase microextraction. Volatilomic signatures of breath samples,tissues were characterized using gas chromatography with mass spectrometric detection.

Results: In total 35 paired tissue samples were analysed.Amongst the volatiles detected, 20 showed consistent differences in their headspace concentrations above the tissue samples. Of these, 11 compounds were found to have reduced emissions from the cancer tissue, and the other 9 showed reduced release from the healthy one. Those VOCs with decreased emission from the tumor samples are 2-propanol, 2-methyl-1-butanol, 3-methyl-1-butanol, 2-methyl-2-butanol, ethyl acetate, 1-propanol, 2-methyl-d-limonene, cyclohexanone, isopropyl acetate, 2-pentanone, 2-butanone. In turn,VOCs increased in colorectal cancer tissues were methyl-thiolacetate, 1-propanol, disulfide, dimethyl, 2-heptanone, 6-methyl-1-pentanol, nonane, 1-octene, dimethyl trisulfide. Additionally, it was found that the following volatile organic compounds in breath are elevated in patients with colorectal cancer: 2-pentanone, 6-methyl-5-hepten-2-one, p-xylene, ethylbenzene, 1-octanol, 1-decanol, 2-ethyl-1-hexanol, decane, dodecane, tridecane, hexanal, decanal. These compounds can be considered as potential biomarkers of colorectal cancer and assist in developing non-invasive tests for the diagnosis of this disease.

Conclusion(s): The concentrations of 20 volatiles were altered by the cancer state.The results of the study suggest that volatile organic compounds emitted by cancerous tissue form the colorectal cancer-specific chemical fingerprints.In turn, the identified exhaled VOCs can be potentially responsible for the breath fingerprint changes related to colorectal cancer.The educated detection of these changes can support the development of non-invasive tests for future early detection of colorectal cancer.

Keyword(s): VOC, colorectal cancer

THE PROGNOSTIC ROLE OF CIRCULATING TUMOUR DNA DETECTED PRIOR TO CLINICAL DIAGNOSIS OF COLORECTAL CANCER IN THE HUNT STUDY

Siv Stakset Brenne[1], Poul Henning Madsen[2], Inge Søkilde Pedersen[2], Kristian Hveem[1], Frank Skorpen[3], Henrik Bygum Krarup[4], Athanasios Xanthoulis[5], Eivor Alette Laugsand[1]

Norwegian University of Technology and Science, Department of Public Health and Nursing, Levanger, Norway[1] - Aalborg University, Molecular Diagnostics, Aalborg, Denmark[2] - Norwegian University of Technology and Science, Department of Clinical and Molecular Medicine, Trondheim, Denmark[3] - Aalborg University, Molecular Diagnostics, Trondheim, Norway[4] - Norwegian University of Technology and Science, Department of Clinical and Molecular Medicine, Levanger, Norway[5]

Background and Purpose: Todays tools for predicting prognosis in colorectal cancer (CRC) patients are suboptimal. This study aimed to determine whether circulating tumour DNA (ctDNA) markers found in plasma before clinical diagnosis of CRC can contribute to the prediction of poor prognosis.

Material and Methods: This observational cohort study included patients diagnosed with CRC within 24 months following participation in the Trøndelag Health Study (HUNT). Known methylated ctDNA biomarkers of CRC, were analysed by PCR in plasma. Poor prognosis (PP) was defined as recurrence at any time or death within 5 years following primary treatment. Candidate predictor variables were identified by Cox regression analyses and combined into a PP risk score. The results were reproduced in an independent validation set of samples.

Results: The 106 patients diagnosed with CRC were randomly divided into a development set (n=81) and a validation set (n=25). Eleven methylated ctDNA markers were independent predictors of overall survival (OS) and 8 for recurrence-free survival (RFS). The independent predictors of PP were age >80 years, CEA >5 µg/l, AJCC Stage IV and the biomarkers BCAT1, FLI1, IKZF1, SEPT9, SDC2, SLC8A1 and WNT5A ($p < 0.05$). When combining the risk factors, a score of ≥6 defined high risk of PP. Model discrimination was good in both the development set (c-statistic 0.84, $p < 0.001$) and the validation set (c-statistic 0.86, $p = 0.005$).

Conclusion(s): Pre-diagnostic ctDNA markers are promising contributors to predicting poor prognosis in CRC, potentially becoming one of the tools in guiding more personalised treatment plans.

Keyword(s) colorectal neoplasms, gastrointestinal diseases, digestive system neoplasms, circulating tumour DNA, DNA methylation, liquid biopsy, biomarkers, colorectal cancer, prognosis

DIGITAL HEALTHCARE AND ARTIFICIAL INTELLIGENCE

USE OF ARTIFICIAL INTELLIGENCE FOR PREDICTING COLON NEOPLASTIC POLYPS

Yoonjae Kim, Dong-kyun Park

Gachon university, Gil medical center, Gastroenterology, Incheon, Republic of Korea

Background and Purpose: Most adenomatous polyps become cancerous over time. The development of colon cancer is associated with genetic factors, environmental factors (e.g., dietary habits and socioeconomic status), and past medical history.

Material and Methods: We analyzed the basic medical information of patients using a deep learning method, with the goal of predicting the probability of colon polyps. Electronic medical records, along with colonoscopy and pathology data, were preprocessed and analyzed.

Results: In total, 51,147 patient records were included in this study. The mean age of the patients was 49.8 ± 10.7 years. There were 31,875 (62.3%) males and 19,272 (37.7%) females. The area under the curve values were 0.81 and 0.77 for predicting all neoplastic polyps and high-risk polyps, respectively. The sensitivity and specificity for predicting all neoplastic polyps was 83.3% and 76.5%, respectively.

Conclusion(s): Our colon neoplastic polyp prediction model is effective for predicting colon polyps and could facilitate colon cancer screening.

Keyword(s): Artificial intelligence, Colon polyp, colon cancer

GASTROENTEROLOGY

EFFECTIVENESS AND SAFETY OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR COLORECTAL NEOPLASM IN PATIENTS WITH HIGH CHARLSON COMORBIDITY INDEX

HyunSoo Kim

Chonnam National University Hospital, Internal Medicine, Gwangju, Republic of Korea

Background and Purpose: As life expectancy increases, the colorectal neoplasm is often found accompanied by various underlying diseases. Endoscopic submucosal dissection (ESD) is an effective procedure for removing early colorectal lesions. However, studies on whether ESD can be performed safely and effectively according to various underlying diseases are lacking.

Material and Methods: Patients who underwent ESD for colorectal neoplasms for 6 years at 5 tertiary medical centers were retrospectively analyzed. The presence or absence of each underlying disease was investigated, and the Charlson Comorbidity Index (CCI) score was calculated and analyzed by dividing it into a high CCI group (CCI≥3) and a low CCI group (CCI<3).

Results: A total of 1446 patients were enrolled, of which 140 patients (9.7%) had a CCI of 3 or higher. The high CCI group was older (70.6 vs 64.7, p<0.01) and had a higher proportion of men (70.7% vs 58.7%, p<0.01) than the low CCI group. The high CCI group had a higher incidence of cancer than adenoma compared to the low CCI group (77.9% vs 65.2%, p<0.01). The high CCI group had higher aspirin (25% vs 7%, p<0.01) and clopidogrel (10.7 vs 2.7%, p<0.01) intake rates than the low CCI group. Sedative endoscopy was performed less frequently in the high CCI group than in the lower CCI group (57.9% vs 71.7%, p<0.01).
En-bloc resection rates (90.0% vs 89.3%) and R0 resection rates (75.7% vs 81.2%) were not significantly different between the two groups. There was no significant difference between the two groups in the incidence of perforation, hemorrhage, and electrocoagulation syndrome after ESD. There was no significant difference between the two groups in sedative endoscopy-related complications such as hypotension and desaturation.

Conclusion(s): Even patients with many underlying diseases could receive colorectal ESD relatively safely and effectively.

Keyword(s): Aged, Colon

REAL-WORLD EVIDENCE OF FOLFIRINOX AS A FIRST-LINE SALVAGE TREATMENT IN PRIMARY CHEMOTHERAPY-REFRACTORY BILIARY TRACT CANCER

Jeehoon Kim, Galam Leem, Wonjoon Jang, Jung Hyun Jo, Hee Seung Lee, Moon Jae Chung, Jeong Youp Park, Seung Woo Park, Si Young Song, Seungmin Bang

Yonsei University College of Medicine, Division of Gastroenterology, Department of Internal Medicine, Seoul, Republic of Korea

Background and Purpose: As a subsequent-line therapy for patients with gemcitabine-based primary chemotherapy-refractory biliary tract cancer (BTC), several chemotherapy regimens including FOLFOX, FOLFIRI, Regorafenib, Liposomal irinotecan plus fluorouracil, and FOLFIRINOX are recommended but no standard chemotherapy has not been established, yet. Here, we present real-world evidence for 13 years of experience of FOLFIRINOX as a first-line salvage treatment in patients with primary chemotherapy-refractory BTC.

Material and Methods: From January 2010 to December 2022, 48 patients have experienced FOLFIRINOX as a first-line salvage treatment at our medical center. Eleven patients (22.9%) with extrahepatic cholangiocarcinoma, 11 patients (22.9%) with intrahepatic cholangiocarcinoma, 6 patients (12.5%) with perihilar cholangiocarcinoma, and 20 patients (41.7%) with gallbladder cancer were included. We retrospectively analyzed the efficacy and clinical benefits of FOLFIRINOX.

Results: The overall response rate (ORR) was 8.3% and the disease control rate (DCR) was 52.1%. The median treatment cycles were 4 cycles, and the median duration of treatment was 2.6 months. The ratio of long-term responder (more than 6 months) was 19.1%. With a median follow up of 17.2 months, the median progression free survival and overall survival was 2.4 months and 20.0 months, respectively. Only 2 patients (4.2%) discontinued the chemotherapy due to side effects.

Conclusion(s): Considering the disease control rate and the high ratio of long-term responder, FOLFIRINOX can be considered as an option for the 1st line salvage treatment in patients with primary chemotherapy-refractory biliary tract cancer.

Keyword(s): Biliary tract cancer, gemcitabine-refractory biliary tract cancer, FOLFIRINOX, salvage treatment

EFFECT OF THE ACUTE PANCREATITIS RISK FACTORS IN DIABETES PATIENTS IS DIFFER BY AGE GROUP: A NATIONWIDE POPULATION - BASED STUDY

In Rae Cho[1], Kyung-Do Han[2], Sang Hyub Lee[1], Young Hoon Choi[3], Kwang Hyun Chung[4], Ji Young Kim[5], Myeong Hwan Lee[1], Junyeol Kim[1], Woo Hyun Paik[1], Ji Kon Ryu[1], Yong-Tae Kim[1]

Seoul National University Hospital, Seoul National University College of Medicine, Seoul, Republic of Korea[1] - Department of Statistics and Actuarial Science, Soongsil University, Seoul, Republic of Korea[2] - Seoul St.Mary's Hospital, The Catholic University of Korea, Seoul, Republic of Korea[3] - Uijeongbu Eulji Medical Center, Eulji University School of Medicine, Gyeonggi-do, Republic of Korea[4] - Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Republic of Korea[5]

Background and Purpose: Acute pancreatitis (AP) has various etiologies, and epidemiological studies have reported that diabetes is associated with its occurrence. Several epidemiological features which common in diabetes patients such as gallstone and dyslipidemia could explain the association of diabetes with AP. However, whether there is a difference in effect of risk factors according to age has not yet been clearly investigated. Thus, we aimed to investigate the effects of risk factors on the AP occurrence in different age groups of diabetes patients using a nationwide population-based study.

Material and Methods: We enrolled 2,444,256 diabetes patients who underwent health examinations under the National Health Insurance Service from 2009 to 2012. Body measurements, laboratory findings, lifestyle, hypertension and dyslipidemia status at the time of health check-up were investigated. The occurrence of AP was followed up until 31 December 2018. All patients were categorised by age - young (20–39 years old), middle-aged (40–64 years old), and old (over 65 years old) groups. We estimated the adjusted hazard ratios (aHRs) of risk factors for AP occurrence in each age groups.

Results: During the observation period, 10,360 cases of AP occurred. Gallstone, smoking, alcohol, hypertension, dyslipidemia, and hypertriglyceridemia were significantly related with AP occurrence. The effect of the deterioration of risk factors was markedly increased in young diabetes patients. Compared to the normal serum triglyceride patients (<150 mg/dL), aHRs of severe hypertriglyceridemia (>500 mg/dL) were 1.783 (old), 2.146 (middle-aged), and 7.386 (young), respectively. In addition, aHRs of uncontrolled hypertension (≥ 140 or ≥90mmHg, without anti-hypertensive medication) were 1.103 (old), 1.346 (middle-aged), and 1.922 (young), respectively.

Conclusion(s): In this nationwide population-based study, effects of risk factors on the occurrence of AP were greater in young diabetes patients. To reduce the risk of AP, tighter lifestyle modification and more active medication is needed in young diabetes patients.

Keyword(s): Acute pancreatitis, Diabetes, hypertriglyceridemia

ACUTE PANCREATITIS AS A POSSIBLE CAUSE OF COLONIC PSEUDOLIPOMATOSIS

Jong Jin Hyun, Dongwoo Kim

Department of Internal Medicine, Korea University Ansan Hospital, Ansan-si, Republic of Korea

Background and Purpose: A 65-year-old man presented to the emergency department and was admitted for acute pancreatitis.

Material and Methods: After being discharged from the hospital without any complications from pancreatitis, the patient underwent colonoscopy which showed multiple elevated whitish plaques on transverse colon upon insertion. Biopsy was performed at the plaques and histologic examination revealed empty vacuoles in the lamina propria, similar to adipocytes which is compatible with the colonic pseudolipomatosis.

Results: Colonic pseudolipomatosis is a benign and rare condition. The prevalence is estimated to be 0.02-0.3%. It's etiology remains unclear, but it is considered as a complication of colonoscopy rather than pathologic condition. Some believe that it results from barotrauma such as abrasion, stretching or overinflation of colon, by penetration of luminal gas into the colonic mucosa. Others have suggested that hydrogen peroxide on the surface of channel which is included in disinfectant could be the cause of these lesions. However, colonic pseudolipomatosis was found during insertion of the scope and the patient denied having undergone colonoscopy in the past. Thus, colonic pseudolipomatosis in the present case cannot be ascribed to one of the complications of colonoscopy. It could be possible that acute pancreatitis could have been the cause of development of colonic pseudolipomatosis since this is the only possible pathologic link considering the time sequence.

Conclusion(s): The endoscopic finding is very typical with slightly raised whitish or yellowish plaques that are observed in multiple places or segments of the colon. The histology is also typical with the presence of empty vacuoles measuring 20-240μm in sized and located adjacent to lamina propria. It should be noted that these lesions can be confused with colonic lymphangioma, malakoplakia and lipomatosis.1 However, colonic pseudolipomatosis is a benign lesion and resolvs spontaneously. Therefore correct recognition of these lesions would be necessary to prevent unnecessary examination and over treatment.

Keyword(s): Colonic pseudolipomatosis

PREDICTIVE FACTORS FOR LYMPH NODE METASTASIS AND CLINICAL OUTCOMES IN UNDIFFERENTIATED EARLY GASTRIC CANCER

Sung Soo Kim, Hyun Ho Choi, Seung Ho Sin, Hyung-keun Kim, Sang Woo Kim, Hiun-suk Chae

The Catholic University of Korea, Uijeongbu St. Mary's Hospital, Uijeongbu, Republic of Korea

Background and Purpose: The presence of lymph node metastasis is crucial in treating undifferentiated-type early gastric cancer through endoscopic resection. This study aims to determine the factors that predict successful endoscopic treatment of undifferentiated-type early gastric cancer, and whether clinical outcomes differ between signet ring cell carcinoma (SRC) and poorly differentiated adenocarcinoma (PD).

Material and Methods: Data from 120 patients (88 SRC, 32 PD) who had undergone gastrectomy with D2 lymph-node dissection undifferentiated-type early gastric cancer between January 2013 and December 2021 were retrospectively reviewed. The study analyzed various clinicopathological factors and their associations with the presence of lymph node metastasis to identify risk factors.

Results: The 5-year survival rates for patients with SRC and PD were 98.6% and 87.1%, respectively, with no significant difference between the two groups (P = 0.181). However, lymph node metastasis was found in 9 patients (10.2%) in SRC and 11 patients (34.4%) in PD, a statistically significant difference (P = 0.002). Multivariate logistic regression analysis identified tumor diameter of 2 cm or larger, lymphatic involvement, and PD histology as independent risk factors for lymph node metastasis (P = 0.016, P < 0.001, P = 0.044, respectively).

Conclusion(s): Undifferentiated early gastric cancer with poorly differentiated adenocarcinoma histology, tumor size larger than 2cm, and lymphatic involvement were associated with lymph node metastasis. Given the limited number of cases in the subgroups, more extensive prospective data are required to perform the endoscopic treatment of patients with undifferentiated-type early gastric cancer.

Keyword(s): Early gastric cancer (EGC), Undifferentiated carcinoma, Lymph node metastasis

MICROSATELLITE INSTABILITY ASSOCIATED GASTRIC CANCERS ARE ACCOMPANIED WITH OVER-EXPRESSION OF HUMAN EPIDERMAL GROWTH FACTOR RECEPTOR(HER)-2

Dongbo Shim

The Catholic University of Korea, Department of Internal Medicine, St. Vincent Hospital, The Catholic University of Korea, Su-won, Republic of Korea

Background and Purpose: Microsatellite instability (MSI) associated gastric cancers (GCs) were associated with distinct biologic behaviors, and it means a large burden of mutational risk. The over-expression of human epidermal growth factor receptor (HER)-2 and epidermal growth factor receptor (EGFR) in gastric cancers showed unfavorable prognostic indicator, and the pre-treatment evaluation of MSI and over-expression of HER-2/ EGFR of advanced gastric cancers (AGCs) could be crucial in advanced disease state. However, in early gastric cancers (EGCs), the meaning of MSI, HER-2 and EGFR works in progress.

Material and Methods: A consecutive study was undertaken from March 2020 to March 2022, and we analyzed 326 gastric cancer tissues (152 EGCs; 174 AGCs) from the patients who had received gastrectomy or endoscopic submucosal dissection.

Results: The frequencies of MSI and HER-2 over-expression were 21.8% (71/ 326), and 12.6% (41/ 326), respectively. The frequency of EGFR over-expression was 45.4% (148/ 326). In microsatellite stable (MSS) GCs, the over-expression of HER-2 and EGFR of AGCs was more frequent than EGCs ($P< 0.01$) ($P= 0.03$). In MSI GCs, HER-2 was the more frequently over-expressed than microsatellite stable (MSS) GCs ($P< 0.01$), and this phenomenon was outstanding in MSI EGCs ($P< 0.01$). As for EGFR over-expression, there was no differences between MSI and MSS GCs ($p=0.09$). EGFR independent HER-2 over-expression was the more frequent in MSI GCs ($p<0.01$).

Conclusion(s): Especially in EGCs, MSI GCs had more frequent over-expression of HER-2. Over-expressed HER-2 positivity with EGFR independent manner was typical in MSI GCs, compared with MSS GCs.

Keyword(s): microsatellite instability, gastric cancer, HER-2, EGFR

INGENUITY OF CREATING A GASTRIC TUBE TO PREVENT ANASTOMOTIC LEAKAGE IN GASTRIC TUBE RECONSTRUCTION AFTER SURGERY FOR ESOPHAGEAL CANCER

Yasushi Rino, Toru Aoyama, Hiroshi Tamagawa, Sho Sawazaki, Keisuke Kazama, Tsutomu Sato, Aya Saito, Norio Yukawa

Yokohama City University, Department of Surgery, Yokohama, Japan

Background and Purpose: Gastric tube reconstruction for thoracic esophageal cancer is the most commonly used reconstruction technique in Japan. Considering that the blood flow of the gastric tube is important, we injected ICG intravenously and observed the blood flow with PDE. As a result, we reported that blood flow routes were classified into categories on basis of ICG imaging findings: the gastric wall route, the greater curvature route, and the omentum and splenic hiatal route. We decided to investigate on the preservation or not of this omentum and splenic hiatal route and the occurrence of anastomotic leakage during resection.

Material and Methods: From January 2009 to March 2023, 173 patients who underwent esophagectomy, gastric tube reconstruction, and cervical anastomosis were observed. 147 males and 26 females. Median age 69 years (40-82 years).
Until October 2012 (observation period), 49 cases were observed only, and no policy had been decided whether to preserve the splenic hilum route or not. In 115 cases from November 2012 to November 2021 (conservation period), the policy was to preserve the splenic hilum route in cases where it was observed, and to preserve the adipose tissue in the range where it was observed even when it could not be confirmed. From December 2021 (resection period), the policy was changed to resection of the splenic hilum route, which was performed in 9 cases. A 25 mm circular stapler was used for anastomosis in all cases. Anastomotic leakage assessment was confirmed by contrast imaging.

Results: The incidence of anastomotic leakage was 26.5% (13/36) in the observation period, 41.7% (48/67) in the preservation period, and 0% (0/9) in the resection period.

Conclusion(s): The omentum and splenic hilum route of the reconstructed gastric tube may be exacerbating the blood flow in the reconstructed gastric tube, and its resection may prevent anastomotic leakage.

Keyword(s): Esophageal cancer, anastomotic leakage, blood flow route

SEVERITY AT DIAGNOSIS AND RAPID DETERIORATION OF DIABETES ARE ASSOCIATED WITH RISK OF PANCREATIC CANCER AMONG PATIENTS WITH NEW-ONSET DIABETES: A 15-YEAR NATIONWIDE SAMPLE COHORT STUDY

Moon Jae Chung, Wonjeong Chae, Minyoung Lee, Sung-in Jang

Severance Hospital, Yonsei University, Seoul, Republic of Korea

Background and Purpose: Newly diagnosed diabetes mellitus (NDD) is known to increase the risk of pancreatic cancer most of these studies measure only the presence or absence of diabetes mellitus (DM) without taking into consideration the severity at the time of diagnosis or changes in severity of DM. We aimed to analyze the risk of pancreatic cancer according to disease severity at diagnosis and changes in severeity of DM.

Material and Methods: This nationwide cohort study included a total of 283,445 individuals after applying 2 years wash-out period provided by the Korean National Health Insurance System between 2002 and 2019. Individuals who had The International Statistical Classification of Diseases and Related Health Problems, 10th of E11 were classified as individuals with DM and within those DM patients, depending on the patient's medication prescription history, the patient was categorized into three groups: no medication, oral medication, and insulin.

Results: During 2,143,680 person-years (PYs) of follow-up, 1,455 incident pancreatic cancer cases were identified (incidence rate, 67.87 per 100,000 PYs). Subjects prescribed with a higher intensity of antidiabetic medication was associated with a higher risk of incident pancreatic cancer compared to the subjects without diabetes at cohort entry (aHR 1.49, 1.76, and 3.02 for the no medication, oral medication, and insulin use group, respectively). Subjects with increased intensity of antidiabetic treatment after 6 months from the initial diagnosis was associated with an increased risk of pancreatic cancer compared to subjects with unchanged or decreased intensity of antidiabetic treatment.

Conclusion(s): In this study, severity at the time of diagnosis and progression of DM was associated with a risk of pancreatic cancer, suggestting that rapid progression of NDD, as well as the initial state of DM severity, should be clinical factors to consider referral to a specialist for pancreatic cancer screening.

Keyword(s): Pancreatic Cancer, High Risk Group, Newly Diagnosed Diabetes Mellitus, Screening

A CASE REPORT OF GIANT PANCREATIC PSEUDOCYST FOLLOWING CHRONIC PANCREATITIS

Ivan Vulić[(1)], Marko Nikolić[(2)], Mario Živković[(2)], Filip Babić[(2)], Ivan Budimir[(2)], Neven Baršić[(2)]

General hospital Pula, Department of gastroenterology, Pula, Croatia[(1)] - University Hospital Centre „Sestre Milosrdnice“ Zagreb, Croatia, Department of gastroenterology, Zagreb, Croatia[(2)]

Background and Purpose: Pancreatic pseudocysts are being diagnosed more frequently because of the increasing usage of imaging techniques. A pseudocyst with the major diameter of 10 cm is termed as a giant cyst. Asymptomatic pseudo-cysts up to 6 cm in diameter can be safely observed and monitored without intervention, but larger and symptomatic pseudocysts require intervention.

Material and Methods: Physical and laboratory examinations were normal except painful abdomen in the periumbilical region and slighlty elevated pancreatic enzimes. Gastroenterological evaluation was done using endoscopic procedures and imaging methods (CT, EUS-FNA) and later pancreatico-duodenectomy was done.

Results: A 37 year-old female, was presented in emergency department with progressive abdominal pain and vomiting. Contrast enhanced CT scan of the abdomen showed a chronic calcifying pancreatitis with a giant septated cystic lesion in the head of the pancreas dimensions 13 x 9,4 x 9,9 cm and consequent dilatation of the main pancreatic duct, radiologically suspicious for mucinous cystic neoplasm. Immediately afterwards an endoscopic ultrasound with FNA was performed, samples were sent for biochemical and cytological analysis. Citology revealed smaller cluster of ductal epithelial cells, cubic to low cylindric, with characteristics of mild atypia, an amorphous substance that is mucinous in places(mucinous cyst may be considered).Biochemical analysis evaluated very high values of amylase and tumor markers CEA and Ca 19-9. The simptoms persisted and pancreaticoduodenectomy was performed. Later on, the pathohistology of the resected tissue were in favor of the pseudocyst. The patient is regularly monitored in an outpatient setting and reports an absence of symptoms since the resection.

Conclusion(s): Our case of a patient with giant non-neoplastic pancreatic pseudocyst was diagnosed by combination of imaging and EUS FNA tissue sampling. It is relative rare entity with very few documented case reports.

Keyword(s): Pseudocyst, EUS FNA, Abdominal pain, CT

EXPLORATION OF MALIGNANT CHARACTERISTICS IN NEOADJUVANT CHEMOTHERAPY-RESISTANT RECTAL CANCER, FOCUSING ON EXTRAMURAL LESIONS

Shunsuke Kubota[(1)], Takuya Miura[(1)], Taiichi Wakiya[(1)], Tadashi Yoshizawa[(2)], Shintaro Goto[(2)], Hajime Morohashi[(1)], Yoshiyuki Sakamoto[(1)], Yota Tatara[(3)], Hiroshi Kijima[(2)], Kenichi Hakamada[(1)]

Hirosaki University Graduate School of Medicine, Department of Gastroenterological Surgery, Hirosaki City, Japan[(1)] - Hirosaki University Graduate School of Medicine, Department of Pathology and Bioscience, Hirosaki City, Japan[(2)] - Hirosaki University Graduate School of Medicine, Department of Stress Response Science, Center for Advanced Medical Research, Hirosaki City, Japan[(3)]

Background and Purpose: Extramural vascular invasion (EMVI) and tumor deposits (TD) are poor prognostic factors in rectal cancer (RC), especially when resistant to neoadjuvant chemotherapy (NAC). We aimed to define differential expression in NAC responders and non-responders with concomitant EMVI and TD.

Material and Methods: From 52 RC surgical patients, post-NAC resected specimens were extracted of which cases with residual EMVI and TD (NAC-resistant) and without (NAC-effective) comprise two groups. Proteomic analysis was conducted to define differential protein expression in the two groups. To validate the findings, immunohistochemistry was performed in another cohort that included 58 RC surgical patients. Based on the findings, chemosensitivity and prognosis were compared.

Results: The NAC-resistant group was associated with a lower 3-year disease-free survival rate than the NAC-effective group ($p = 0.041$). Discriminative proteins in the NAC-resistant group were highly associated with the sulfur metabolism pathway. Among these pathway constituents, selenium-binding protein 1 (SELENBP1) expression in the NAC-resistant group decreased to less than one-third of that of the NAC-effective group. Immunohistochemistry in another RC cohort validated the relationship between decreased SELENBP1 and poorer NAC sensitivity, consistently, in both pre-NAC biopsy and post-NAC surgery specimens. Furthermore, decrease in SELENBP1 was associated with a lower 3-year disease-free survival rate ($p = 0.047$).

Conclusion(s): We defined one of the differentially expressed proteins, in NAC-responders and non-responders, concomitant with EMVI and TD. SELENBP1 was suspected to contribute to NAC resistance and poor prognosis in RC.

Keyword(s): rectal cancer, neoadjuvant chemotherapy, extramural vascular invasion, tumor deposit, selenium-binding protein 1

TUMOR BIOLOGY CHANGES IN RECURRENT OR PROGRESSED HEPATOCELLULAR CARCINOMA: NECESSITY OF A FOLLOW-UP BIOPSY

Joong-Won Park, Jae Won Cho, Hyerin Lee, Yuri Cho, Bo Hyun Kim

National Cancer Center Korea, Center for Liver and Pancreatobiliary Cancer, Goyang, Republic of Korea

Background and Purpose: Treatment resistance due to tumor heterogeneity is one of the reasons for the poor prognosis of hepatocellular carcinoma (HCC). Recurrence or progression could originate from cells that do not respond to treatment. This study hypothesized that there may be cases in which tumor biologic changes occur among recurrent HCCs after the initial response.

Material and Methods: Among 9867 patients diagnosed with HCC radiologically or pathologically and treated at the National Cancer Center Korea from 2002 to 2021, those who underwent follow-up biopsies (FUBx) because of recurrence or progression with atypical imaging findings were retrospectively evaluated.

Results: In total, 108 patients underwent follow-up biopsies, and 34 of them (31.5%) were pathologically diagnosed with carcinoma other than HCC. Their mean age was 67.9 years, 31 (91.2%) were male, and 79.4% were positive for the hepatitis B virus. The initial modified UICC tumor stage was 1, 13, 5, and 19 for I, II, III, and IV, respectively. Before FUBx, 30, 13, 1, and 1 patients received transarterial chemoembolization, systemic therapy (sorafenib, regorafenib, durvalumab), radiation therapy, and radiofrequency ablation, respectively. The interval between initial diagnosis and a FUBx was a median of 44.2 (range: 2–129) months. The FUBx showed 8 cases of poorly differentiated adenocarcinoma, 25 of poorly differentiated carcinoma, and one of sarcomatoid carcinoma. The serum alpha-fetoprotein level was 367.2 ng/ml initially and 394.5 ng/ml at the FUBx. The median survival time was 53.3 (range: 2–204) months.

Conclusion(s): When recurrence or poor response is observed after initial treatment, and the imaging findings differ from the typical imaging hallmark of HCC, a follow-up biopsy may be needed to confirm pathologic changes in the tumor.

Keyword(s): HCC, treatment resistance, biopsy, recurrence, progression

PNEUMOPERITONEUM IS NOT ALWAYS AN INDICATION FOR LAPAROTOMY: REPORTING A CASE AND REVIEW OF THE LITERATURE

Mahim Koshariya, Amey Jain, Vijay Tekam, Arshad Khan, Sharath AP

Department of General Surgery, Gandhi Medical College, Hamidia Hospital, Bhopal, 462001, India

Background and Purpose: Pneumoperitoneum or air within the abdominal cavity is frequently the harbinger of serious abdominal pathology and is most commonly the result of a visceral perforation and usually presents with signs of acute peritonitis requiring an urgent surgical intervention. Non-surgical pneumoperitoneum is an uncommon entity related to intra-thoracic, intra-abdominal, gynecologic, iatrogenic and other miscellaneous causes, and is usually managed conservatively. An appreciation of this condition and its likely etiological factors should improve awareness and possibly reduce the imperative to perform emergency laparotomy on an otherwise well patient with an unexplained pneumoperitoneum.

Material and Methods: This is a retrospective review of a patient with Non-Surgical Pneumoperitoneum who was treated in the Department of General Surgery, Gandhi Medical College & Hamidia Hospital, Bhopal in March 2023.

Results: We present the case of an idiopathic spontaneous pneumoperitoneum. A 50 year old Indian man presented with the only complaints of acute abdominal pain. Patient had acute onset abdominal pain for the past 3 days. Examination findings were unremarkable and no signs of peritonitis were found during physical examination. The laboratory investigations revealed a complete hemogram within normal limits and the chest X-ray showed intraperitoneal air below diaphragm bilaterally. The Computed Tomography scan was suggestive of Pneumoperitoneum, minimal fluid in the peritoneal & pelvic cavity, fecal loaded prominent large bowel loops with mottled air and mild hepatomegaly. His medical history was unremarkable. The patient was not a smoker or an alcohol consumer. Patient was managed conservatively and after a remarkable improvement the patient was discharged on 5th post-admission day, although the cause of pneumoperitoneum remained obscure.

Conclusion(s): A detailed & meticulous history and physical examination combined with the appropriate laboratory investigations, radiological/imaging techniques and a knowledge of the less frequent causes of pneumoperitoneum can possibly contribute towards refraining from unnecessary operations.

Keyword(s): Pneumoperitoneum, Non-surgical pneumoperitoneum, Spontaneous pneumoperitoneum, Free air, Laparotomy

HPB (SURGERY, ONCOLOGY AND ENDOSCOPIC INTERVENTION)

A REAL-WORLD ANALYSIS OF NANOLIPOSOMALIRINOTECAN WITH 5-FLUOROURACIL AND FOLINIC ACID AS THIRD- OR LATER-LINE THERAPY IN PATIENTS WITH METASTATIC PANCREATIC ADENOCARCINOMA

Jikon Ryu

Department of Internal Medicine and Liver Research InstituteSeoul National University Hospital, Seoul National University College of Medicine, Seoul, Republic of Korea

Background and Purpose: Nanoliposomal encapsulation of irinotecan (nal-IRI) with 5-fluorouracil and leucovorin (5-FU/LV) has shown a survival benefit for gemcitabine-pretreated patients with metastatic pancreatic adenocarcinoma (mPAC). The aim of this study was to evaluate the effectiveness and safety of nal-IRI with 5-FU/LV for use beyond second-line treatment after standard frontline therapy for mPAC.

Material and Methods: This multicenter, retrospective, non-comparative observational study included mPAC patients who received nal-IRI plus 5-FU/LV as third- or later-line therapy after disease progression on first-line FOLFIRINOX (FFX) or gemcitabine plus nab-paclitaxel.

Results: In all, 128 patients who received nal-IRI plus 5-FU/LV beyond second-line treatment between October 2017 and July 2021 were analyzed. Most patients (82%) received nal-IRI plus 5-FU/LV as a third-line treatment. The median overall survival (OS) was 4.9M and the median progression-free survival (PFS) was 2.4M. Patients with better Eastern Cooperative Oncology Group (ECOG) performance status experienced significantly longer OS (ECOG 0, 8.7M; ECOG 1, 4.8M; ECOG 2, 2.9M; p<0.001) and PFS (3.9M; 2.1M; 1.5M;p=0.019). Patients with time to progression (TTP) less than 7 months on FFX treatment had worse OS and PFS compared to patients without prior irinotecan or with TTP greater than or equal to 7months (p=0.053 and p=0.002, respectively). The most common adverse events were neutropenia (56%) and anemia (51%).

Conclusion(s): Our real-world data indicated that nal-IRI plus 5-FU/LV can be effective not only as second-line therapy, but also as third-line or later-line treatment in selected patients. NalIRI plus 5-FU/LV may be particularly beneficial for the survival of patients that maintain good general condition or those with favorable prior experience to irinotecan.

Keyword(s): antineoplastic agents, carcinoma, irinotecan, liposomes, pancreatic ductal, survival

A RARE CASE OF MALPOSITION OF THE COMMON BILE DUCT INTO THE JEJUNUM WITH SEPARATED PANCREATIC DUCT

Jong Jin Hyun

Department of Internal Medicine, Korea University Ansan Hospital, Ansan, Republic of Korea

Background and Purpose: A 36 year-old female presented with right upper quadrant pain and jaundice. Laboratory examination at admission showed liver function enzyme elevation and abdominal CT scan showed 7mm sized calcified stone on distal common bile duct (CBD) along with multiple stones in the gallbladder.

Material and Methods: Endoscopic retrograde cholangiopancreatography (ERCP) was attempted but failed to cannulate the bile duct and only kept on being cannulated into pancreatic duct. After cannulation failure, she underwent percutaneous transhepatic biliary drainage (PTBD) to resolve jaundice and cholangitis. ERCP was performed again several days later but bile duct cannulation was still not possible. Therefore, she underwent percutaneous stone removal (PSR) followed by laparoscopic cholecystectomy.

Results: After cholecystectomy, ERCP was attempted once again but bile duct cannulation was still not feasible. Contrast dye was injected via PTBD tube but oddly, no dye was seen coming out from the ampullary orifice. Guidewire was thus inserted via PTBD tube and passed through the ampullary orifice into the small bowel under fluoroscopy. However, the guidewire could not be observed anywhere in the vicinity of the ampullary orifice on endoscopic examination. When fluoroscopic images were carefully reviewed, it could be seen that the guidewire which was inserted into the bile duct and advanced through the bile duct orifice out into the small bowel was actually located in the jejunum instead of duodenum.

Conclusion(s): The ampulla of Vater is typically located in the second part of the duodenum but can occasionally be located in other parts of the duodenum. However, bile duct draining into jejunum is a very rare anomaly. What makes this case more unique is the separation of biliary system and pancreatic system. The present case is a very rare case of malposition of the CBD that drains into jejunum with separated pancreatic duct draining into duodenum.

Keyword(s): malposition, common bile duct, insertion into jejunum

THE ROLE OF A TISSUE FROM THE SELF-EXPANDABLE METAL STENTS

Min Kyu Jung[(1)], *Byung Ik Jang*[(2)]

Kyungpook National University School of Medicine, Department of Internal Medicine, Daegu, Republic of Korea[(1)] - Yeungnam University College of Medicine, Department of Internal Medicine, Daegu, Republic of Korea[(2)]

Background and Purpose: Biliary strictures can have several benign or malignant causes. We attempted to determine the usefulness of establishing a diagnosis using self-expandable metal stents (SEMS) in a prospective series of patients with suspected malignant biliary obstruction.

Material and Methods: Data of patients who underwent SEMS removal from August 2016 to December 2022 were collected. During this period, 130 patients underwent endobiliary biopsy and SEMS insertion and removal.

Results: One hundred-thirty consecutive patients (mean age, 65 years; range 53–90 years) were enrolled, and of these, 93 were male and 42 were female. A final diagnosis was established using biopsy specimens in 87 cases (66.9%) and surgical specimens in 16 cases (12.3%), with 27 cases (20.7%) diagnosed on radiological follow-up. The final diagnoses included malignancy in 79 cases (60.8%) and benign stricture in 51 cases (39.2%). Endobiliary biopsy had a sensitivity and specificity of 44.1% and 95.2%, whereas SEMS cytology had a sensitivity and specificity of 52.9% and 100%, respectively. Combining endobiliary biopsy and/or SEMS cytology yielded a sensitivity and specificity of 73.5% and 95.2%, respectively. (1) The use of biopsy results alone as a diagnostic tool yielded an area under the receiver operating characteristic curve (AUC) of 0.70 (0.60–0.79). (2) The addition of SEMS to the biopsy results yielded an AUC of 0.86 (0.78–0.94). (3) The addition of CA 19-9 levels to the biopsy results yielded an AUC of 0.81 (0.71–0.94). (4) Combining the endobiliary biopsy results, SEMS tissues, and CA 19-9 levels yielded the best diagnostic accuracy, with an AUC of 0.90 (0.83–0.98).

Conclusion(s): Detection of biliary obstruction using the combination strategy was better than the diagnostic results based on biopsy alone according to recent 3-year data. Our study suggested that SEMS removal could help establish a diagnosis of suspected malignant biliary obstruction.

Keyword(s): Endobiliary biopsy, Self-expandable metal stent, biliary stricture

PROGNOSTIC FACTORS IN CONVERSION SURGERY FOLLOWING NAB-PACLITAXEL WITH GEMCITABINE AND SUBSEQUENT CHEMORADIOTHERAPY FOR UNRESECTABLE LOCALLY ADVANCED PANCREATIC CANCER: RESULTS OF A DUAL-CENTER STUDY

Emi Kanaya[(1)], Takamichi Igarashi[(1)], Suguru Yamada[(2)], Kenta Murotani[(3)], Hayato Baba[(1)], Hideki Takami[(2)], Isaku Yoshioka[(1)], Kazuto Shibuya[(1)], Haruyoshi Tanaka[(1)], Katsuhisa Hirano[(1)], Toru Watanabe[(1)], Yoshihiro Shirai[(1)], Ryo Muranushi[(1)], Nana Kimura[(1)], Ayano Sakai[(1)], Takeshi Miwa[(1)], Shinichi Sekine[(1)], Isaya Hashimoto[(1)], Shozo Hojo[(1)], Koshi Matsui[(1)], Tomoyuki Okumura[(1)], Yasuhiro Kodera[(2)], Tsutomu Fujii[(1)]

University of Toyama, Department of Surgery and Science, Faculty of Medicine, Academic Assembly, Toyama, Japan[(1)] - Nagoya University Graduate School of Medicine, Department of Gastroenterological Surgery (Surgery II), Nagoya, Japan[(2)] - Graduate School of Medicine, Kurume University, Biostatistics Center, Kurume, Japan[(3)]

Background and Purpose: In pancreatic ductal adenocarcinoma (PDAC), only radical surgery improves long-term survival. We focused on surgical outcome after induction gemcitabine along with nab-paclitaxel (GnP) and subsequent chemoradiotherapy (CRT) with S-1 administration for unresectable locally advanced (UR-LA) PDAC.

Material and Methods: We retrospectively analyzed 144 patients with UR-LA PDAC between 2014 and 2020. The first-line regimen of induction chemotherapy was GnP for 125 of the 144 patients. Of the 125 patients who received GnP, 41 who underwent radical resection after additional preoperative CRT were enrolled. We evaluated the prognostic factors for this treatment strategy.

Results: The median length of preoperative GnP was 8.8 months, and 30 (73%) patients had normalized CA19-9 levels. R0 resection was achieved in 36 (88%) patients. Postoperative major complications of ≥Clavien–Dindo grade IIIa developed in 16 (39%) patients. With a median follow-up of 35.2 months, 14 (34%) patients developed distant metastasis postoperatively. Using the Kaplan-Meier method, prognostic analysis of the 41 cases revealed the 3-year overall survival rate (OS) was 77.4% and the 5-year OS was 58.6%. In univariate analysis, length of preoperative GnP (≥8 months), CA19-9 normalization, and good nutritional status at operation (prognostic nutritional index ≥41.7) were significantly associated with favorable prognosis. Multivariate analysis revealed CA19-9 normalization (HR 0.23; p = 0.032) and prognostic nutritional index ≥41.7 (HR 0.05; p = 0.021) were independent prognostic factors.

Conclusion(s): For surgical outcome after induction GnP and subsequent CRT for UR-LA PDAC, CA19-9 normalization and maintenance of good nutritional status during treatment until surgery were important for prolonged prognosis.

Keyword(s): Conversion Surgery, Unresectable Locally Advanced Pancreatic Cancer

OPTIMAL PREOPERATIVE MULTIDISCIPLINARY TREATMENT IN BORDERLINE RESECTABLE PANCREATIC CANCER: RESULTS OF A DUAL-CENTER STUDY

Nana Kimura[1], Suguru Yamada[2], Kenta Murotani[3], Isaku Yoshioka[1], Kazuto Shibuya[1], Fuminori Sonohara[2], Katsuhisa Hirano[1], Toru Watanabe[1], Hayato Baba[1], Kosuke Mori[1], Takeshi Miwa[1], Mitsuro Kanda[2], Masamichi Hayashi[2], Isaya Hashimoto[1], Koshi Matsui[1], Tomoyuki Okumura[1], Yasuhiro Kodera[2], Tsutomu Fujii[1]

University of Toyama, Department of Surgery and Science, Faculty of Medicine, Academic Assembly, Toyama, Japan[1] - Nagoya University Graduate School of Medicine, Department of Gastroenterological Surgery (Surgery II), Nagoya, Japan[2] - Kurume University, Biostatistics Center, Graduate School of Medicine, Kurume, Japan[3]

Background and Purpose: The objective of this study was to investigate the optimal neoadjuvant therapy (NAT) for borderline resectable pancreatic cancer invading the portal vein (BR-PV) or abutting major arteries (BR-A).

Material and Methods: We retrospectively analyzed 88 patients with BR-PV and 111 patients with BR-A. For each BR-PV and BR-A, we analyzed the following points. 1) Comparison of prognosis of upfront surgery vs. NAT, 2) Comparison of regimens in patients who underwent NAT, 3) Prognostic factors in patients who underwent resection after NAT.

Results: 1) In BR-PV patients who underwent upfront surgery (n = 46)/NAT (n = 42), survival was significantly better in the NAT group (3-year overall survival (OS): 5.8%/35.5%, p = 0.004). In BR-A patients who underwent upfront surgery (n = 48)/NAT (n = 63), survival was also significantly better in the NAT group (3-year OS:15.5%/41.7%, p < 0.001). 2) The prognosis tended to be better in patients who received newer chemotherapeutic regimens, such as FOLFIRINOX and gemcitabine with nab-paclitaxel in each BR-PV and BR-A patients. The R0 rate was significantly higher (100%) when radiotherapy was used in combination with chemotherapy, regardless of the chemotherapy regimen. 3) In 36 BR-PV patients who underwent surgery after NAT, univariate analysis revealed that normalization of tumor marker levels (p = 0.028) and preoperative high prognostic nutritional index (PNI) (p = 0.022) were significantly associated with a favorable prognosis. In 39 BR-A patients who underwent surgery after NAT, multivariate analysis revealed that preoperative PNI > 42.5 was an independent prognostic factor (HR: 0.15, p = 0.014).

Conclusion(s): NAT using newer chemotherapy is essential for improving the prognosis of BR pancreatic cancer. These findings suggest that prognosis may be prolonged by maintaining good nutritional status during preoperative treatment.

Keyword(s): pancreatic cancer, borderline resectable, neoadjuvant treatment, chemoradiotherapy, prognostic nutritional index

USEFULLNESS OF ENDOSCOPIC REMOVAL OF OCCLUDED FULLY COVERED SELF-METALLIC STENT IN PATIENTS WITH MALIGNANT DISTAL BILIARY OBSTRUCTION

Jae Hee Cho[1], Sung Ill Jang[1], Seeyoung Lee[1], Yoon Jae Kim[2]

Gangnam Severance Hospital, Yonsei University College of Medicine, Department of Internal Medicine, Seoul, Republic of Korea[1] - Gachon University College of Medicine. Gil Medical Center, Department of Internal Medicine, Seoul, Republic of Korea[2]

Background and Purpose: In patients with unresectable malignant distal biliary obstructions (MDBO), frequent stent reintervention is often required due to short stent patency and improved survival related to advances in anticancer treatment. Therefore, we aimed to compare the second stent patency according to the removal of the primary full covered self-expandable metallic stents (FC-SEMS) in patients with MDBO.

Material and Methods: Patients with MDBO who underwent primary FC-SEMS removal were retrospectively enrolled between May 2015 and February 2022 in Korea. A total of 127 patients were included in the analysis, with 61 patients in the stent exchange group and 76 patients in the stent-in-stent(SIS) group. The analysis was further stratified by stent type (covered, uncovered, and plastic stent(PS)), with both covered and uncovered stents being evaluated.

Results: The median patency of second stents was 163, 62, 132, and 75 days for Exchange-SEMS, Exchange-PS, SIS-SEMS, and SIS-PS, respectively. Second SEMSs had significantly longer patency than PS (p=0.034). In the analysis of SEMS, the median patency of second stents was 168, 153, 117, and 158 days for Exchange-Covered, Exchange-Uncovered, SIS-Covered, and SIS-Uncovered, respectively. There was no significant difference in terms of secondary stent patency, regardless of SEMS type or stent removal. However, overall survival time was 593, 418, 344, and 477 days. respectively, with significant differences (p=0.036). In a multivariate analysis, PS had worse second stent patency (HR 3.092, CI 1.554-6.151). Patients with ampulla of Vater cancer had better overall survival time (HR 0.134, CI 0.017-1.071).

Conclusion(s): SEMS are a preferable option for secondary stenting, as they exhibit superior stent patency compared to PS. We found no significant difference in secondary stent patency outcomes between the different types of SEMS. Additionally, stent exchange with a covered stent may better overall survival outcomes than the stent-in-stent approach. These findings hold important clinical implications for the management of MDBO.

Keyword(s): MDBO, FC-SEMS

TOTAL PANCREATECTOMY

Vassil Mihaylov, Tsvetan Trichkov, Radoslav Kostadinov, Mariana Yoncheva, Nikola Vladov

Military Medical Academy, HPB and Transplant Surgery, Sofia, Bulgaria

Background and Purpose: Pancreatic procedures remains a challenge in modern surgery. The incidence of pancreatic leak is still high even in specialized centres and is related with postoperative morbidity and mortality. Resection of the whole pancreas eliminate the risk of related complications and achieve clear resection margins. On the other hand, the postoperative control of endocrine function and related medical complications is challenging.
The aim of the study is to compare short and long-term results after total pancreatectomy and partial pancreatic resection (proximal and distal).

Material and Methods: For the period 2004-2022, 794 consecutive pancreatic resections (645 proximal and 149 distal) were performed in the unit. Primary total pancreatectomy was performed in 41 patients (5%), and this group did not include patients with totalization of pancreatic resection after previous partial resection of the pancreas. Indication for extended resection were achieving clear resection margins or difficult pancreatic anastomosis. Postoperative complications and outcome were analysed and compared for both groups.

Results: The clinically relevant postoperative complications - 17.1% in total pancreatectomy group versus 15.9% in partial pancreatic resection group, were not statistically significant (p=0.75). The overall survival rate was the similar - 24.8 vs 22.7 months (p=0.225).

Conclusion(s): Total pancreatectomy can have significant long-term effects on digestion and blood sugar regulation. With the increase of experience in pancreatic surgery and better postoperative endocrine monitoring and control, the frequency of complications after total pancreatectomy has decreased and the indications for its performance have expanded.

Keyword(s): Total pancreatectomy, pancreatic cancer, complications

DIAGNOSTIC ROLE OF SINGLE-OPERATOR CHOLANGIOSCOPY FOR MAPPING OF EXTRAHEPATIC CHOLANGIOCARCINOMA

Min Je Sung, Chang-Il Kwon, Kwang Hyun Ko

Department of Gastroenterology, CHA Bundang Medical Center, CHA University, Seongnam, Republic of Korea

Background and Purpose: A recent clinical outcome of nab-paclitaxel plus gemcitabine-cisplatin reported prolonged survival and high rate of conversion to surgery in asian patients with advanced biliary tract cancer in a real-world setting. The ability of single-operator cholangioscopy (SOC) to detect the extrahepatic cholangiocarcinoma (CCC) in intraductal lesions is becoming more important to determine extent of surgery. The aim of this study was to evaluate the role of SOC for mapping of extrahepatic CCC.

Material and Methods: We reviewed the data of patients with nab-paclitaxel plus gemcitabine-cisplatin for the management of extrahepatic CCC, who underwent SOC with SPYGLASS Direct Visualization System for preoperative evaluation, between June 2020 and August 2022, in a single center.

Results: Thirty-eight patients were included, 68 % male with a median age of 64 years. Thirty (79%) were diagnosed with perihilar CCC, 6 (16%) with distal CCC, and 2 (5%) with intraductal papillary neoplasm of the bile duct. Intraductal evaluation with SOC altered disease extension defined by previous image findings in 14 (37%) patients. In fourteen patients, five patients (36%) changed to less extensive surgery, four patients to conversion surgery, four patients to avoidance of surgery, and one to more extensive surgery. Twenty-seven (71%) underwent the surgery. In twenty-seven patients, the accuracy of visual impression was 93%, confirmed by the surgical pathology report.

Conclusion(s): Using SOC for evaluating intraductal spread in potentially resectable extrahepatic cholangiocarcinoma can detect more precise and change surgical management.

Keyword(s): Single-operator cholangioscopy, Cholangiocarcinoma, SpyGlass

A STUDY OF RISK FACTORS RELATED TO NEW DIABETES MELLITUS AFTER PANCREATECTOMY

Keinosuke Ishido, Hiroaki Fujita, Norihisa Kimura, Hayato Nagase, Yusuke Wakasa, Kenichi Hakamada

Hirosaki University Graduate School of Medicine, Gastroenterological Surgery, Hirosaki, Japan

Background and Purpose: The surgical safety of pancreatectomy has improved markedly with the recent development of surgical techniques. However, functional decline after pancreatectomy is an unresolved problem. We focused on the development of new diabetes mellitus after pancreatectomy (NDMPR) and the risk factors were analyzed.

Material and Methods: We analyzed 193 patients who underwent pancreaticoduodenectomy (PD) or pancreaticoduodenectomy (DP) at our institute from January 2008 to December 2019. Pancreatic fattening was assessed by the ratio of residual pancreatic parenchyma and splenic parenchyma CT values (rPS ratio) of the non-contrast preoperative CT. Furthermore, cutoff values predicting NDMPR were established from ROC curves and used in the analysis.

Results: The 193 eligible cases consisted of 157 PD and 36 DP cases. In univariate analysis of NDMPR risk factors, rPS ratio<0.64 ($p<0.01$), HbA1c>5.6 ($p<0.01$), and ALBI grade 3 ($p=0.03$)) were significant risk factors. Furthermore, rPS ratio <0.64 (HR=3.11, $p<0.01$) and HbA1c >5.6 (HR=2.30, $p=0.01$) were independent NDMPR risk factors in multivariate analysis.

Conclusion(s): In pancreatectomy, the rPS ratio < 0.64 is an important risk factor for the development of NDMPR.

Keyword(s): pancreatectomy, new diabetes mellitus

MUCINOUS NEOPLASM OF THE LIVER OR HYDATID CYST: A RARE CASE OF A LIVER CYSTIC MASS

Ivelin Takorov[1], Tsonka Lukanova[1], Elina Todorova[1], Maria Abrasheva[2]

Military Medical Academy - Sofia, First Clinic of Abdominal Surgery, Sofia, Bulgaria[1] - Military Medical Academy - Sofia, Department of Anesthesiology and Intensive Care, Sofia, Bulgaria[2]

Background and Purpose: Mucinous cystic neoplasms of the liver (MCN-L) are rare tumors, usually diagnosed by incidence, that primarily affect women. Although MCN-Ls are benign in most cases, they have malignant potential, so surgical treatment is advised. In this study, we present a case of a patient with a cystic mass in the fourth liver segment, preoperatively suspected as a hydatid liver cyst.

Material and Methods: The patient was a twenty-seven years old woman with vague upper right abdominal complaints and hyperbilirubinemia. Multilocular cystic mass in the fourth liver segment, measured axially 74/66 mm, and dilatation from hypointense structures of the common bile duct, the common hepatic duct, and the left hepatic duct were established by MRI of the abdomen with an interpretation of the result as a CE2 hydatid cyst. In addition, the ERCP revealed a communication between the left intrahepatic bile duct and the cystic mass with compression of the right hepatic duct by the lesion.

Results: We performed a complete cyst excision and explored the common bile duct for removing cyst fragments. The biliary fistula between the cyst and the left intrahepatic bile duct was sutured, and transcystic drainage was placed in the left hepatic duct. During the uneventful postoperative period, the liver cyst was pathologically verified as MCN-L. The patient was discharged on the sixth post-op day, and one year after the surgery, there is no evidence of recurrence.

Conclusion(s): The MCN-L should be suspected in the differential diagnosis of liver tumors, especially among women. The presented surgical management of the described cystic mass represents the standard of treatment of MCN-L.

Keyword(s): Mucinous cystic neoplasms of the liver, Liver surgery

HEPATOCELULLAR CARCINOMA SUBTYPES - A SINGLE CENTRE EXPERIENCE

Mădălina-Cristina Negulescu, Adina Emilia Croitoru, Irina Mihaela Cazacu, Vlad Mihai Croitoru, Ioana Dinu, Monica Ionela Miron, Florina Buică, Ioana Niculina Luca, Iulia Magdalena Gramaticu

Fundeni Clinical Institute, Bucharest, Romania

Background and Purpose: Hepatocellular carcinoma (HCC) is one of the leading causes of cancer death. The 5th WHO Classification of Digestive System Tumors estimates that up to 35% of HCCs can be classified in eight subtypes, defined by specific histopathological, molecular and clinical features.
The aim of the study is to analyze the distribution and clinical relevance of these HCC subtypes in a real-world setting.

Material and Methods: This was a retrospective study including patients with advanced stage HCC, currently undergoing systemic treatment in our clinic, and for whom clinical data from the time of initial diagnosis was available. For all patients, the presence of histologically confirmed or clinically diagnosed HCC could be documented.

Results: A total of 58 HCC patients were currently under treatment in our department. A histological diagnosis of HCC was performed in 50 % of patients (18,9 % surgical resection of the tumor, 22,4 % liver biopsies, 1.7% liver transplantation). The distribution of each histopathologic subtype was largely similar to that in the WHO classification, although some subtypes were not found in the small group of patients. The following subtypes were identified: 68% conventional type, 8% scirrhous type, 8% macrotrabecular massive, 8% steatohepatitic type, 4% fibrolamellar and 4% clear cell HCC. Some subtypes did not display the classic radiologic features of HCC.

Conclusion(s): The hepatocellular carcinoma subtyping based on the 2019 5th WHO classification brings important clinical and prognostic information to the table and assigning a case to the appropriate subtype is of the utmost importance.

Keyword(s): Hepatocellular carcinoma, scirrhous, fibrolamellar, clear cell, steatohepatitic, systemic therapy

LAPAROSCOPIC RADICAL ANTEGRADE MODULAR PANCREATOSPLENECTOMY-A SAFE AND FEASIBLE APPROACH IN TREATING SOLID PSEUDOPAPILLARY NEOPLASM OF THE PANCREATIC TAIL

Vrabie Elena-Mihaela, Stroescu Cezar, Eftimie Mihai-Adrian

Department of General Surgery and Liver Transplantation, Fundeni Clinical Institute, Bucharest, Romania

Background and Purpose: Laparoscopic radical antegrade modular pancreatosplenectomy (RAMPS) represents a validated and feasible surgical approach in solid pseudopapillary neoplasm located in the body or tail of the pancreas, even if its role was controversial for many years. It reproduces the open procedure in terms of the extent of resection, the dissection plane and the extent of lymph node dissection being clearly defined.
The aim of our study was to underline the fesability and safety of laparoscopic RAMPS in solid pseudopapillary neoplasm of the pancreatic tail.

Material and Methods: We present the case of a 36 years old female with history of breast cancer, recently being investigated for epigastric pain and weight loss and diagnosed by CT-scan and IRM with a tumor located in the body and tail of the pancreas (35/25mm). Endoscopic ultrasonography with fine needle aspiration was performed and the result was solid pseudopapillary neoplasm. The surgical procedure chosen was laparoscopic RAMPS taking into account the young age of the patient, the tumor's characteristics and the absence of the comorbidities that could have forbidden the laparoscopic approach.

Results: The postoperative evolution of the pacient was favorable, being discharged in day 5 after surgery. The HP and IHC results of the splenopancreatectomy piece confirmed the diagnosis of solid pancreatic pseudopapillary tumor with positive CD10, PR, BetaCatenin, Synaptophisin and Ki67 1-2%. Afterwards, the patient was referred to a oncology clinic, currently following the oncological treatment.

Conclusion(s): Therefore, laparoscopic RAMPS is a safe procedure increasing the chances of rapid recovery without compromising oncologic principles, even if its survival benefits seem inconclusive. Current evidence indicate that the laparoscopic RAMPS has comparable oncologic outcomes to those of open RAMPS, which makes this procedure safe and effective in well-selected patients.

Keyword(s): laparoscopy, solid pseudopapillary neoplasm of the pancreas, RAMPS

SOLID PSEUDOPAPILLARY TUMOR - CASE REPORT OF A RARE PRESENTATION

Nuno Gonçalves, Jessica Rodrigues, Rui Santos, Rafaela Gonçalves, Ana Sousa, Paulo Sousa, João Pedro Pinho, Eduarda Gonçalves, Alexandra Antunes, Ana Sofia Cavadas, António Girão Caires, Nuno Machado, Claudio Branco, Carlos Veiga, Joaquim Costa Pereira

Hospital de Braga, General Surgery Department, Braga, Portugal

Background and Purpose: Sollid pseudopapillary tumor (SPT) of the pancreas is a rare exocrine pancreatic tumor, first described in 1959 by Frantz. It has a 10:1 predominance for female, with a mean presentation age of 22 years old. It may present as an abdominal mass, pain or more rarely jaundice but it is most often asymptomatic.

Material and Methods: This case represents a rare presentation of a SPT of a 21yo female, without relevant priors, presenting to the emergency department with a 1 month evolution of jaundice and choluria. Laboratory workup revelead an elevated bilirrubin count (Total Bil. 10.05, Direct Billirubin 8.09). An abdominal ultrassound, abdominal CT and MRCP were perfomed with a diagnosis of a nodular leasion with 42*37mm with a fluid and solid component with dilation of the common bile duct. An ERCP was perfomed prior to surgery and a billiary plastic prothesis was placed to allow bile drainage.

Results: The patient was submited to a pancreaticoduodenectomy that underwent without any complications and was discharged on the 7th postoperative day. The histopathpology report showed a solid pancreatic pseudopapillary tumor with 4,5*4cm with 1/21 peripancreatic positive lymph nodes, without perineural and vascular invasion - pT3N1R0.

Conclusion(s): This represents a rare case of an also rare tumor. However, despite lymph node metastasis, the tumor has good prognosis, with low malignant progression and is now currenty under clinical and imagiological surveillance.

Keyword(s): Pancreatic Tumor, Jaundice, pancreaticoduodenectomy

INFECTION AND COMPLICATIONS IN SURGERY AND ONCOLOGY

ORIGIN AND CLINICAL IMPACT OF MULTIDRUG RESISTANT (MDR) CONTAMINATION IN PATIENTS UNDERGOING PANCREATICODUODENECTOMY

Martina Sorrentino, Giovanni Capretti, Gennaro Nappo, Francesca Gavazzi, Cristina Ridolfi, Alessandro Zerbi

Humanitas University, IRCCS Humanitas, Rozzano (MI), Italy

Background and Purpose: The infections of multidrug resistant bacteria (MDR) are more frequent after pancreaticoduodenectomy (PD) compared to other abdominal surgeries and infection complications are one of the main cause of postoperative morbidity after PD. Pre-operative biliary stent (PBS) placement often results in biliary contamination that in turn plays a major role in post-operative infections. The aim of this study is to evaluate the impact of MDR contamination on short term postoperative outcomes of patients undergoing PD and the relationship between MDR bacteria, PBS and bile contaminations.

Material and Methods: This is a retrospective study of a prospectively maintained database of 825 consecutive patients who underwent pancreaticoduodenectomy (PD) between January 2010 to December 2020 in our center.

Results: MDR bacteria were present in the 17.5% of the bilicoltures, and only in the stented group. In our multivariate analysis the development of a major postoperative complication (MPC) was correlated with the presence of MDR bacteria in the bile (OR 1,66, 95% CI: 1,1-2,52; p = 0,02). MDR bacteria were early found in the surgical drainage in 144/825 patients (12,1%) of these 72,2% had a previous biliary stent positioning and 27.8% were non-stented (p < 0,001). In our multivariate analysis the development of a MPC was correlated with the presence of MDR bacteria in drainage (OR=1,81, 95% CI: 1,21-2,73, p= 0,0042).

Conclusion(s): We demonstrated that MDR contamination worsened the short-term outcomes of patients undergoing PD. Our data suggest that the majority of MRD surgical site infections derive from biliary contamination resulting from the placement of a PBS.

Keyword(s): multidrug resistant bacteria (MDR), pancreaticoduodenectomy, post-operative infections

LAPAROSCOPIC AND ROBOTIC SURGERY

RESULTS OF LAPAROSCOPIC SURGERY FOR COLONIC DIVERTICULITIS WITH SIGMOID COLON-URINARY BLADDER FISTULA

Chihiro Kosugi, Keiji Koda, Hiroaki Shimizu, Kiyohiko Shuto, Mikito Mori, Kazuo Narushima, Akihiro Usui, Hiroyuki Nojima

Teikyo University Chiba Medical Center, Department of Surgery, Ichihara, Chiba, Japan

Background and Purpose: We report the results of laparoscopic surgery for colonic diverticulitis with sigmoid colon-urinary bladder fistula in our department.

Material and Methods: Since 2014, 15 cases (12 males and 3 females) underwent laparoscopic surgery for sigmoid colon-urinary bladder fistula. The median age was 64 years (49-89 years).

Results: All patients underwent laparoscopic surgery with 5-port, and one case (6.7%) was converted open surgery. The median operation time was 159 minutes and the median blood loss was 30 ml. The fistula was cut on the intestinal side so as not to cut into urinary bladder. Two cases used a liner stapler, and 13 cases were cut by LCS. One patient who underwent fistula dissection with LCS had an incision to the bladder side and required intraoperative bladder repair with sutures, while the other 14 patients underwent intraoperative bladder leak testing and repair didn't need. Postoperative complications were observed in 6 cases (40.0%), including 2 cases of intestinal obstruction, 2 cases of wound infection, 1 case of pseudomembranous enteritis, and 1 case of bladder fistula regurgitation. Urinary catheter removed on 3 to 7 post operative days for 14 patients, however, 1 patient with bladder fistula insufficiency required placement of the urinary catheter for 30 days after surgery. It was possible after confirming fistula closure. No voiding dysfunction was observed after removal of the urinary catheter. The postoperative hospital stay was 13 days.

Conclusion(s): Laparoscopic surgery for colonic diverticulitis with fistula is acceptable as a minimally invasive surgery, although retroperitoneal dissection is difficult due to inflammation of the diverticulitis site, the operation time is long, and the postoperative complication rate is high.

Keyword(s): Laparoscopic surgery, colonic diverticulitis, colon-urinary bladder fistula

OUR TECHNIQUE AND THE OUTCOMES OF THE ROBOT-ASSISTED DISTAL PANCREATECTOMY

Kazuto Shibuya, Nana Kimura, Mina Fukasawa, Emi Kanaya, Masakazu Nagamori, Toru Wanatabe, Katsuhisa Hirano, Takeshi Miwa, Haruyoshi Tanaka, Isaya Hashimoto, Isaku Yoshioka, Tsutomu Fujii

University of Toyama, Department of Surgery and Science, Faculty of Medicine, Academic Assembly, Toyama, Japan

Background and Purpose: In recent years, with the introduction of robotic technology into the field of pancreatic surgery, minimally invasive approaches to the pancreas, which are technically challenging, may become more feasible in the world. The purpose of this study is to clarify the usefulness of the robot-assisted distal pancreatectomy (RDP).

Material and Methods: The robot that we use is daVinci Xi system. A total of 5 ports is placed for the surgery. The patient cart is rolled in after setting the patient's position and elevation of the lateral segment of liver with conventional laparoscopic techniques. We retrospectively compared perioperative outcomes of RDP patients and laparoscopic distal pancreatectomy patients (LDP) who underwent in our institution from 2017 to 2022.

Results: RDP has been performed in 52 patients (R group) so far. The diseases in R group included 29 cases of pancreatic body/tail cancer, 3 cases of IPMN, 8 cases of PNEN, 6 cases of MCN, 5 cases of SPN, and 1 case of pancreatic AVM. On the other hand, LDP was performed in 39 patients (L group). In the R group, the operative time was significantly longer, but the amount of blood loss was significantly decreased. The conversion rate to laparotomy was also significantly lower in the group R. There was no significant difference in the incidence of clinically relevant postoperative pancreatic fistula and postoperative hospital stay between the two groups. There was no 30-day postoperative mortality in either group. In the investigation limited to pancreatic adenocarcinoma, there was no significant difference in survival or recurrence rates between R group and L group.

Conclusion(s): The outcomes of RDP are comparable to those of LDP, and it is feasible to continue to perform RDP in the future.

Keyword(s): robotic surgery, distal pancreatectomy, pancreatic adenocarcinoma

MINIMALLY-INVASIVE THERAPEUTIC APPROACH OF COLORECTAL CANCER ASSOCIATED WITH METASTATIC LIVER DISEASE

Vrabie Elena-Mihaela[(1)], Mosteanu Iulian[(1)], Dumitru Radu[(2)], Stroescu Cezar[(1)], Eftimie Mihai-Adrian[(1)]

Department of General Surgery and Liver Transplantation, Fundeni Clinical Institute, Bucharest, Romania[(1)] - Department of Radiology, Fundeni Clinical Institute, Bucharest, Romania[(2)]

Background and Purpose: Colorectal cancer represents one of the most frequent cancers associated with liver metastatic disease which can be synchronous or metachronous. The therapeutic strategy may include resection of both the primary tumor and liver metastases: during the same operative session or staged surgery (resection of the primary tumor followed by liver metastases resection). The surgical approach may be represented by laparotomy or laparoscopic surgery.
The aim of our study was to present the laparoscopic surgical approach combined with interventional radiological approach of colorectal cancer associated with synchronous liver metastatic disease.

Material and Methods: We present the case of a 55 years old male patient diagnosed by colonoscopy and CT-exam with sigmoid cancer associated with two liver metastases located in segment 8 (11/9mm) and segment 4-5 (21/16mm) (iT3cN1cM1).
We performed a full laparoscopic resection of both the primary tumor and of one of the liver metastases located in segment 4-5, associated with laparoscopic ultrasound guided radiofrequency ablation of the segment 8 metastasis.
The patient had a favorable evolution being discharged on the 6-th post-operative day.

Results: The final histopathological result revealed a moderately differentiated adenocarcinoma with positive immunohistochemical reaction for CK20 and CDX2 which supports the colorectal origin of the malignant proliferation. Currently, the patient is in the follow-up period.

Conclusion(s): We underlined the importance of interventional radiology associated with minimally-invasive surgery for the treatment of colorectal cancer with liver metastatic disease which permitted a complete treatment solution in the same session, increasing the chances of fast recovery and early initiation of the adjuvant oncological treatment.

Keyword(s): colorectal cancer, liver metastases, minimally-invasive surgery

LIVER TRANSPLANT (ONCOLOGICAL AND NON-ONCOLOGICAL INDICATIONS)

A NOVEL APPROACH TO LIVER DISEASES THROUGH REGENERATIVE STRATEGY

Hanako Tetsuo, Daisuke Miyamoto, Tomohiko Adachi, Manpei Yamashita, Hajime Imamura, Hajime Matsushima, Takanobu Hara, Akihiko Soyama, Kengo Kanetaka, Susumu Eguchi

Department of Surgery, Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan

Background and Purpose: Hepatocyte sheets (HSs) transplantation is expected to be an effective therapeutic technique for the treatment of liver diseases. We have developed a unique HSs formation technique and have conducted research on the improvement of liver function (Miyamoto et al., Regen Ther, 2021). But long-term functional improvement has not been achieved. One reason may be the lack of multidimensional structures, such as biliary ducts in HSs. The absence of biliary structures can lead to liver damage due to bile stasis. In this study, we aimed to develop a novel Hepato-Biliary Sheet (HBS) incorporating a biliary drainage system and evaluate its structure and hepatic function in a rodent model.

Material and Methods: Mouse embryonic fibroblasts and GFP-positive rat derived chemically induced liver progenitor cells (CLiPs) were used to induce the biliary drainage system. HBS was formed by seeding mature rat hepatocytes. In vitro evaluation of HBS compared to HSs included structure analysis and functional assessments. HBS was then transplanted onto the liver surface of mice, and its structure and function were evaluated in vivo using normal and liver failure models. H S transplantation served as a control.

Results: HBS exhibited a structure consisting of CLiP derived bile ducts and mature hepatocytes. Incorporation of bile into HBS was observed, and drug metabolism and albumin production were significantly improved compared to HS. Gene expression related to liver function and bile ducts was significantly higher in HBS. Transplanted HBS demonstrated long-term viability and maintained bile duct-like structures. In a liver failure model, HBS transplantation led to higher albumin concentration compared to HSs.

Conclusion(s): These results suggest that HBS has the potential to improve liver function and contribute to the novel therapeutic strategy of liver diseases through regenerative medicine.

Keyword(s): Hepato-biliary Sheet , CLiP, Regenerative therapy

LOWER GI AND COLORECTAL (SURGERY, ONCOLOGY AND ENDOSCOPIC INTERVENTION)

GOOD RESPONDER EVALUATED BY MAGNETIC RESONANCE IMAGING OF RECTAL CANCER AFTER NEOADJUVANT CHEMOTHERAPY CAN AVOID RADIOTHERAPY: COMPARISONS WITH RADIOTHERAPY

Daisuke Kuwata, Takuya Miura, Yoshiyuki Sakamoto, Hajime Morohashi, Takuji Kagiya, Kentaro Sato, Kenichi Hakamada

Hirosaki University Graduate School of Medicine, Department of Gastroenterological Surgery, Hirosaki, Japan

Background and Purpose: Neoadjuvant therapy (NT) for locally advanced rectal cancer (LARC) has become common; NT includes (chemo)radiotherapy ((C)RT), neoadjuvant chemotherapy (NAC), and total neoadjuvant therapy (TNT). However, the efficacy of NAC alone as a treatment option that avoids the adverse events of radiation remains unclear. The purpose of this study is to identify prognostic factors based on the results of NT for LARC and to compare NAC and (C)RT to determine the efficacy of NAC.

Material and Methods: Between 2016 and 2022, 77 patients with rectal cancer cT3 or cT4, or with lateral lymph node enlargement on MRI, who were treated with NAC or (C)RT and underwent surgery were included. Survival outcomes and prognostic factors before and after NT were analyzed.

Results: Of the 77 patients, 58 were in the NAC group (25 SOX, 33 SOX+Bmab), and 19 were in the (C)RT group (10 CRT, 9 short-term RT). In the NAC and (C)RT groups, the rates of 3-year overall survival (3yOS) were 93.6% and 92.3%, and the rates of 3-year disease-free survival (3yDFS) were 69.5% and 84.2% ($p = 0.437$). The 3-year local recurrence rates (3yLLR) were 15.0% and 12.5% ($p = 0.514$). In multivariate analyses, patients with mesorectal fascia involvement after NT (ycMRF positive) had a significantly higher risk of poor DFS (HR 5.103, 95% CI 1.781-14.62; $p < 0.001$) and poor LLR (HR 7.180, 95% CI 1.329-38.78; $p = 0.022$). There were 44 patients with MRF involvement before NT (cMRF positive, 57.1%). Of the cMRF positive patients, 20 (45%) became MRF negative after NT. Of the ycMRF negative cases, in the NAC and (C)RT groups, 3yDFS was 83.3% and 100% ($p = 0.373$); 3yLLR was 0% in both groups.

Conclusion(s): In patients with disappearance of MRF involvement after NT, NAC and (C)RT had comparable recurrence rates, both with good local control.

Keyword(s): Rectal cancer, Neoadjuvant chemotherapy

TRANSOMENTAL HERNIA: AN INTERNAL HERNIA OF THE GREATER OMENTUM

Miltiadis Lalountas, Stylianos Vladimiros Mouratidis, Panagiotis Makedos, Anastasia Morsi-Gerogianni, Eleni Kalaidopoulou, Nikolaos Smyrlis

General Hospital of Chalkidiki, Surgical Department, Polygyros, Greece

Background and Purpose: Internal hernias are uncommon cause of small bowel obstructions, accounting for fewer than 6%. Transomental hernias are exceedingly rare 1-4% of all intestinal hernias. Transomental hernias are commonly iatrogenic, and result from surgical interventions or from trauma or peritoneal inflammation. In exceptional cases, may occur spontaneously in the absence o f congenital anomalies or traumatic abdominal history.

Material and Methods: A 65-year-old man was admitted to the Surgical Department with an acute abdomen. He reported acute epigastric pain and bilious vomiting for at least 6 hours. The patient could not recall previous, similar pain attacks. He had no prior surgical procedures or history of abdominal trauma. He has a history of quadruple coronary arteries bypass and was on low-dose aspirin. Clinically he has only a mild abdominal tenderness, but no rebound tenderness. In the laboratory control, he had no elevated d-dimers. The CT-scanning showed dilated small bowel loops with a hint of intestinal wall necrosis.

Results: An emergency laparotomy was performed with the preoperative diagnosis of possible thromboembolic disease, due to his known vascular history. An approximately 130 cm segment of the jejunum and the proximal ileum was herniated through a defect in the distal part of great omentum. The incarcerated small bowel loops appeared congested, but did not strangulate. The omentum was divided and after that the ischemic signs of the herniated loops recovered. The postoperative course was uneventful. The patient was discharged on the eighth day.

Conclusion(s): Transomental hernias are difficult to differential diagnosis. Compared with other types of internal hernias, patients with transomental hernias present more frequently with strangulation of the small bowel. For this reason, transomental hernias have a high postoperative mortality rate of 30%, so emergency diagnosis and treatment is critical.

Keyword(s): Spontaneous Transomental Hernia, Internal Hernia, Great Omentum

ILEO-ILEAL INTUSSUSCEPTION: AN ADULT CASE REPORT

Ana Costa Sousa

Hospital de Braga, General Surgery Resident, Braga, Portugal

Background and Purpose: Intussusception refers to the telescoping or invagination of a bowel segment into the lumen of another adjacent segment, and is a diagnosis rarely seen in adults. It presents a varied etiology, from malignant to benign. In the adult population, it mainly affects the small intestine and the clinical presentation is not very specific, making the differential diagnosis difficult with other causes of abdominal pain. In this poster, I present a rare case of an ileo-ileal invagination secondary to a lipoma.

Material and Methods: Clinical case of a 42-year-old patient who went to the emergency department with abdominal pain, eructation and epigastric pain with nocturnal awakenings with 3 weeks of evolution. Abdominal CT and abdominal ultrasound were performed, which described "a mass with a target appearance, suggesting ileo-ilial invagination". After symptom improvement, she was proposed for elective surgery.

Results: The patient underwent laparoscopic segmental enterectomy with latero-lateral isoperistaltic anastomosis on an elective basis. The surgery was uneventful and the patient was discharged on the 5th postoperative day. The histological result confirmed the presence of a lipoma in the ileum that conditioned this ileo-ileal invagination.

Conclusion(s): Cases of intussusception in adults may be associated with pathological masses, so the surgical approach is the most accepted for better characterization of these masses and exclusion of neoplasms.

Keyword(s): Ileo-ileal intussusception; lipoma; invagination;

RIGHT COLONIC INTERPOSITION WITH CECAL-RECTAL ANASTOMOSIS IN HOSTILE ABDOMEN

Alessio Vagliasindi[1], Mario Ciuffi[2], Ottavia Bartolo[2], Orazio Ignomirelli[2], Greta Di Stefano[3], Battistino Puppio[1]

Oncological Center of Basilicata IRCS CROB, Italy, Unit of Abdominal Oncological Surgery, Rionero in Vulture (PZ), Italy[1] - Oncological Center of Basilicata IRCS CROB. Italy, Unit of Endoscopy, Rionero in Vulture (PZ), Italy[2] - Umberto 1 Hospital., Unit of Unit of Emergency Medicine, Lugo, Ravenna, Italy[3]

Background and Purpose: After an extended left colectomy for colorectal cancer, chronic inflammatory bowel disease or abdominal trauma, different possibilities of reconstruction should be considered. Hartmann procedure is characterized by an important advantage: the preservation of right and the transverse colon in order to maintain the reabsorption function together with K and B group vitamin production. Total colectomy with ileo-rectal anastomosis is characterized by an important advantage: the preservation of rectal continence. The Deloyers procedure is characterized by complete mobilization of the right colon and hepatic flexure; right colon is turned in a counterclockwise direction in order to performe a colorectal anastomosis. We report a case of hostile abdomen after an extended left Hartman procedure in a young female patient in whom it was necessary to Right Colonic Interposition (RCI) with Cecal-Rectal Anastomosis (CRA).

Material and Methods: Six years ago a 32 female patient underwent in emergency an extended left Hartmann procedure for colonic volvulus associated to colonic necrosis. One year later, the patient underwent a new surgical procedure of intestinal recanalization: - RCI; - anti-peristaltic mechanical CRA; - ileo-caecal disconnection with appendectomy; - handsewn ileo-colic anti-peristaltic anastomosis.

Results: Postoperative course was uneventful. The patient was discharged on 8th postoperative day. The main advantages of this procedure are: - preservation of Ileo-Colic and Middle Colic arteries; - antiperistaltic CRA without torsion of the vascular pedicles; - antiperistaltic reconstruction, in order to prolong the transit time in the absence of ileo-cecal valve.

Conclusion(s): RCI with antiperistaltic CRA should be considered a valid option after an extended left colectomy, when a traditional colorectal isoperistaltic anastomosis is not feasible.

Keyword(s): Right Colonic Interposition, Cecal-Rectal Anastomosis

References

Violi V et al. Int J Colorectal Dis (2007) 22:1277–1281
Kazuaki Okamoto et al. J Anus Rectum Colon 2021; 5(2): 202-206

MOLECULAR PATHOLOGY

RESPONSE OF PANCREATIC DUCTAL ADENOCARCINOMA TO GEMCITABINE USING A HUMAN ORGANOTYPIC SLICE CULTURE MODEL

Jae Hyuck Chang, Tae Ho Kim, Taeho Sung

The Catholic University of Korea, Bucheon ST. Mary's Hospital, Bucheon, Republic of Korea

Background and Purpose: The organotypic tumor slice culture model resembles the in vivo situation of tumors. It may serve as a good ex vivo platform for response to anti-tumor therapies. We aimed to evaluate the response of pancreatic ductal adenocarcinoma (PDA) cells and helper, cytotoxic, and regulatory T cells to gemcitabine using a human PDA slice culture model.

Material and Methods: The tumors sliced by a vibratome were cultured until 5 days with 0.1 μM, 1 μM, and 10 μM gemcitabine for 1 or 2 days. Tumor responses were evaluated by the number of tumor cells and the proportion of Ki-67 or caspase-3 positively expressed cells in the tumor. CD4+, CD8+, and FOXP3+ cells were analyzed by immunohistochemistry staining.

Results: Mean Ki-67 positive cells in PDA cells decreased according to the increase in gemcitabine concentration (48h; 65.7% in control vs. 27.9% in 0.1 μM, p=0.025). Mean caspase-3 positive cells in PDA cells increased according to the increase in gemcitabine concentration (48h; 8.6% in control vs. 18.6% in 0.1 μM, p=0.042). Mean PDA cells per x200 decreased according to the increase in gemcitabine concentration (48h; 78.3 in 1.0 μM vs. 27.3 in 10 μM, p=0.042). With 24h treatment, mean CD4+ cells/total cells decreased as 2.6%, 1.6%, 1.5%, and 0.5%, mean CD8+ cells/total cells decreased as 2.6%, 1.5%, 1.4%, and 1.1%, and mean FOXP3+ cells/total cells were 0.2%, 0.3%, 0.2%, and 0.1% in control, 0.1 μM, 1 μM, and 10 μM gemcitabine, respectively. However, the mean CD8+/FOXP3+ cell ratio remained stable or increased from 4.4 in 0.1 μM to 8.6 in 1 μM (p=0.039).

Conclusion(s): The tumoricidal effect of gemcitabine could be demonstrated using a human organotypic slice culture model. T cells in the tumor decreased according to the increase in gemcitabine concentration; however, the CD8+/FOXP3+ cell ratio remained stable or increased.

Keyword(s): pancreatic cancer, tumor slice culture, gemcitabine, T cell

NUTRITION AND LIFESTYLE

INVERSE ASSOCIATION BETWEEN B-CAROTENE AND VITAMIN C INTAKE AND COLORECTAL ADENOMA OR CANCER RISK

Joowon Chung[1], *Eui Yeon Lim*[2], *Jung Eun Lee*[2], *Yun Jeong Lim*[3]

Nowon Eulji Medical Center, Eulji University School of Medicine, Assistant Professor, Seoul, Republic of Korea[1] - Department of Food and Nutrition, College of Human Ecology, Seoul National University, Student, Seoul, Republic of Korea[2] - Department of Internal Medicine, Dongguk University Ilsan Hospital, Dongguk University, College of Medicine, Professor, Gyeonggi-do, Republic of Korea[3]

Background and Purpose: Recent studies have suggested that antioxidant has a protective effect against developing colorectal adenoma or cancer, but data regarding actual antioxidant intake and the prevalence of colorectal adenoma or cancer are limited. We distributed food frequency questionnaires to patients who are about to undergo colonoscopy and compared the amount of b-carotene and vitamin C intake and endoscopic results.

Material and Methods: A total of 807 patients from 8 university hospitals in Korea participated in this study, and 15,530 the sixth and seventh Korea National Health and Nutrition Examination Survey (KNHANES 6 and 7, 2015 and 2016) participants were selected as control. We calculated the amount of energy, b-carotene and vitamin C consumed from foods and supplements. Multivariate logistic regression models were built to calculate the odds ratios (OR) for the association between the intake of b-carotene and vitamin C and the prevalence of colorectal adenoma or cancer.

Results: Of the 807 study participants, 446 (238 men and 208 women) underwent colonoscopy, with a mean age of 53.98±13.26 and a mean BMI of 23.88±48, and 197 patients were found to have colorectal adenoma or cancer. The energy intake, b-carotene intake, and Vitamin C intake showed no statistical difference with 6517 patients from KNHANES study. We observed an inverse association between b-carotene and vitamin C intake and colorectal adenoma or cancer. A significant association was observed between first and second tertile of b-carotene intake (ORt1vst2 0.52, 95% confidence interval 0.31-0.87), and between first and third quartile of vitamin C intake (ORQ1vsQ3 0.52, 95% confidence interval 0.29-0.95), after adjusted with age, sex and energy intake.

Conclusion(s): In our study, the increased intake of antioxidants represented by b-carotene and vitamin C is related to the lower prevalence of colorectal adenoma or cancer.

Keyword(s): Antioxidant, b-carotene, vitamin C, colorectal adenoma, colorectal cancer

ORGANIZATIONAL CHALLENGES AND HEALTHCARE MODELS

ELASTOMERIC PUMPS IN DAILY HOSPITAL

Jasna Marušić, Ivona Jerković, Damir Vučinić, Maja Kolak, Iva Skočilić, Renata Dobrila Dintinjana, Arnela Redžović, Nevena Polić, Anita Beg, Ivana Mikolašević

UHC Rijeka, Oncology, Rijeka, Croatia

Background and Purpose: In our facility historically all continuous chemotherapy infusions were delivered only in the hospital setting. During hospital stay patients are restricted in mobility. Introduction of elastomeric pump made a huge difference in daily oncology practice. An elastomeric infusion pump is a type of infusion pump that delivers chemotherapy in a controlled way in which elastomeric pump uses pressure to infuse medication. This pressure is created by having the fluid held in a stretchable balloon reservoir and then pressure from the elastic walls of the balloon drives fluid delivery. We wanted to present our experience of using elastomeric pumps for chemotherapy delivery.

Material and Methods: elastomeric pump infusion in 38 patients in UHC Rijeka, Department of Radiotherapy and Oncology, from January 2023 till today.

Results: During 6 months 38 patients underwent (213 applications) chemotherapy by an elastomeric pump. The mean age of our patients was 65 +/- 2 years (22 men, 16 women). All patients were performance status ECOG 0 or 1 and had appropriate vascular access via port-a-catheter. They all had a diagnosis of metastatic colorectal carcinoma and were delivered 5-fluorouracil as a part of FOLFOX and FOLFIRI protocols which carries 48 h continuous infusion. According to our experience, there was just one technical failure in which there was a chemotherapy leakage through infusion system. There was no flow rate anomalies and injection difficulties

Conclusion(s): According to our experience elastomeric pumps are preferred by patients. This minimizes disruption to their careers and family life. Ambulatory chemotherapy is associated with significant cost savings by using elastomeric pumps. They are easy to use, improve patient flexibility, and can contribute to improving mental and physical health of our patients. Also, they are portable, comfortable, and discreet to use. No significant adverse events were reported.

Keyword(s): elastomeric pump, chemotherapy delivery via elastomeric pump, daily hospital

PREVENTION OF GI DISEASES

PROTON PUMP INHIBITORS AND THE RISK FOR COLORECTAL CANCER: A META-ANALYSIS OF OBSERVATIONAL STUDIES

Jong Wook Kim[1], Jae Jun Park[2], Bun Kim[3], Seung Yong Shin[4]

Inje University Ilsan Paik Hospital, Department of Gastroenterology, Goyang, Republic of Korea[1] - Yonsei University Severance Hospital, Department of Gastroenterology, Seoul, Republic of Korea[2] - National Cancer Center, Department of Gastroenterology, Goyang, Republic of Korea[3] - Chung-Ang University Gwangmyeong Hospital, Department of Gastroenterology, Gwangmyeong, Republic of Korea[4]

Background and Purpose: Proton pump inhibitors (PPIs) induce hypergastrinemia and dysbiosis, which could potentially lead to the development of colorectal cancer (CRC). Previous observational studies have yielded conflicting results.

Material and Methods: A systematic literature search was conducted in PubMed, EMBASE, and the Cochrane Central Register of Controlled Trials to identify relevant studies. Pooled odds ratios (ORs) with 95% confidence intervals (CIs) for the associations between PPI use and the risk of CRC were estimated with a fixed-effects or random-effects model.

Results: Among 114 articles meeting our initial criteria, nine observational studies were identified and included for final analysis, which involved 1,394,759 PPI users and 803,132 non-users. The pooled OR for CRC among PPI users compared to non-users was 1.17 (95% confidence interval [CI] 1.14, 1.21; P < 0.001). The I-squared value was 89.3%. In a subgroup analysis of five studies that provided data for long-term PPI users, long-term PPI users of four years or more showed a higher OR for CRC relative to non-users (pooled OR 1.28; 95% CI 1.18, 1.37; P < 0.001).

Conclusion(s): In contrast to previous meta-analyses, our findings support a potentially significant association between PPIs and CRC.

Keyword(s): Proton pump inhibitors; Colorectal neoplasms; Meta-Analysis

RADIOTHERAPY

THE USE OF BIOELECTRICAL IMPEDANCE ANALYSIS TO PREDICT ACUTE RADIATION TOXICITY IN PATIENTS WITH RECTAL CANCER UNDERGOING RADIOTHERAPY

Maja Kolak, Lana Bolf Perić, Jasna Marušić, Ivona Jerković, Renata Dobrila-Dintinjana, Miran Gašparović, Ivan Balentović, Nevena Polić, Iva Skočilić, Damir Vučinić, Ivana Mikolašević

Clinical Hospital Centre Rijeka, Department of Radiotherapy and Oncology, Rijeka, Croatia

Background and Purpose: Phase angle (PhA), determined by bioelectrical impedance analysis (BIA), detects changes in tissue electrical properties and has been found to be a prognostic indicator in several chronic conditions. Lower phase angles suggest cell death or decreased cell integrity. This study was conducted to investigate the prognostic role for early side effects of PhA and other BIA scale parameters in rectal cancer during radiotherapy (RT).

Material and Methods: Using BIA (TANITA scale), the body composition was measured prior to RT in 57 patients. Body mass index, sarcopenic index, bone mass, muscle mass, percentage of body water and phase angle were analyzed before radiotherapy. Patients in the treatment of rectal, breast, prostate and rectal cancer were included in the prospective follow-up during RT. Patients with rectal cancer were classified into a separate group, n=12. The occurrence of side effects during RT was analyzed.

Results: In the analysis of the sarcopenic index, it was evident that patients with rectal cancer are at a higher risk of development of sarcopenia ($p = 0.002$). Patients with rectal cancer had statistically significantly higher bone mass ($p = 0.001$). There is a statistically significant difference in the value of the phase angle in patients with rectal cancer (mean 4.9 ± 0.7) compared to other patients undergoing RT (mean 6.1 ± 12). There was no statistically significant difference in the occurrence of acute side effects, muscle mass, percentage of body water. When patients were divided into groups based on acute side effects of RT, it is evident that the group with side effects (n=17) has a statistically significantly lower PhA value ($p < 0.0001$).

Conclusion(s): PhA prior to RT is a useful marker for selection of individuals with rectal cancer who are at a high risk of unfavorable changes in body composition.

Keyword(s): Bioimpedance electrical analysis, Sarcopenia, Cancer, Radiotherapy, Phase Angle

RARE GI TUMORS (NEUROENDOCRINE TUMORS, GIST, AND SARCOMAS)

SOLID PSEUDOPAPILLARY TUMOR OF THE PANCREAS

Arpád Panyko[1], Marianna Hájska[2], Martin Dubovský[2], Štefan Novák[1], Marián Vician[2]

University Hospital Bratislava, 4th Department of Surgery, Bratislava, Slovak Republic[1] - Comenius University, Faculty of Medicine, Bratislava, Slovak Republic[2]

Background and Purpose: Benign cystic tumors represent only 2% of pancreatic tumors. Solid pseudopapillary tumor of the pancreas (Franz's tumor, Hamoudi tumor) is representing up to 4% of cystic pancreatic tumors. Unlike malignant tumors, they typically occur in young women in their second-third decade of life.

Material and Methods: The authors present the case of a solid pseudopapillary tumor of the pancreas diagnosed in a 47-year-old patient. Initially, on the basis of the ultrasonographic findings, a non-specific tumor of the subhepatic region was diagnosed. The CT and MRI scans showed, that it was most likely a well-defined suspiciously from the body and the tail of the pancreas. Distal pancreatectomy and splenectomy were performed and histopathology confirmed a solid pseudopapillary tumor with complete resection and no evidence of malignancy. Ten days after an uncomplicated postoperative course, the patient underwent reoperation for a pancreatic fistula and subhepatic abscess formation, which was completely healed.

Results: Despite the benign potential, metastases of this tumor, especially in the spleen, have been described in approximately 0.5-4% of patients. Vascular and perineural invasion is noted in 20% of patients, which is the cause of tumor recurrence in up to a third of affected patients despite R0 resection. A characteristic feature of the disease is its late clinical manifestations in the form of pain and disorders of the intestinal passage. Diagnosis is based on an MRI examination. The only currently recognized treatment is exclusively surgical resection, with tumor size not predicting resectability.

Conclusion(s): Solid pseudopapillary tumors of the pancreas are rare, mostly benign lesions. Symptoms may be present due to compression, namely in large tumors. Patients must be closely monitored after surgery due to the relatively high frequency of disease recurrence despite R0 resection and usually have an excellent long-term prognosis after surgical resection.

Keyword(s): Solid pseudopapillary neoplasm, Frantz's tumor, Hamoudi tumour, Pancreatic tumor, Case report

POORLY-DIFFERENTIATED GASTROENTEROPANCREATIC NEUROENDOCRINE CARCINOMAS: CHARACTERISTICS, TREATMENTS AND OUTCOMES FROM A POPULATION-BASED COHORT

Lavinia Benini, Michele Borghesani, Lorenzo Gervaso, Francesca Spada, Laura Algeri, Chiara Cella, Nicola Fazio

European Institute of Oncology (IEO) IRCCS, Division of Gastrointestinal Medical Oncology and Neuroendocrine Tumors, Milan, Italy

Background and Purpose: Poorly differentiated neuroendocrine carcinomas (NECs) are rare malignancies with dismal prognosis; gastroenteropancreatic (GEP) tract represents the most frequent primary site for extra-pulmonary NECs.
Few therapeutic options are available and predictive factors are lacking.

Material and Methods: Retrospective, monocentric observational study evaluating patients with GEP-NEC, discussed at the Multidisciplinary Board of our Institution between Oct 2018 and Aug 2022. All primary sites along the digestive system and stages of disease are included. Informed consent is obtained for every pt.

Results: We included 101 pts, median age 64 yo. Medium ki67 was 80%. Sixty-eight % presented wih advanced disease. Colon was the most frequent primary site (23%), followed by pancreas (21%) and rectum (18%). Median OS (mOS) in the entire cohort was 17.33 months; in ki67≤55% group, mOS was better than ki67>55% (18.6 vs 16.4, respectively). Eighty-one % received first-line chemotherapy, mainly platinum-etoposide. Disease control rate was 56%. Median PFS was 5.9 months.
Fifty-eight % of patients received a second line, with 14% ORR and 5.7 mo mPFS. Preferred regimens were fluoropyrimidines-based, in 40%.
Tumor tissue biomarkers were available in 39%: most frequent alterations occurred in TP53 (37%) and KRAS (29%). Only one patient received a molecular-driven therapy: finding a PDL1 CPS 10, he received pembrolizumab as second line after progressing to first line chemotherapy for an advanced esophageal NEC, obtaining PR with a Duration of Response (DoR) of 12.3 months.

Conclusion(s): Our retrospective study showed that a first-line platinum-etoposide can be active in different primary sites of GEP NECs, though with short PFS.
More data are needed to guide clinicians in the management of this poorly understood and severe disease, including predictive biomarkers of response and appropriate combination and sequencing of therapies. Further sub-analyses could guide future prospective studies on homogeneous populations, by including genomic profiling of the neoplasm for tailored treatment option

Keyword(s): Neuroendocrine poorly-differentiated Carcinoma

ROLE OF IMATINIB IN TREATMENT OF GIST

Mahim Koshariya, Yogshri Chaubey, Prasoon Singh, Utkarsh Bhandari

Gandhi medical college, Department of General Surgery, Gandhi medical college and Hamidia Hospital Bhopal, India 462001, Bhopal, India

Background and Purpose: GISTs are mesenchymal tumors that arise most commonly from the gastrointestinal tract. Surgical resection remains the mainstay of potentially curative treatment, but recurrence rates are high. Our aim is to review and critically evaluate the studies that examined the role of imatinib therapy in GIST.

Material and Methods: We reviewed the data through PubMed, Embase, Web of Science and Cochrane library to evaluate the use of imatinib in GIST.

Results: The overall survival was significantly improved with neoadjuvant therapy (HR: 0.36, 95% CI: 0.17–0.75) but no significant advantage in disease free survival was seen (HR:0.71, 95% CI:0.35-1.41). While with adjuvant therapy given for 3 years, 5-year recurrence free survival improved (HR:0.66,95% CI 0.49-0.87) along with 5-year overall survival (HR:0.55, 95% CI:0.37–0.83).

Conclusion(s): Both neoadjuvant as well as adjuvant imatinib therapy has shown to be effective in improving survival of the patients suffering from GIST. The neoadjuvant imatinib facilitates resection by decreasing tumour size. Adjuvant therapy is recommended for patients at high risk of recurrence.

Keyword(s): GIST, imatinib , upfront surgery, neoadjuvant treatment, adjuvant treatment, recurrence

TARGETED THERAPY AND IMMUNOTHERAPY

EFFICACY AND SAFETY OF ANTI-EPIDERMAL GROWTH FACTOR RECEPTOR AGENTS IN PATIENTS WITH RAS WILD-TYPE METASTATIC COLORECTAL CANCER ≥ 70 YEARSEFFICACY AND SAFETY OF ANTI-EPIDERMAL GROWTH FACTOR RECEPTOR A

Ivona Jerković, Damir Vučinić, Jasna Marušić, Iva Skočilić, Maja Kolak, Arnela Redžović, Renata Dobrila Dintinjana, Lana Bolf Perić, Ani Mihaljević Ferari, Ivana Mikolašević

Uhc Rijeka, Oncology, Rijeka, Croatia

Background and Purpose: Colorectal cancer affects many elders. Older patients are considered vulnerable and frail. In this paper, we have analyzed survival outcomes, progression-free survival (PFS), and overall survival (OS) as well as the safety of adding anti-epidermal growth factor receptor (EGFR) to doublet chemotherapy (DC) in older patients (≥70 years old) versus younger patients (≤ 70 years old).

Material and Methods: All cases of patients older than 70 years receiving DC + anti-EGFR therapy in our center from January 2020 to December 2022 were retrospectively reviewed. A case-control analysis was performed in older patients matched to younger patients by treatment protocol. The analysis included a total of 40 patients, 20 patients receiving DC + anti-EGFR ≥70 years old (11 received cetuximab, 9 received panitumumab), and 20 patients ≤ 70 years old (10 received cetuximab, 10 received panitumumab).

Results In both cetuximab and panitumumab arms older and younger patients had similar OS and PFS (OS 38.7 vs 36.2, PFS 11.0 vs 8.2 months in the cetuximab arm, OS 36.6 vs 33.9, PFS 13.1 VS 10.1 in the panitumumab arm). There was no significant difference in the frequency of adverse events among different age groups neither in the cetuximab nor panitumumab arm (80-100% of patients had rash as an adverse event). Only statistically significant difference was seen in grade 3 adverse rash rate in the panitumumab arm where older patients had a 50% G3 rash rate, and younger ones a 10% G3 rash rate. Also we noticed that in panitumumab group of patients younger ≤ 70 years old had higher incidence of neutropenia than group of older patients (80% vs 30%). There was no such difference in cetuximab subgroup of patients.

Conclusion(s): Older patients with mCRC RAS WT colorectal cancer had comparable toxicity and efficacy versus younger patients receiving anti-EGFR therapy.

Keyword(s) colorectal cancer, anti-EGFR agents, older patients

UPPER GI (SURGERY, ONCOLOGY AND ENDOSCOPIC INTERVENTION)

LOSS OF ESOPHAGEAL AXIS, ESOPHAGITIS AND ESOPHAGEAL MOTOR BEHAVIOR

Valter Nilton Felix[1], Ioshiaki Yogi[2], Gabriel da Silva Kawakami[3], Ariany Caroline Ferreira[3], Bernardo Fernandes Pelinca Costa[3]

HCFMUSP and NGSS - Nucleus of General and Specalized Surgery - São Paulo, Professor, São Paulo, Brazil[1] - NGSS, MD, São Paulo, Brazil[2] - HCFMUSP and NGSS, student, São Paulo, Brazil[3]

Background and Purpose: Hypotony of the lower sphincter is common in cases of gastroesophageal reflux disease (GERD), but that of the esophageal body, which is often associated, leads to concerns about performing total fundoplication. We seek to add something to the understanding of esophageal hypotony.

Material and Methods: Twelve patients, four males and eight females, mean age 38.2 years (31-54), with hiatal hernia of 4 cm or more and C and D esophagitis (Los Angeles) were submitted to conventional esophageal electromanometry to verify the pressure of the lower esophageal sphincter (LESP) and the average amplitude value of ten swallowing waves, captured by four radial channels, and provoked by swallowing 5mL of water, in the distal third of the esophagus, 3 cm above the upper border of the LES (SWA). Afterwards, the patients underwent surgical treatment, hernia reduction, hiatoplasty and Toupet fundoplication. They were discharged from the hospital on the third postoperative day and, one to two years later, underwent postoperative studies. For statistical analysis, the Student's t test was applied.

Results: Preoperatively, the LESP was 7.63 ± 2.73 mmHg and the SWA, 13.30 ± 2.10 mmHg. There was no mortality in the series, and all became asymptomatic. Postoperative radiology showed no recurrences, and upper digestive endoscopy, no hiatal hernia, normal mucosa in nine cases and esophagitis A in three. The esophageal electromanometry demonstrated a significant increase in LESP, to 11.85 ± 2.46 mmHg ($p<0.01$) and SWA, to 32.97 ± 7.39 mmHg ($p<0.01$).

Conclusion(s): The surgical treatment improved the functional behavior of the organ. The LESP presented a relevant increase, as well as SWA. The hypotony of the esophageal body in GERD with HH seems to be a mere consequence of the loss of the organ axis and of the esophagitis. New studies may reinforce such conclusions.

Keyword(s): GERD, Esophageal Manometry, Surgery

A CASE OF TRACHEO-OESOPHAGEAL FISTULA TREATED WITH SELF-EXPANDABLE METALLIC STENT

Ivan Vulić[(1)], Zlatko Bulić[(1)], Luka Vulić[(2)], Robert Radolović[(3)], Jadranka Cetina Žgrablić[(1)], Irena Hrstić[(1)], Marko Nikolić[(4)]

General hospital Pula, Department of Gastroenterology, Pula, Croatia[(1)] - Clinical hospital centre Rijeka, Department of Oral and Maxillofacial Surgery, Rijeka, Croatia[(2)] - General hospital pula, Department of digestive surgery, Pula, Croatia[(3)] - University Hospital Centre „Sestre Milosrdnice“ Zagreb, Croatia, Department of Gastroenterology, Zagreb, Croatia[(4)]

Background and Purpose: Tracheo-oesophageal fistula (TOF) is a pathological connection between the trachea and the oesophagus that is associated with various underlying conditions including malignancies, infections, inhalation injuries and traumatic damage.

Material and Methods: Inflammatory parameters were slightly elevated and Contrast-enhanced abdominal CT was done. Upper gastroscopy with placement of self-expandable metallic stent (SEMS) and diagnostic bronchoscopy were done.

Results: We present a 63-year old patient who was examined at ER department becasuse of chest pain, dispnea and lack of air. Recently he underwent total gastrectomy, distal esophagectomy with creating esophago-jejunal and entero-enteral anastomosis due to carcinoma of the distal esophagus and cardia of the stomach. Contrast-enhanced abdominal CT revealed dehiscence of the anastomosis in the area of the EJ junction with a fistulous opening with a diameter of approx. 8 mm and a larger accumulation of contrast-marked content in the right pleural space. Onwards, bronchoesophageal fistula was suspected, bronchoscopy was performed with no communication to the trachea or main bronchi. Due to symptoms, empiric antibiotic therapy was introduced and patient agreed to an attempt of endoscopic placement of self-expandable metallic stent(SEMS). Following the procedure, symptoms regressed with a significant improvement in quality of life.

Conclusion(s): Once the diagnosis has been established, SEMS has provided a viable, safe and effective option, which improves the quality of life of these patients, with minimal morbidity. As the techniques and quality of stents improve, the survival rate may improve; at present SEMS remains our option of choice in treating tracheo-oesophageal fistula.

Keyword(s): Tracheo-oesophageal fistula, self-expandable metallic stent, Contrast-enhanced abdominal CT

ROPER SIZE AND TIMING OF ENDOSCOPIC DILATION IN ANASTOMOTIC STRICTURE AFTER NEAR-TOTAL ESOPHAGECTOMY

Dae Gon Ryu, Cheol Woong Choi, Cheolmin Lee, Geonwoo Lee, Hojune Lee, Hyunmyung Cho, Won Jun Jang, Woo Jin Kim, Jin ook Jang, Min Chae Jeon

Pusan National University Yangsan Hospital, Department of Internal Medicine, Yangsan, Republic of Korea

Background and Purpose: The size or timing of endoscopic dilatation for anastomotic stricture after near-total esophagectomy is not clear. The purpose of this study is to find out the target size and the timing of endoscopic dilatation for stenosis after near-total esophagectomy.

Material and Methods: Medical records of patients with endoscopic dilatation for anastomotic stricture after near-total esophagectomy between January 2015 and April 2021 were reviewed. We analyzed the stricture recurrence rate and dilation-free period according to each diameter of dilation.

Results: In the study period, 78 endoscopic dilations in 24 patients were enrolled. The stricture recurrence rate was 91.4% in 13.5mm or less group, 57.9% in 15mm group, and 0% in 16.5mm group. The dilation-free period had a mean of 48.2 (range 14-679) days in 13.5mm or less group and 109.3 (range 14-347) days in 15mm group ($p = 0.045$). No perforation occurred in this study.

Conclusion(s): In patients with anastomotic stricture after near-total esophagectomy, safely consider 15mm as the target diameter of dilation, and if this is achieved, follow-up endoscopy and dilation can be considered after 3 months.

Keyword(s): Esophageal cancer, Stricture, Endoscopy, Dilation

INTRA-DUODENAL INTRA-GASTRIC BALLOON: A CASE REPORT

João Pedro Pinho, Alexandra Antunes, Ana Sofia Cavadas, Eduarda Gonçalves, Nuno Gonçalves, Jéssica Rodrigues, Ana Sousa, Paulo Sousa, Rafaela Brás, Rui Santos, Fernando Manso, José Maia da Costa, Ana Cristina Ribeiro, José Pedro Pinto, Joaquim Costa Pereira

Hospital de Braga, Hospital de Braga, Braga, Portugal

Background and Purpose: The worldwide prevalence of obesity has doubled in recent years, resulting in a rise of obesity-related health conditions and comorbidities. There is a growing need for safe and effective treatment options for this disease, including beyond lifestyle interventions and pharmacotherapy. Other therapeutic options, such as intra-gastric devices or bariatric surgeries have been developed.
Intra-gastric balloon devices are placed through minimally invasive methods, such as a gastroscopy or swallowing a capsule. This temporary procedure reduces stomach volume and promotes the feeling of satiation through a restrictive mechanism.

Material and Methods. This clinical case reports a 38-year-old female patient with BMI 25.2 Kg/m^2, no relevant medical history, who underwent a non-endoscopic placement of an intra-gastric balloon on a private institution.

Results: The patient presented to the emergency department with upper abdominal pain and a bulge in the right upper quadrant of the abdomen the day after the procedure. An abdominal CT scan revealed that the balloon migrated to the duodenal arch, causing a deviation of the head of the pancreas and the gallbladder. Due to the high risk of perforation, the patient underwent an exploratory laparoscopy and endoscopy to remove the balloon. Postoperatively, the patient was managed with nasogastric tube, total parenteral nutrition, and intravenous antibiotics. A control CT scan and endoscopy were performed, showing a decrease in the size of the pseudo-diverticulum in D2 with granulated mucosa. Enteral feeding was gradually initiated with good tolerance, and the patient was discharged three weeks after admission.

Conclusion(s): In conclusion, intra-gastric balloon devices are a viable option for treating obesity, but their use carries potential risks. In this case, the balloon migration led to a potential fatal complication that required surgical intervention. Medical professionals must be aware of the possible complications associated with intra-gastric balloon devices and closely monitor patients for any signs of adverse effects.

Keyword(s): Bariatrics; Intra-gastric balloon

RISK FACTORS FOR EARLY RECURRENCE IN ESOPHAGEAL CANCE: ANALYSIS OF TUMOR-INFILTRATING IMMUNE CELLS

Takahiro Enjoji[(1)], Shinichiro Kobayashi[(1)], Hanako Tetsuo[(1)], Tomohiko Adachi[(1)], Kazuma Kobayashi[(1)], Akihiko Soyama[(1)], Kengo Kanetaka[(1)], Takashi Okano[(2)], Susumu Eguchi[(1)]

Nagasaki University, Department of Surgery, Nagasaki, Japan[(1)] - Nagasaki University Hospital, Department of Pathology, Nagasaki, Japan[(2)]

Background and Purpose: Esophageal cancer is known for its high recurrence rate following radical resection, particularly early recurrence, which carries a poor prognosis. Although immune checkpoint inhibitor (ICI) therapy has shown promise, there was no biomarker for the response of ICI. This study aims to investigate the association between early postoperative recurrence and the tumor immune microenvironment as a potential biomarker for patient selection in postoperative immunotherapy.

Materials and Methods: The study enrolled 63 patients with pStage II, III, or IV esophageal cancer who underwent radical surgery. Retrospective evaluation was conducted on 26 patients who experienced cancer recurrence within one year (Early Recurrence (ER) group), and 37 patients with non-early recurrence (NER group). CD8-positive lymphocytes and Forkhead box protein 3(Foxp3)-positive lymphocytes which is expressed in CD4 and CD8 lymphocytes, were counted and classified 3 groups (High/High, High/Low or Low/High, and Low/Low). Next, the 1-year RFS for T-cell immunoglobulin mucin 3 (TIM3) and Programmed death receptor-1 (PD1) ratios in the CD8 Low and Foxp3 Low groups, respectively.

Results: The CD8/Foxp3 subgroups in four groups showed that the High/High group had the best prognosis (82.3% 1-year RFS), while the Low/Low group had the worst prognosis (12.5% 1-year RFS). It was found that the 1-year RFS was significantly worse in the CD8 Low and TIM3/CD8 ratio High group, as well as in the CD8 Low and PD1/CD8 ratio High group. Similarly, the Foxp3 Low and TIM3/Foxp3 ratio High group and the Foxp3 Low and PD1/Foxp3 ratio High group exhibited significantly worse prognoses compared to the other groups.

Conclusion(s): In esophageal cancer, the infiltration of CD8 and Foxp3 positive lymphocytes is crucial to prevent early recurrence after the curative esophagectomy. The balance with regulatory functions of lymphocytes may also be associated with early recurrence after the curative esophagectomy.

Keyword(s): esophageal cancer, tumor immune microenvironment

AUTHORS INDEX

D

E

F

G

H

I

J

K

L

M

N

O

Q

P

R

S

T

U

V

W

X

Y

Z