From the Congress President

I believe that publishing the oral presentations introduced at the 12th National Gastroenterological Surgery and 2nd Liver Transplantation Congress, organized by the Society of Gastroenterological Surgery and Society of Liver Transplantation on November 7-9, 2024, in Malatya, in JILTI will be beneficial to readers in terms of enlightening topics. In this issue, we have allocated space for these oral presentations, which are related to the gastrointestinal system, including hepatobiliary subjects.

President of the Congress

Prof Dr Sezai Yilmaz MD, FACS

Inonu University

Director of Liver Transplantation Institute

Oral Presentation Sessions

Session Chairs

Prof. Dr. Sami Akbulut, Assoc. Prof. Dr. Veysel Ersan

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1. Difficult Liver Graft Harvesting: A Case With Hiatt Type 5 Arterial Anomaly

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Introduction:

To present our experiences with a case involving HIATT Type 5 anomaly encountered during the harvesting phase of cadaveric liver transplantation.

Methods:

The case was completed after appropriately classifying the anomaly identified through pre-harvesting imaging studies and perioperative exploration findings.

Results:

A 34-year-old male patient with no known comorbidities was identified as a cadaveric donor following brain death due to head trauma. Harvesting was planned.

Pre-harvesting tomography revealed that the main hepatic artery originated from the superior mesenteric artery (SMA), while only the splenic artery and left gastric artery originated from the celiac trunk.

Discussion:

Unexpected anatomical variations may be encountered during donor harvesting. Arterial anatomical variations are particularly common and have been classified in various ways. In our clinic, we use the Hiatt classification. Preoperative abdominal CT imaging is essential for understanding these variations when available. For donors without imaging, it is crucial to anticipate possible variations and adapt the procedure accordingly.

Keywords: Liver transplantation, harvesting, Hiatt classification, arterial anomaly

2. Our Single-Center Experience In Liver Transplantation: Acheivements of a Newly Established Center

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Introduction:

As a newly established center in liver transplantation, we aimed to present our experiences in liver transplant surgeries and patient follow-ups over an 18-month period.

Methods:

Over 18 months, 12 cadaveric liver transplants were performed. The perioperative and postoperative conditions observed and applied to these 12 patients were recorded. The patients' characteristics, evaluated through laboratory and imaging tests, are presented in the table.

Results:

Organs were obtained from cadaveric donors and transplanted to 12 patients (4 females, 8 males). The median age of operated patients was 56 (21-72 years). The median operation time was 640 (460-990) minutes. A stent was used during bile duct anastomosis in one case. No major intraoperative complications were observed. In the postoperative period, patients had a median intensive care stay of 3 (2-11) days and a median hospital stay of 21 (10-33) days before discharge (Table 1). Biliary complications were observed in two patients, and PTK catheters were placed. No rejection was observed in any patient. Mortality did not occur in this series.

In the long term, only one patient underwent reoperation due to umbilical hernia development.

Discussion:

Studies on liver transplantation etiology show the highest rate belongs to viral hepatitis (primarily HBV), followed by cryptogenic cirrhosis, HCV, and alcohol-related cirrhosis. Similarly, HBV-induced cirrhosis was the most common etiology in our series, followed by NASH, autoimmune hepatitis, and cryptogenic cirrhosis.

Studies report bile leaks in 5-10% of patients. In our series, bile leakage was observed in one patient (6%), and a PTK catheter was placed. This rate is consistent with the literature. The bile duct stricture rate in the literature is 13%, while our study observed a 6% rate, aligning with the literature.

Studies indicate mortality rates below 10% after liver transplantation. No mortality was observed in our series.

Keywords: Liver, Transplantation, Cadaveric

Table 1. The characteristics of the patients transplanted in our institution.

	Age	Gender	Diagnosis	Duration of Operation	Perioperative Characteristics	ICU stay	Duration of stay in the Wards	Complications
1	60	K	PBS+HCC	640	-	2	12	
2	26	E	WILSON	460	-	3	15	
3	46	E	HBV	625	-	2	21	
4	52	E	HBV	990	ILIAC ARTERIAL GRAFT	2	22	INCISIONAL HERNIA
5	71	K	NASH	570	-	5	21	
6	62	K	CRYPTOGENIC	640	-	11	10	COVID
7	50	E	HCV	650	-	2	32	
8	67	E	MASLD	700	--	3	32	BILIARY LEAK
9	40	K	CRYPTOGENIC	560	-	2	13	
10	21	E	AUTOIMMUNE HEPATITIS	750	--	8	33	SEIZURES+ BILIARY STENOSIS
11	61	E	HBV	610	-	7	15	
12	62	E	ALCOHOL+ HCV	760	-	3	22	

MASLD: Metabolic Dysfunction-Associated Steatotic Liver Disease; HBV: Hepatitis B Virus; HDV: Hepatitis Delta virus; HCV: Hepatitis C virus; MELD: Model for end-stage liver disease; Covid: corona virus-associated infectious disease; ICU: intensive care unit.

3. Adult Living Donor Liver Transplantation Experience of Diyarbakir Dicle University Organ Transplant Center

Mehmet Yilmaz[1], Murat Sevmis[1], Hatice Gulsen Yilmaz[1], Ulas Aday[1], Abdullah Oguz[1], Mehmet Veysi Bahadir[1], Muhsin Kaya[2], Kendal Yalcin[2], Ayhan Kaydu[3]

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Objective

This study aims to present the results of living donor liver transplants (LDLT) performed in our institution, starting in May 2023.

Methods

The outcomes of 41 LDLT procedures conducted between May 2023 and October 2024 in our clinic were retrospectively analyzed.

Results

The indication for transplantations are summarized in Table 1. The mean age of the recipients was 48.34 years [19-67]; 17 (41%) were female, and 24 (59%) were male. The mean MELD score was 20.07 [10-33]. The mean duration of the recipient's surgery was 8.7 hours [7-12], and the median cold ischemia time of the grafts was 105.7 minutes [70-178]. The graft-to-recipient weight ratio (GWRW) was 1.01 [0.7-1.4]. Among the grafts, 40 (98.6%) were right lobe, and 1 (2.4%) was left lobe. The mean postoperative hospital stay was 13.6 days [1-28] (Table 2).

Intra-abdominal hemorrhage necessitated reoperation in one patient (2.4%) during the fourth postoperative month; this patient later died due to Klebsiella sepsis. A challenging case with Budd-Chiari syndrome required extensive recipient hepatectomy and intraoperative transfusion of 8 units of erythrocytes. This patient succumbed on postoperative day 1 due to primary graft non-function and disseminated intravascular coagulation (DIC).

Six (14.6%) patients underwent relaparotomy: five (12%) for bleeding control and one (2.4%) for arterial revision. Arterial reconstructions were performed with 8/0 Prolene sutures. Early hepatic artery thrombosis developed in two patients (4.8%), and late hepatic artery stenosis occurred in one patient (2.4%). Arterial revision was successfully performed in the other case via relaparotomy. In one patient (2.4%), stenting was required for hepatic artery stenosis at week 6. One of the patients with arterial thrombosis was treated with stenting; however, on the 10th day postoperatively, occlusion of the anterior arterial branch was observed.

Small-for-size syndrome developed in one patient, who succumbed to Klebsiella sepsis on postoperative day 35. Biliary reconstructions were performed with continuous posterior and anterior wall sutures using 6/0 Prolene over internal stents. Biloma developed in two patients (4.8%), which were resolved by percutaneous drainage on days 30 and 35.

Conclusions:

In our clinic, LDLT mortality occurred in 3 cases (7.2%) during the early postoperative period and in 2 cases (4.8%) during the late postoperative period, totaling 5 cases (12%). As a new center, 36 (88%) of our cases survived, with a mean follow-up duration of 10.2 months.

Keywords: Living Donor Liver Transplantation, Survival and Morbidity, Complications

Table 1. The indications for liver transplantation.

	n (%)
HBV	10 (24.4)
HBV+HDV	11 (26.8)
Hepatocellular carcinoma	6 (14.6)
Cryptogenic cirrhosis	9 (22.0)
MASLD	1 (2.4)
Wilson's disease	1 (2.4)
Budd-Chiari syndrome	1 (2.4)
HCV	1 (2.4)
Autoimmune hepatitis	1 (2.4)

MASLD: Metabolic Dysfunction-Associated Steatotic Liver Disease; HBV: Hepatitis B Virus HDV: Hepatitis Delta virus HCV: Hepatitis C virus.

Table 2. The perioperative characteristics of the patients.

Right lobe graft	40 (97.6%)
Sol lob graft	1 (2.%4)
GWRWR	1.0 [0.7-1.4]
Duration operation ratio	8.7 [7-12] hr
Volume of blood transfusion	2.41 [0-10] units
Duration of hospitalization	13.6 [1-28] days
Amount ascites	1.57 [0-8] L
Cold ischemia time	105.7 [70-178] min

GWRWR: Graft Weight Recipient Weight Ratio.

4. Is the Use of Transanastomotic Internal Stents in Biliary Reconstruction a Reliable Option to Reduce Biliary Complications?

Mehmet Yilmaz[1], Murat Sevmis[1], Hatice Gulsen Yilmaz[1], Ulas Aday[1], Abdullah Oguz[1], Mehmet Veysi Bahadir[1], Muhsin Kaya[2], Kendal Yalcin[2], Ayhan Kaydu[3]

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Introduction:

The use of transanastomotic internal and external stents in biliary reconstruction during living donor liver transplantation (LDLT) remains controversial. This study aimed to present our postoperative biliary complications using internal transanastomotic catheters in bile duct anastomosis.

Methods:

A retrospective, longitudinal study was conducted on a cohort of LDLT patients treated in our clinic between May 2023 and July 2024.

Results:

The mean age of the patients was 48.34 years [19-67]; 17 (41%) were female, and 24 (59%) were male. Of the grafts, 40 (98.6%) were right lobes, and 1 (2.4%) was a left lobe. The mean follow-up duration was 10.2 months [4-19]. Among the graft bile ducts, 20 (49%) had dual (separate anterior and posterior bile ducts), 13 (31%) were single, 7 (17%) were "glasses-shaped" (fused anterior and posterior bile

ducts), and 1 (2.4%) had triple ducts (anterior, segment 6, segment 7).

All biliary reconstructions used transanastomotic internal stents prepared from feeding catheters of 4-6 French, cut into pieces 4-8 cm long, and sutured with 6/0 Prolene using a continuous posterior and anterior wall technique. A single bile duct received a single 6 French catheter, while dual, glasses-shaped, and triple bile ducts received separate 4-6 French stents for anterior and posterior ducts. Seven (17%) cases utilized the cystic duct for biliary reconstruction, particularly when the anterior-posterior sectors were far apart or in cases of insufficient main hepatic bile ducts for graft anastomosis (Figure 1).

Biloma developed in 2 cases (4.8%) and was resolved with percutaneous drainage on the postoperative 30th and 35th days. There were no late biliary complications that required any intervention.

Discussion:

Biliary complications, such as fistula, biloma, and stricture, are significant causes of morbidity and mortality in LDLT. We need more cases and longer follow-up results, but our results show an exceptionally low biliary complication rate of 4.8%. Therefore, we support using transanastomotic stents as advocated in the literature.

Keywords: Transanastomotic Stent, Liver Transplantation, Biliary Reconstruction, Postoperative Complications

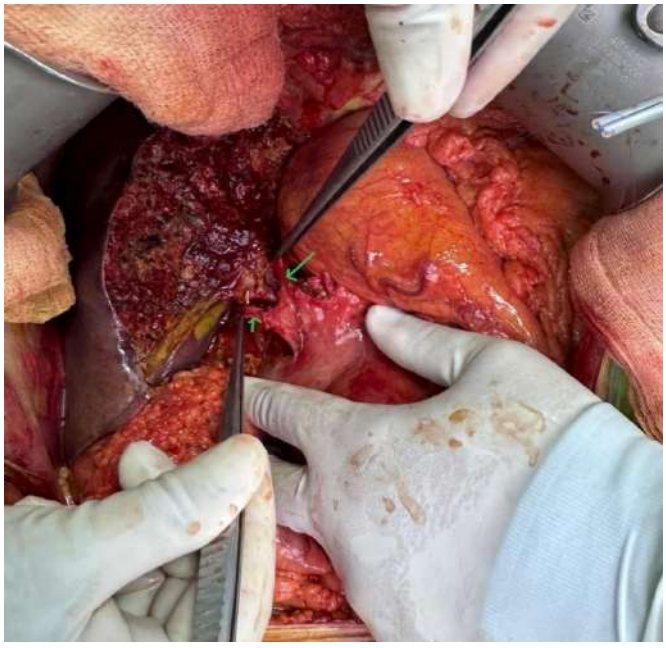

Figure 1. Evaluation of the cystic and common bile duct for anastomosis to the anterior and posterior bile ducts of the right lobe liver grafts.

Short arrow: cystic duct; long arrow: common bile duct.

5. Demanding Liver Transplant Procedures Performed in Our Institution

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Introduction:

Liver transplantation is the only definitive treatment for end-stage liver failure. This study aims to present our experience regarding managing a demanding recipient procedure that was out of the ordinary.

Case Report:

A 53-year-old male patient had been treated for Hepatitis B virus infection for 14 years. He had previously undergone a right hepatectomy in 2020 due to hepatocellular carcinoma. A cadaveric liver transplant was planned for end-stage liver failure.

During recipient hepatectomy, severe perihepatic adhesions from the previous surgery were dissected, and the hepatoduodenal ligament was explored.

The previously ligated right hepatic artery stump was not found, and the left hepatic artery and proximal arterial flow were insufficient. Therefore, a graft was taken from the iliac artery, and reconstruction was performed between the supraceliac aorta and the hepatic artery. Concurrently, portal vein thrombosis was present, and after thrombectomy achieved sufficient flow, portal vein anastomosis was completed.

The surgery lasted 15 hours, with no major complications observed in the early postoperative period. The patient was discharged on postoperative day 30 without issues.

Discussion:

Liver transplantation is a complex surgical procedure, and demanding situations are occasionally encountered. An experienced and multidisciplinary team is crucial for successfully managing such a demanding case.

Keywords: Liver transplantation, iliac artery graft, liver failure, challenging liver transplant cases

6. Superior Mesenteric Artery Syndrome, Hiatal Hernia, and Nutcracker Syndrome Combination: Case Presentation and Review of Literature

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Introduction:

The duodenum and left renal vein lie within the aortomesenteric angle, leading to the definition of two distinct compression syndromes. Due to their similar localization, superior mesenteric artery syn-

drome (SMAS) and nutcracker syndrome (NCS) can occur together. SMAS can cause increased intraluminal pressure, leading to mucosal defects in the stomach and esophagus and hiatal hernia. We aimed to present the first two cases in literature with these three pathologies simultaneously treated in a single surgery.

Methods:

Between May 2021 and September 2024, two patients who underwent simultaneous surgeries for SMAS, NCS, and hiatal hernia from a cohort of four patients treated for SMAS were included in the study. Preoperative symptoms, body mass index (BMI), radiological and endoscopic findings, surgical details, postoperative hospitalizations, and complications were recorded.

Results:

Both patients were male, aged 25 and 40, with BMIs of 16 and 14, respectively. Their symptoms included postprandial pain, vomiting, regurgitation, and weight loss. One patient had a history of two previous surgeries for a hiatal hernia. The patients underwent duodenojejunostomy, Nissen fundoplication, and renal vein transposition. Both patients received anticoagulant therapy postoperatively. One patient had a delayed gastric emptying, requiring an 18-day hospital stay, while the other experienced pneumonia, anastomotic bleeding, and hoarseness, requiring a 25-day stay. No late complications were observed in either patient.

Discussions:

SMAS should be considered in cachectic patients with dyspeptic complaints. Due to similar localization, NCS should be ruled out radiologically in these patients. Endoscopic evaluation of SMAS patients is crucial to exclude mucosal damage and coexisting hiatal hernia. Delayed diagnosis of these syndromes, prioritization of other differential diagnoses, or failure to perform simultaneous surgeries can lead to complications and inappropriate surgeries. Simultaneous surgeries can be safely performed in patients with these combined diagnoses.

Keywords: SMA Syndrome, Nutcracker Syndrome, Hiatal Hernia

7. Multiple Complicated Enteroenteric Intestinal Fistulas Due to Crohn's Disease: A Rare Case Report

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Introduction:

In various studies, fistula formation has been reported in 20-40% of cases of Crohn's disease. Ileosigmoid fistulas are common complications of Crohn's disease with terminal ileum involvement and represent the most frequently observed fistulas between two intestinal segments. Other potential complications of Crohn's disease include enteroenteric, gastroduodenal, duodenocolic, enterovesical, rectovaginal, and perianal fistulas. These fistulas, with challenging treatment protocols, are associated with mortality rates of approximately 6-10%. This report aims to present the diagnosis, surgical treatment, and follow-up process of a case with internal fistulas and complications due to Crohn's disease.

Case Report:

A 54-year-old male patient with a diagnosis of Crohn's disease presented to our clinic with complaints of abdominal pain, diarrhea, and approximately 15 kg weight loss over the past year. He had no previous surgical history. On examination, there was tenderness in the lower abdominal quadrants. Laboratory tests revealed elevated C-reactive protein and white blood cell (WBC) count.

Abdominal ultrasonography (USG) showed wall thickening in the terminal ileum. A computed tomography (CT) enterography scan was performed, revealing wall thickening in the terminal ileum, suspected fistulas between the duodenum and cecum and between the terminal ileum and sigmoid colon, and lymphadenopathies (Figure 1A-D). Colonoscopy showed fistula orifices in the sigmoid colon and terminal ileum. Based on these findings, the patient underwent surgery.

Intraoperatively, millimetric lesions resembling carcinomatosis were observed in the mesentery of the small intestine, along with fistulas between the terminal ileum and sigmoid colon and between the duodenum (2nd-3rd segment) and cecum. Frozen section samples were taken from the millimetric lesions due to suspected carcinomatosis, and the results were benign.

The surgical procedures included ileocecectomy, fistulectomy of the

Figure 1. CT Enterography Findings. Coronal (A, B) and sagittal (C, D) MIP (Maximum Intensity Projection) images. Wall thickening and enhanced contrast are observed in the 2nd-3rd part of the duodenum (yellow star), terminal ileum (blue star), and cecum (red star) (A). The lumens of these structures, represented by the same colors, show connections with the sigmoid colon (green line) via tract-like structures (white lines) and fistulization (blue circle) (B). Sagittal images (C, D) reveal a thick-walled fistula tract (C, white arrow) and the fistula tract (D, blue area).

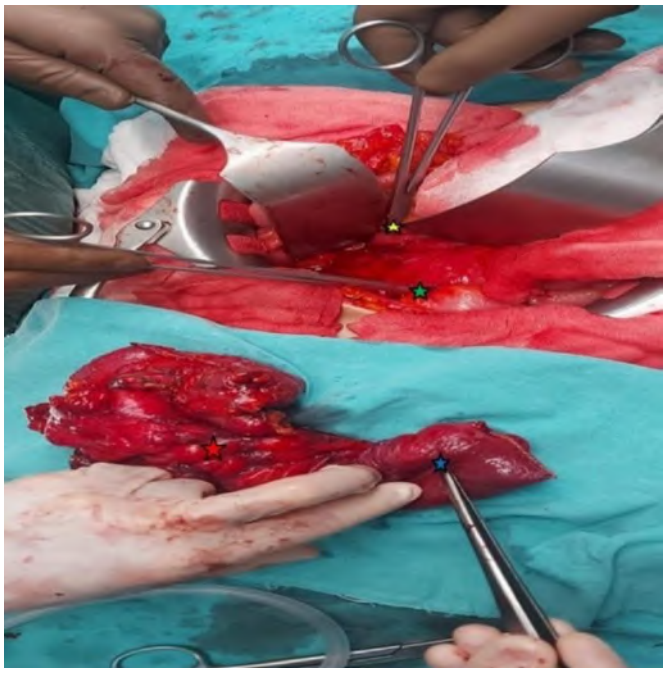

Figure 2. Duodenum's 2nd-3rd parts (yellow star), sigmoid colon (green star), terminal ileum (blue star), and cecum (red star).

duodenal fistula using a linear stapler with duodenal repair, and primary repair of the sigmoid colon fistula site with Vicryl sutures (Figure 2). The patient was monitored in the intensive care unit for one day postoperatively, oral feeding was initiated on day 3, and the patient was discharged on day 8. No postoperative complications were observed. Pathology results confirmed Crohn's disease.

Discussion:

Fistula formation is a serious complication of Crohn's disease. Treating enteroenteric fistulas is complex and requires a multidisciplinary approach. Patients should be referred to specialized centers. Our case serves as an example of diagnosing and surgically managing internal fistula formation due to Crohn's disease.

Keywords: Crohn's Disease, Enteroenteric Fistulas, Surgical Treatment

8. A Rare Complication of Gastric Balloon: Gastric Perforation

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Introduction:

Obesity is a significant health and socioeconomic problem that severely affects quality of life. Gastric balloon applications are increasingly popular in the treatment of obesity. Their reversible nature, lower risks, and fewer complications compared to surgical procedures make them an appropriate option for patients who refuse surgery or cannot undergo it due to comorbidities. Complications of intragastric balloon applications are rarely encountered. Gastric balloons have been used for a long time in the treatment of morbid obesity. Although complications related to the procedure are rare, the most serious reported complications include esophageal or gastric perforations, intestinal obstruction, and death. This study aims to highlight that rare complications can occur, emphasizing the importance of monitoring patients closely.

Case Report:

A 58-year-old female patient weighing 165 kg and measuring 170 cm in height had a swallowable gastric balloon inserted three weeks prior. She was admitted to another center with a three-day history of abdominal pain. After the necessary evaluations, she was referred to our institution with a preliminary diagnosis of gastrointestinal perforation and umbilical hernia.

Upon arrival, the patient exhibited signs of acute abdomen and experienced cardiac arrest in the emergency room. Following five minutes of cardiopulmonary resuscitation (CPR), a pulse was obtained. The patient was taken to surgery urgently with inotropic support. During the surgery, a perforated area measuring 10x6 cm was identified along the lesser curvature of the stomach caused by the balloon (Figures1A and B).

Approximately 7000 cc of food residue was aspirated from the abdominal cavity. The patient experienced another cardiac arrest during the surgery but regained a pulse after CPR. The perforated area in the stomach was resected, and three drains were placed in the abdomen before concluding the operation.

Figure 1. (A) The perforation area on the anterior surface of the stomach. The Injury site is repaired primarily (B) The Gastric band that is removed from the abdominal cavity.

Postoperatively, on the first day, the patient exhibited septic shock and suffered a cardiac arrest. Despite effective CPR, no response was obtained, and the patient was declared as exitus.

Discussion:

Gastric balloons are a less risky alternative to surgical treatments for overweight and obese patients. Close monitoring is recommended for patients at potential risk during the procedure. Early intervention during close monitoring can address possible complications promptly. Close monitoring after balloon insertion in high-risk patients can be life-saving.

Keywords: Gastric balloon, perforation, obesity

9. Laparoscopic Repair of Iatrogenic Colon Perforation During Colonoscopy

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Introduction:

Iatrogenic colon perforations occur in less than 1% of screening colonoscopies but can reach up to 80% in therapeutic procedures. Treatment options include endoscopic repair, conservative approaches, and surgical repair. In recent years, minimally invasive approaches have become prominent in all fields of surgery, including the treatment of this condition. The aim of minimally invasive treatment is to provide positive outcomes such as reduced intra-abdominal trauma, less postoperative pain, and early discharge. In this study, we aim to present a case in our clinic where a successful laparoscopic repair was performed for a colon perforation that occurred during screening colonoscopy.

Case Report:

A 75-year-old patient with a history of coronary artery disease and chronic obstructive pulmonary disease was referred to our clinic for a screening colonoscopy due to anemia. During the initial stage of the colonoscopy, a perforation approximately 0.5 cm in size was observed in the mid-section of the sigmoid colon. Two clips were applied, but as they were deemed insufficient, the procedure was terminated, and the patient was admitted for surgical treatment.

Approximately 3 hours later, the patient underwent surgery. Diagnostic laparoscopy revealed a perforation site of approximately 1 cm on the anterolateral mid-section of the sigmoid colon with no contamination in the abdominal cavity. The perforation site was repaired laparoscopically with a double-layer suture, and the operation was concluded. The patient was discharged uneventfully on postoperative day 6.

Discussion:

Iatrogenic colon perforations during colonoscopy are detected during the procedure in approximately 45-60% of cases, and early intervention provides an advantage for patient recovery. In this case, the perforation site was identified during the procedure. The most common perforation site reported in the literature is the sigmoid colon, which aligns with our case. Similar to the literature, barotrauma was the major contributing factor to perforation in our case. Laparoscopic repair of perforations has been shown to be safe in elderly patients, and our patient was elderly, male, and had comorbid conditions.Iatrogenic colon perforations observed during colonoscopy can be safely and effectively repaired using laparoscopic methods. Identifying the perforation during the procedure is crucial for early intervention and favorable treatment outcomes.

Keywords: Colonoscopy, Iatrogenic colon perforation, Laparoscopic repair

10. Does Splenectomy Affect Mortality and Morbidity in the Postoperative Period of Gastric Cancer?

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Introduction:

To evaluate mortality and morbidity during the postoperative 90-day period in gastric cancer patients undergoing total/subtotal gastrectomy and D2 lymph node dissection with additional splenectomy for various reasons.

Methods:

Gastric cancer patients who underwent total/subtotal gastrectomy, D2 lymph node dissection, and splenectomy between January 2019 and October 2024 were retrospectively analyzed.

Results:

Two (20%) patients were female, with a mean age of 71.1 years. The median operation duration was 4 hours 37 minutes (range: 2 hours 5 minutes to 8 hours 45 minutes). The average hospital stay was 24.7 days. Subtotal/total gastrectomy and D2 lymph node dissection with splenectomy were performed on all patients, with 90% elective surgeries and 10% performed urgently due to tumor perforation.

In the postoperative 90-day period, complications were observed in 30% of patients. Infection sites (wound infection in one patient and intra-abdominal abscesses in two patients) were identified as complications. One patient underwent reoperation due to evisceration. No anastomotic leakage, fistula, bleeding, or mortality was observed in this series of ten patients.

Discussion:

Postoperative complications are a critical concern in clinical practice. Meta-analyses of the literature have shown that morbidity in splenectomy groups is not significantly higher than in spleen-preserving groups. However, some studies suggest that combining splenectomy with gastrectomy increases the risk of morbidity, negatively impacting postoperative recovery. Our results showed that there are no significant early postoperative complications detected in patients undergoing concomitant splenectomy. Subgroup analyses based on different study designs confirmed this finding. While previous studies highlight pancreatitis, anastomotic leakage, abdominal abscess, wound infections, and intestinal obstruction as common postoperative complications following splenectomy, our study demonstrated a low complication rate. No significant difference in mortality was observed between splenectomy and spleen-preserving groups. This retrospective study highlights the need for high-quality, well-

designed, large-scale clinical trials that compare splenectomy with spleen-preserving procedures in a controlled and randomized manner, with short- and long-term assessments.

Keywords: Splenectomy, Gastric cancer, D2 lymph node dissection, Spleen-preserving gastrectomy

11. Pneumatosis Cystoides Intestinalis: Resection of Cysts Without Bowel Resection (First in Literature)

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Introduction:

Pneumatosis Cystoidis Intestinalis (PCI) is a rare condition characterized by gas-filled cysts in the intestinal wall. Some cases present with spontaneous pneumoperitoneum due to ruptured cysts, while others may exhibit acute abdomen-like symptoms due to air retention. The etiology is unclear, with hypotheses suggesting bacterial, mechanical, surgical, or pulmonary origins. Treatments include hyperbaric oxygen, steroids, and surgery. While imaging or incidental findings are cited as diagnostic methods, most cases in studies and reports are diagnosed intraoperatively.

Case Report:

A 27-year-old male patient undergoing amphetamine addiction treatment presented with a five-day history of persistent abdominal pain. Physical examination revealed abdominal distension and tenderness. Imaging showed subdiaphragmatic free air, and CT scans indicated free intra-abdominal air with septation, leading to a delayed perforation diagnosis. Laparotomy revealed gas-filled cysts, averaging 25 cm in length, scattered along the small intestine with 30-40 cm of intact bowel segments in between (Figure 1). No intestinal content or contaminated fluid was found. Resection of four different segments, which would result in short bowel syndrome, was avoided. Instead, the cysts were punctured with electrocautery. Additional cysts in the mesentery were excised, and cysts on the serosal surface were removed using Metzenbaum scissors. Despite resecting approximately 80 cm of bowel, no postoperative leakage or septic conditions occurred. The patient was discharged uneventfully. During a one-year follow-up, the patient experienced one ileus episode, treated non-operatively.

Discussion:

There are many cases where patients with pneumoperitoneum are mistakenly diagnosed with perforation and undergo unnecessary surgical interventions. Although no direct link between amphetamine use and PCI has been established, there may be an indirect association. Amphetamines negatively affect the intestines (vasospasm, ischemic damage, motility disorders, increased intraluminal pressure, and inflammation), potentially contributing to PCI development. The damage caused by amphetamines to intestinal tissue may predispose patients to PCI. The literature primarily includes case reports with no specific treatment protocols for PCI. Surgical interventions generally involve resection. This case represents the first instance of successful cyst resection without bowel resection, demonstrating its effectiveness.

Keywords: Acute abdomen, Amphetamines, Pneumatosis

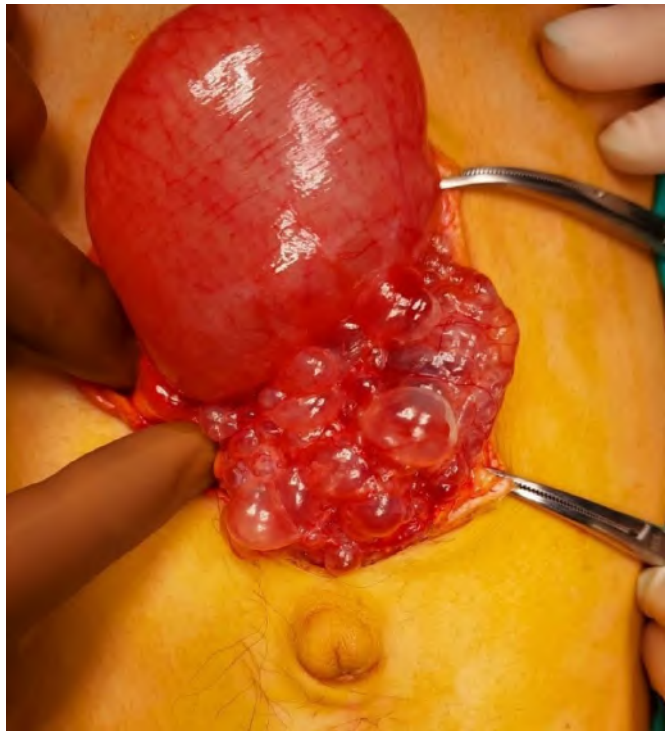

Figure 1. Cystic structures on the intestines during laparotomy.

12. Stricture Due to Igg4-Related Disease Mimicking Perihilar Cholangiocarcinoma: Case Report

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Introduction:

IgG4-related disease can mimic perihilar cholangiocarcinoma by causing short or long segment biliary strictures. The aim of the present study is to evaluate and share our treatment algorithm in patient who was assumed to have cholangiocarcinoma but finally diagnosed as IGG4 related disease.

Case Report:

A 30-year-old male presented to the emergency department with symptoms of obstructive jaundice: total bilirubin 7.6 mg/dL, direct bilirubin 7.2 mg/dL, GGT 276 U/L (<61). CT revealed normal liver vasculature and dilated intrahepatic bile ducts. MRCP identified a stricture dividing the right and left bile ducts, with no mass observed.

Percutaneous transhepatic cholangiography indicated a tumor-like obstruction in the hilar region without findings of sclerosing cholangitis, and bilateral external drainage was performed. Serum IgG4 levels were within normal limits. Despite the patient's age being atypi-

cal, perihilar cholangiocarcinoma could not be ruled out. Extensive hepatobiliary resection was planned, and the right portal vein was embolized percutaneously to enlarge the left lobe.

During surgery, a tumor that did not reach the peritoneum was palpated in the perihilar region. A right hepatectomy, total caudate lobectomy, and Roux-en-Y hepaticojejunostomy were performed. No malignancy was detected in the specimen, which revealed xanthogranulomatous cholecystitis and findings consistent with IgG4-related disease, although not meeting definitive diagnostic criteria.

At 9 months postoperatively, asymptomatic ALT (67 U/L) and GGT (182 U/L) elevations were observed. IgG4 levels remained normal, but MR imaging with gadolinium indicated inflammation-related areas in the liver. The patient was started on 30 mg/day prednisolone, and biochemical findings normalized within a month. Steroid doses were gradually tapered, and azathioprine was added. No clinical or biochemical issues were observed during six months of follow-up.

Discussion:

Recurrence can occur in the remaining liver in cases diagnosed with IgG4-related disease after hepatobiliary resection for suspected perihilar cholangiocarcinoma. Lifelong follow-up is necessary, and immunosuppressive therapy should be initiated if biochemical or radiological findings emerge.

Keywords: Perihilar cholangiocarcinoma, IgG4-related cholangitis, Klatskin tumor, sclerosing cholangitis, xanthogranulomatous cholecystitis

13. Cytoreductive Surgery and Hyperthermic Intraperitoneal Chemotherapy Case in a Liver Transplant Recipient

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Introduction:

Cytoreductive surgery combined with intraperitoneal chemotherapy (SRC+HYPEC) is an effective treatment modality for peritoneal malignancies, including pseudomyxoma peritonei, malignant peritoneal mesothelioma, colon cancer, gastric cancer, and ovarian carcinoma. SRC+HYPEC has significantly improved overall survival rates in colorectal cancer with peritoneal dissemination, achieving a 5-year survival rate of up to 45% with complete cytoreduction. De novo malignancies can also develop following liver transplantation, where SRC+HYPEC can be safely performed.

Case Report:

A 54-year-old male patient who underwent liver transplantation for ethanol-induced liver cirrhosis developed right-sided colon cancer with peritoneal metastasis four years post-transplant. The patient received six cycles of FOLFOX chemotherapy and subsequently underwent SRC+HYPEC (Figures 1A and B). The postoperative period was uneventful.

Discussion:

SRC+HYPEC is now considered the gold standard treatment for colorectal cancer with peritoneal dissemination. Key prognostic indicators include a reduction in the peritoneal carcinomatosis index and

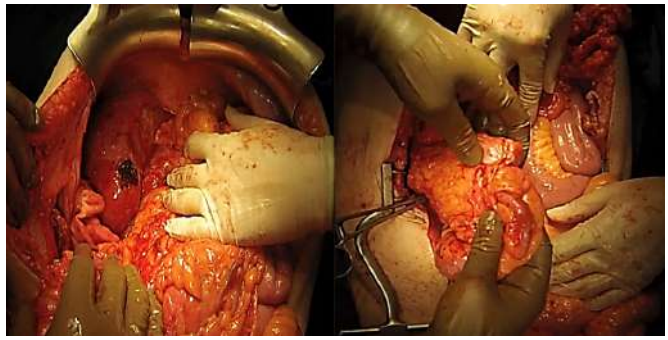

Figure 1. (A) The de novo right-sided colon cancer in our transplant recipient (B)The peritoneal dissemination of the tumor.

achieving complete cytoreduction. Colorectal cancer is a prevalent de novo malignancy following liver transplantation, underscoring the importance of pre- and postoperative screening programs. The success of SRC+HYPEC is influenced by factors such as the peritoneal carcinomatosis index, operative duration, and blood loss, all of which necessitate careful patient selection for the procedure.

Keywords: Liver transplantation, Cytoreductive surgery, HIPEC

14. Combined Complications After Whipple Procedure: Intraluminal Bleeding And Pancreatic Fistulas

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Introduction:

Despite improved surgical experience and patient management, mortality rates are decreasing, but morbidity remains a concern even in high-volume centers. Postoperative complications are now managed with multidisciplinary approaches. Rare complications that can lead to mortality may occur in combination. Our goal is to present the combined complications we encountered and their management in this case.

Case Report:

A 58-year-old male underwent pancreaticoduodenectomy due to a mass in the pancreatic head. On postoperative day 3, the drain amylase level was consistent with a pancreatic fistula. On day 5, the patient developed hematemesis during intensive care follow-up. Gastroscopy revealed hemorrhage at the gastrojejunostomy anastomosis, which was treated with sclerotherapy.

On day 8, CT imaging showed dilated small intestines, gastrojejunostomy, and jejunojejunostomy with proximal dilation. Additionally, bile began to drain from abdominal drains. During surgery, disruption of the jejunojejunostomy anastomosis was noted and repaired. Separation of 30% of the pancreatojejunostomy and hepatojejunostomy anastomoses was observed. Pancreatojejunostomy was reinforced, the omega loop was dismantled, and a Roux-en-Y anastomosis was performed. The patient was discharged on postoperative day 45.

Discussion:

Complications after pancreaticoduodenectomy, especially postoperative pancreatic fistulas, are serious conditions that can lead to mortality. Combined complications complicate postoperative management and require a multidisciplinary approach. Effective management of such cases necessitates collaboration between interventional radiology, gastroenterology, and general surgery teams. Complicated complications after pancreaticoduodenectomy require experienced surgical teams and multidisciplinary approaches for effective management. This case demonstrates the importance of a multidisciplinary approach in handling combined complications.

Keywords: Whipple, Pancreatic fistula, Pancreaticoduodenectomy

15. Hepatoid Adenocarcinoma Metastasis of the Stomach Mimicking Perforation: Case Report

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Introduction:

Hepatoid adenocarcinoma is a rare neoplasm occurring in organs or tissues other than the liver, characterized by hepatocyte-like differentiation and morphology resembling hepatocellular carcinoma. The stomach is one of the most common sites for hepatoid adenocarcinomas. This report presents a case diagnosed with bile produced from intra-abdominal metastatic areas.

Case Presentation:

A 73-year-old female patient was evaluated for abdominal pain during intensive care unit admission, and free pus was detected in the abdomen. Abdominal ultrasonography revealed a non-cirrhotic liver parenchyma, and viral serology was negative. WBC: 11.6; CRP: 174 mg/L. Radiological imaging showed no perforation.

USG-guided paracentesis revealed bile content, leading to a suspicion of acute abdomen, and the patient underwent diagnostic laparotomy. No perforation was detected in intra-abdominal organs during exploration. Excisional biopsy samples were taken from several omental implants, and cholecystectomy was performed (Figure 1A). Histopathological evaluation confirmed hepatoid adenocarcinoma metastasis of gastric origin (Figure 1B).

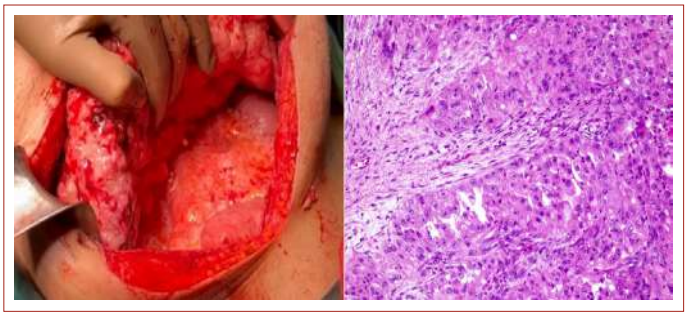

Figure 1. (A) Intraoperative view of the patient (B)Microphotograph of polygonal-shaped cell islands with prominent eosinophilic cytoplasm belonging to hepatoid adenocarcinoma (Hematoxylin & Eosin stain, X200).

Discussion:

Hepatoid adenocarcinoma of the stomach is typically seen in advanced age and exhibits an aggressive clinical course with poor prognosis. Diagnosis is usually made in advanced stages due to the lack of specific clinical symptoms and imaging findings. In this case, bile formed with hepatocyte-like differentiation facilitated the decision for emergency surgery. There is no standard treatment for this neoplasm, which can occur in various organs. Further studies are needed to develop better diagnostic and treatment plans.

Keywords: Hepatoid adenocarcinoma metastasis, Perforation, Surgery

16. Our Experience With Malignant Gallbladder Tumors

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Introduction:

Gallbladder malignancy is the most common and aggressive malignancy of the biliary tract and ranks as the 5th most frequent tumor in the gastrointestinal system. It is a rare disease. Gallbladder cancer remains a highly mortal disease, as only a small portion of patients are diagnosed at a stage amenable to surgical resection. It may present as direct invasion into adjacent organs, local lymph node metastasis, diffuse metastatic disease, or incidentally during cholecystectomy.

This study aims to present patients diagnosed with malignant gallbladder tumors following surgery at our center.

Methods:

A retrospective evaluation was conducted of 11 patients diagnosed with malignant gallbladder tumors among 6200 cholecystectomy cases performed for various indications in our clinic between September 2019 and September 2024.

Results:

The mean age of the 11 patients with malignant gallbladder tumors was 70 (range: 48–82 years); 2 (18%) were male, and 9 (82%) were female. Malignancy was incidentally detected post-laparoscopic cholecystectomy in 6 patients. Pathological reports of laparoscopic cholecystectomy cases indicated 4 as pT2, 1 as pT1, and 1 as pT3. Three patients subsequently underwent definitive surgery.

Post-definitive surgery pathology revealed no malignancy, and the average hospital stay was 13 days. Postoperative complications included wound infection in 1 patient and ileus in another, the latter requiring surgery for adhesiolysis. One patient was urgently operated on due to gallbladder perforation, with pathology reported as pT3N1.

Four patients suspected of malignancy underwent open surgery. Among these, 1 was reported as pT2, 1 as pT3N2MX, 1 as pT4, and 1 as pT3N1. The patient reported as pT3N1 died on postoperative day 63 due to comorbid conditions. The average hospital stay for open surgery cases was 22 days. In total, one patient followed in the hospital died.

Discussion:

Gallbladder malignancy is a rare tumor and is generally diagnosed at advanced stages. Female gender and advanced age are demographic risk factors for gallbladder cancer. Adenocarcinoma constitutes the majority of gallbladder cancers. Surgery remains the only curative treatment for gallbladder cancer. Our study contains results consistent with the literature.

Keywords: Gallbladder, Gallbladder tumor, Adenocarcinoma, Cholecystectomy

17. Hepatocellular Carcinoma with Tumor Thrombus Extending Into the Right Atrium: Case Report

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Introduction:

Hepatocellular carcinoma (HCC) is one of the leading causes of cancer-related deaths. Risk factors include hepatitis B and C virus infections and other cirrhosis-inducing factors, although it may sometimes occur as a primary tumor. Intrahepatic vascular invasion and tumor thrombus are common in HCC. However, the extension of tumor thrombus into the inferior vena cava (IVC) and subsequently into the right atrium is rare. This case aims to present successful surgical management of an HCC case complicated by tumor thrombus extending into the IVC and right atrium.

Case Presentation:

A 72-year-old male patient presented with a mass in the right lobe of the liver. Triphasic dynamic computed tomography revealed a tumor measuring 140x130x115 mm in the right lobe of the liver. The patient's serum alpha-fetoprotein (AFP) level was 19.6, and ELISA blood values were normal. Abdominal computerized tomography revealed that the tumor thrombus was observed to extend through the inferior vena cava (IVC) into the right atrium (Figure 1). After completing preoperative preparations, the patient underwent thromboendovenectomy and right hepatectomy (Figure 2) . Postoperative intensive care and ward follow-ups were uneventful, and the patient was discharged on postoperative day 5. At the one-month follow-up, the AFP level was 3.8, and no residual tumor was detected on CT imaging. The patient remains stable (Figure 3).

Figure 1. CT image showing the tumor in the right lobe of the liver and the thrombus extending from the inferior vena cava (IVC) into the right atrium.

Discussion:

In cases where hepatic tumors are resectable, complete removal of the primary tumor and associated thrombotic mass is possible with surgical intervention. However, surgical indications must be evaluated meticulously.

Keywords: Inferior vena cava, Right atrium, Hepatocellular carcinoma

Figure 2. Images showing the tumor and thrombus during and after the surgery.

Figure 3. The CT images on the postoperative 3rd month of the patient.

18. Management of a Trapped Basket in the Common Bile Duct: Challenging Situation in Ercp

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Introduction:

Endoscopic retrograde cholangiopancreatography (ERCP) is a widely used method for managing bile duct stones. While common complications include pancreatitis, bleeding, and cholangitis, rare occurrences such as a Dormia® basket becoming trapped can also be observed. This study presents a case where a Dormia® basket trapped in the common bile duct during ERCP was removed through open surgery.

Case Report:

An 80-year-old male patient with coronary artery disease and hypothyroidism, who had experienced multiple cholecystitis attacks in the past, presented to the emergency department with complaints of jaundice, fever, abdominal pain, nausea, and vomiting. Physical examination revealed an icteric appearance and a positive Murphy's sign. Laboratory tests showed elevated bilirubin levels. Imaging identified an 11 mm gallstone in the gallbladder and a 7 mm stone in the common bile duct (choledocholithiasis).

During ERCP, stone extraction was attempted using a balloon basket; however, the basket catheter became stuck in the bile duct. Various balloons were used to attempt papilla dilation, but the basket could not be removed. Consequently, emergency surgery was planned.

During open surgery, the common bile duct was explored, and the basket and stones were successfully removed (Figures 1A and B). The patient was discharged on postoperative day 13 with a cystic duct cannula.

Discussion:

Common ERCP complications include hyperamylasemia, pancreatitis, and perforation. Basket entrapment occurs in 0.8-5.9% of cases, typically caused by large, hard stones. Various procedures have been reported for removing trapped stones and Dormia® baskets, including sphincterotomy enlargement, extracorporeal shockwave lithotripsy (ESWL), mechanical, electrohydraulic, or laser lithotripsy, dissolving agents, and percutaneous methods. When these methods fail, surgical intervention is usually necessary. ERCP is an effective method for managing biliary issues; however, sufficient expertise and resources are required to handle rare complications. If other methods fail, surgical intervention should be considered as a second-line option.

Keywords: Dormia basket, ERCP, choledocholithiasis

Figure 1. (A) Trapped basket in the common bile duct (B) The extracted stones.

19. Combined Endoscopic and Surgical Approach in the Treatment of Hepatolithiasis

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Introduction:

Hepaticojejunostomy (HJ) is a commonly used surgical approach in the treatment of severe biliary pathologies such as bile duct injuries. Over time, obstruction or stone formation can occur at the HJ anastomosis site. This case report aims to present a successful revision surgery performed using a combined endoscopic and surgical approach in a patient who previously underwent HJ due to bile duct injury and presented with obstructive jaundice due to bilateral hepatolithiasis.

Case Report:

A 50-year-old male patient developed a bile duct injury during a cholecystectomy in 2014, which necessitated an HJ. The patient presented with complaints of obstructive jaundice, right upper quadrant pain, jaundice, and loss of appetite. Laboratory tests revealed total bilirubin/direct bilirubin levels of 11.8 mg/dL / 8.5 mg/dL, alkaline phosphatase of 247, GGT of 109, and elevated AST and ALT.

Abdominal CT and MR imaging showed dilated intrahepatic bile ducts and bilateral hepatolithiasis. Additionally, dilated venous collateral vascular structures were observed in the splenic hilum and pericardial area of the stomach, suggesting secondary biliary cirrhosis. Initially, a percutaneous transhepatic catheter was placed. Since interventional radiology determined that the stones could not be removed percutaneously, surgery was planned.

The existing hepaticojejunostomy anastomosis and enteroenterostomy were evaluated. An enterotomy was performed in the afferent limb of the enteroenterostomy, allowing endoscopic access. The hepaticojejunostomy anastomosis was reached endoscopically, and the percutaneous transhepatic cholangiography (PTC) catheters were visualized.

The status of the stones was assessed via catheters, and intrahepatic bile duct stones were confirmed by cholangiography. Balloon dilation was performed to widen the hepaticojejunostomy anastomosis, removing some stones and sludge. However, due to incomplete visualization of the bile duct and insufficient anastomosis, it was decided to revise the HJ.

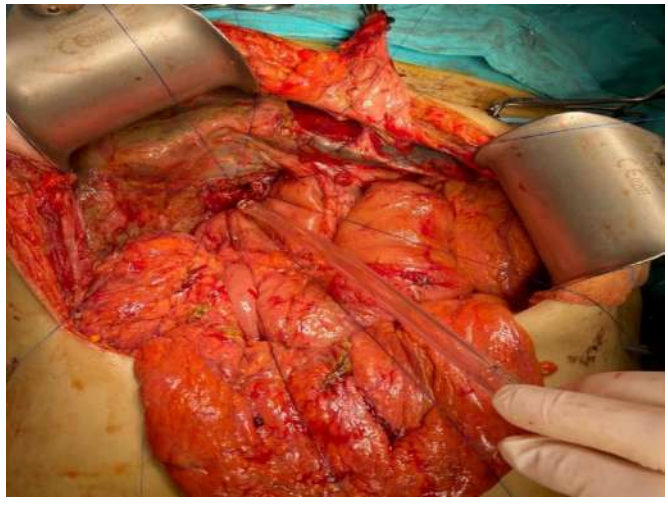

Figure 1. Dismantling of the hepaticojejunostomy.

The hepaticojejunostomy was dismantled, and anterior and posterior sector ducts of the liver's left lobe were individually cleared of stones (Figure 1). The hepaticojejunostomy was reconstructed using the Roux-en-Y method. PTC catheters were placed into the small intestine. The patient was discharged in good health on postoperative day 18.

Discussion:

The diagnosis, complications, and definitive surgical treatment of hepatolithiasis require a challenging and multidisciplinary approach. With experienced centers and a multidisciplinary approach, definitive treatment can be performed safely and effectively.

Keywords: Hepatolithiasis, Hepaticojejunostomy, Biliary stricture

20. Endoscopic Approach to Pancreatic Pseudocyst: Single-Center Experience

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Introduction:

Pancreatic pseudocyst is the most common cystic lesion of the pancreas, usually developing on a background of pancreatitis. This study aims to present cases of pancreatic pseudocyst treated with endoscopic cystogastrostomy.

Materials and Methods:

Patients who underwent endoscopic procedures for pancreatic pseudocysts between January 2021 and June 2024 were retrospectively evaluated.

Results:

Of the patients, 10 (66.7%) were female, 5 (33.3%) were male, with a mean age of 48.2 years. The etiology of pseudocysts were biliary pancreatitis in 13 (86.7%) patients and postpartum pancreatitis in 2 (13.3%) patients. Endoscopic stents were placed in 9 (60%) patients via cystogastrostomy (Figure 1). Four (26.7%) patients underwent laparotomy due to unsuccessful endoscopic procedures, and 2 (13.3%) patients underwent direct surgical cystogastrostomy. The average time between pancreatitis and invasive intervention was 115 days. Repeat

Figure 1. Endoscopic cystogastrostomy.

Table 1. The clinical and demographic characteristics of the patients

Age	Gender	Indication	Percutanous Drainage	Endoscopic Intervention	Cystogastrostomy	Duration of Hospitalization	Recurrent	Stent Placement	Follow Up (Mo)	Complications	Classifications
35	F	Postpartum biliary pancreatitis	-	successful	Endoscopic stent	45	positive	-	7	-	4
66	F	Biliary pancreatitis	-	-	laparatomy	60	-	-	7	Surgical site infection	4
33	F	Postpartum biliary pancreatitis	successful	successful	Endoscopic stent	90	positive	positive	6	-	4
24	F	biliary pancreatitis	-	successful	Endoscopic stent	60	positive	-	5	-	4
50	M	Biliary pancreatitis	-	Failure	laparatomy	150	-	-	8	-	4
69	M	Biliary pancreatitis	-	Failure	laparatomy	45	positive	-	10	Surgical site infection	4
54	M	Biliary pancreatitis	-	Failure	laparatomy	360	-	-	5	-	4
58	F	Biliary pancreatitis	successful	-	laparatomy	45	-	-	12	Intraabdominal abscess	4
61	F	Biliary pancreatitis	-	Failure	Endoscopic stent	180	positive	positive	3	-	4
46	F	Biliary pancreatitis	-	successful	Endoscopic stent	50	-	-	3	-	4
53	F	biliary pancreatitis	-	successful	Endoscopic stent	100	-	-	3	-	
56	M	Biliary pancreatitis	-	successful	Endoscopic stent	60	positive	positive	3	-	4
34	M	Biliary pancreatitis	successful	successful	Endoscopic stent	40	-	-	3	-	4
34	F	Biliary pancreatitis	-	successful	Endoscopic stent	45	positive	positive	5	-	4
50	F	Biliary pancreatitis	-	Failure	Laparotomy	70	-	-	5	Pancreatic fistula	4

procedures were required in 6 of the patients with stents and 1 patient who underwent laparotomy. Stent replacements were performed in 4 patients. According to the pan-pseudocyst classification, all patients were type 4. During an average follow-up of 7 months, 2 patients developed wound infections, 1 patient had an intra-abdominal abscess, and 1 patient experienced a pancreatic fistula (Table 1).

Discussion:

Minimally invasive endoscopic drainage with stent placement for cystogastrostomy can be considered the first-line treatment for pancreatic pseudocysts.

Keywords: Pseudocyst, Endoscopic cystogastrostomy, Pancreatitis

21. Effectiveness of Biomarkers in Predicting Recurrence in Intra-Abdominal Sarcomas

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Introduction:

The aim of this study is to investigate whether biochemical markers such as hemoglobin, albumin, lymphocyte, and platelet (HALP) scores, lymphocyte-C-reactive protein ratio (LCR), and CRP/Albumin ratio can predict survival and recurrence in patients with intra-abdominal sarcomas.

Methods:

This retrospective study included adult patients (aged 18 and older) who underwent surgery for intra-abdominal sarcoma and experienced recurrence (n=23) between January 2014 and March 2024. Patients were divided into two groups: those with recurrence (n=13) and those without recurrence (n=10). Preoperative biochemical data were used to calculate HALP, CRP/Albumin scores, and LCR ratios, and their predictive ability for early pathological findings was analyzed.

Results:

Among the non-recurrence group, 5 patients (21.7%) were male, while 6 patients (34.8%) in the recurrence group were male. The mean age of patients with recurrence was 55.44±15.27 years (range: 23-70), with an average survival of 22.44±20.68 months (range: 0-60). The mean age of patients without recurrence was 67.13±14.14 years (range: 44-79), with an average survival of 26.75±28.78 months (range: 6-84).The cutoff values for intra-abdominal sarcomas were determined as 0.68 for CRP/Albumin, 29.42 for HALP, and 0.42 for LCR. Patients with low HALP scores had significantly shorter disease-free survival (18.83 months) compared to those with high HALP scores (24.55 months, $p<0.01$). Similarly, patients with low LCR scores had significantly shorter disease-free survival (22.50 months) than those with high LCR scores (25.05 months, $p<0.01$). Patients with low CRP/Albumin values had significantly longer disease-free survival (18.63 months) compared to those with high CRP/Albumin values (29.67 months, $p<0.01$). A strong correlation was found between HALP, LCR, CRP/Albumin scores, and recurrence ($p<0.05$).

Discussion:

Low HALP, low LCR, and low CRP/Albumin scores were identified as significant independent prognostic factors for predicting postoperative overall survival and recurrence in intra-abdominal sarcoma patients.

Keywords: Intra-abdominal sarcoma cancer, biomarkers, prognosis, recurrence, survival

22. Subtotal Cholecystectomies in Difficult Gallbladder Surgeries

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Introduction:

Laparoscopic cholecystectomy is the gold standard for treating acute cholecystitis and cholelithiasis. However, in some cases, subtotal cholecystectomy may be preferred to avoid bile duct injuries.

Methods:

Ten patients who underwent subtotal cholecystectomy in our clinic between 2023 and 2024 were analyzed.

Results:

Seven patients (70%) were female, with an average age of 48 years (range: 25-78). The average hospital stay was 3.8 days (range: 1-10). All patients had acute calculous cholecystitis, and 8 (80%) had choledocholithiasis.

Preoperative ERCP (Endoscopic Retrograde Cholangiopancreatography) was performed in 7 (70%) patients, while 1 patient (10%) underwent PTK (Percutaneous Transhepatic Cholangiography). Laparoscopic surgery was completed in 9 (90%) patients, while 1 patient (10%) required conversion to open surgery. In subtotal cholecystectomy cases, the residual gallbladder stump was closed using staples in 5 (50%) patients and sutures in 5 (50%). No mortality was observed. Morbidity included wound infections in 2 (20%) patients, and postoperative atelectasis and pneumonia in 3 (30%) patients (Table 1). No bile fistula occurred.

Discussion:

The primary goal in laparoscopic cholecystectomy is safety. Subtotal cholecystectomy is a viable option for ensuring safe cholecystectomy, particularly in patients with acute episodes, a history of choledocholithiasis, or prior ERCP.

Keywords: Subtotal cholecystectomy, acute cholecystitis, ERCP

Table 1. Clinical Characteristics of the patients with subtotal cholecystectomy

Patient no.	Age	Gender	Stump Closure Methodology	Duration of Hospitalization	Preoperative interventions	Cholecystectomy type
1	63	Male	Stapler	8	-	Laparoscopic
2	77	Female	Suture	3	PTC insertion + ERCP	Laparoscopic to open conversion
3	61	Female	Suture	10	ERCP	Laparoscopic
4	37	Female	Suture	1	Cystogastrostomy	Laparoscopic
5	35	Female	Suture	1	ERCP	Laparoscopic
6	35	Male	Stapler	2	ERCP+ Cystogastrostomy	Laparoscopic
7	60	Female	Suture	3	ERCP	Laparoscopic
8	70	Male	Stapler	3	-	Laparoscopic
9	25	Female	Stapler	2	-	Laparoscopic
10	78	Female	Stapler	5	ERCP	Laparoscopic

PTC: Percutaneous transhepatic cholangio-pancreatico-ductograhy assisted catheter
ERCP: Endoscopic retrograde pancreatico-ductograhy.