

IATROGENIC BILE DUCT INJURY: DIAGNOSTIC VALUE OF MR CHOLANGIOGRAPHY

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ABSTRACT Purpose: The purpose of this study was to assess the diagnostic value of MR cholangiography in the evaluation of iatrogenic bile duct injury. Patients and **Methods:** MR cholangiography was performed in 12 patients (8 women and 4 men ranging in age from 24 to 68 years) with suspected bile duct injury following laparoscopic cholecystectomy in 6 patients, open cholecystectomy in 5 patients and hepaticojejunostomy in one patient. MR cholangiography was performed within 3-35 days after the initial surgery. MR images were evaluated for presence or absence of biliary dilatation, excision injury, stricture and fluid collection. Bile duct excision and stricture were classified according to bismuth classification which is based on the localization of biliary injury according to the distance from biliary confluence. Final diagnosis was made on the basis of findings at surgery in 8 patients, on percutaneous transhepatic cholangiography (PTC) in one patient and on endoscopic retrograde cholangiopancreatography (ERCP) and clinical follow up until hospital discharge in 3 patients. **Results:** MR cholangiography accurately assessed bile duct injury in 10 patients and cystic duct leak in 2 patients. Eight of the 10 patients showed bile duct excision injury on MR cholangiography that was surgically proved, while in the remaining 2 patients MR cholangiography detected stricture of the bile duct which was confirmed by PTC in one patient and ERCP in the other patient. Of these 10 patients, 2 patients had bismuth injury type I, 3 patients had bismuth injury type II, 3 patients had bismuth injury type III and 2 patients had bismuth injury type IV. The two patients with findings suggestive of cystic duct leak on MR cholangiography were confirmed on ERCP. **Conclusion:** MR cholangiography is an ideal, accurate diagnostic technique in the evaluation of iatrogenic bile duct injury and should be considered as the first line noninvasive diagnostic test as it allows correct classification of these injuries and helps to decide the best therapeutic approach.

LINEAR ENDOSCOPIC ULTRASONOGRAPHY (L-EUS) VS MRI IN DIAGNOSIS AND STAGING OF "EARLY" AMPULLARY TUMORS (ATS)

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Background and Aim: ATs are a rare disease, difficult to diagnose. Symptoms are usually vanishing and broad. The correct diagnosis is reached after many expensive serological, radiological and/or endoscopic tests. Biliary tract dilation is the most frequent finding detected in ATs at abdominal imaging. It also has been an impression that EUS evaluation of biliary tract dilation is a low –yield examination especially in case of clinical suspicion of AT.

The Aim was to assess the impact of linear L-EUS vs MRI in patients with biliary tract dilation and clinical suspicion of AT.

Methods: Between January 2007 and April 2009, we studied 21 Pts (13M/8F, mean age:60 yrs) referred to our Endoscopy Unit for a cholestatic syndrome (jaundice, elevated serum liver enzymes) and clinical suspicion of AT. Exclusion criteria were previously therapeutic ERCP, known biliary or pancreatic disease, advanced AT (>3 cm). All patients underwent a previous diagnostic work up by CT and MRI evaluation. Endoscopic forceps biopsies were achieved from all cases. L-EUS diagnosis was controlled by either endoscopic or surgical histology and clinical follow-up. All EUS procedures were performed from two skilled endoscopists with a lateral probe.

Results: CT imaging was not relevant in all cases; MRI failed the correct diagnosis in all but two pts; dilation of CBD+WD, dilation of CBD alone and negative for AT were diagnosed in 7, 6, 6 pts, respectively. EUS revealed the cause of jaundice in all cases and it has allowed a corrected T staging of AT in 19/21pts. The overall concordance EUS/histology was 90%.

Conclusions: EUS is a sensitive and specific technique to detect AT in case of clinical suspicion. Linear EUS confirms its superiority over other imaging modalities, in particular MRI, for "early" AT diagnosis. It allows to correctly diagnose it and to stage the mucosal infiltration of the lesion in order to direct the patient to the correct treatment. EUS should be the first choice in clinical-diagnostic algorithm of AT.

LIVER BIOPSY ON MANAGEMENT OF VIRAL HEPATITIS: IS IT YET USEFUL?

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Background: in presence of chronic viral hepatitis liver biopsy is generally requested for defining gravity of necro-inflammatory lesions (grading) and the extension of fibrosis (staging). Recently various studies have evaluated the possibility of using non invasive tests for grading and staging of viral hepatitis, as an alternative of liver biopsy. Nevertheless nobody of these tests is enough satisfactory for having introduced in clinical practice. Therefore, whenever is clinically useful knowing grading and staging of viral hepatitis, histologic exam remains the gold standard.

Methods: we have examined the database of patients with viral hepatitis on follow-up or on antiviral treatment in our Unit during the last two years. From total number of 52 patients, 40 had chronic hepatitis C, 12 chronic hepatitis B. We performed liver biopsies in 20 patients from the group with chronic hepatitis C, on the other side in all 12 patients from the group with chronic hepatitis B. Our selection criteria for performing biopsies in HCV group were: genotype 1 and 4 with HCV-RNA viral load, in prediction of therapeutic decisions and looking for other pathogenic factors (s.a. alcohol consumption, iron deposit); other genotypes in case of presence of other metabolic factors (diabetes, dyslipidemia, obesity, steathosis) or other immunomediated pathologies. In details the HCV patients submitted to liver biopsy were: one with genotype 1a, 16 with genotype 1b, one with genotype 4, two with genotype 2a/2c and associated metabolic factors. The 12 patients with chronic hepatitis B were 11 HBeAg negative (one of those with presence of delta antigen), one HBeAg positive.

Results: all liver biopsies were diagnostic. The specimens size varied from 1 to 4 cm. and all specimens were adequate for analysing grading and staging (score used in Histopathology Unit: Ishak).

In particular on HCV group we considered the high grading level and the high HCV-RNA viral load mandatory conditions for the decision of treatment. At least we treated 17 patients, excluding the other three: one had Crohn disease, one had cirrhosis and was elderly, one hadn't significant necro-inflammatory activity. On HBV group we started antiviral treatment in 11 patients, all with elevated HBV-DNA viral load and presence of high grading level and cytoplasmatic HbsAg and/or HBcAg. Only one was excluded for absence of significant necro-inflammatory activity (and absence of both HBsAg and HBcAg) and low HBV-DNA viral load.

Conclusions: our experience has furtherly suggested that up today performing liver biopsies has yet clinical importance on management of chronic viral hepatitis especially when the indication to treatment is uncertain, with the clinical data available. Last but not least, on the other side, liver biopsy may supply important signs on decision of not to treat, with a great pharmacoeconomic advantage.

MULTIDISCIPLINARY APPROACHES FOR MANAGEMENT OF POST - CHOLECYSTECTOMY PROBLEMS (SURGERY, ENDOSCOPY, AND PERCUTANEOUS APPROACHES)

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Purpose: This prospective study was undertaken to study and evaluate different techniques used in management of post cholecystectomy problems namely surgery, endoscopy, and percutaneous manipulation. **Patients & Methods:** In the period from Mars 2005 to April 2007, a randomly selected sample of 210 patients with post cholecystectomy problems (122 females and 88 males) were collected from surgery department, and managed accordingly using surgery (40 attempts), endoscopy (207 attempts), or percutaneous approaches (34 attempts). **Results:** Endoscopic (ERCP) management was done as a therapeutic approach with 183 cases, or diagnostic cholangiogram only with 24 cases. Those cases treated included stone(s) treated by extraction in 81 cases, stricture or injuries (55 cases) treated by dilatation and stenting, and bile leakage (35 case) treated by sphincterotomy and/or stenting. Percutaneous approaches were done with 34 cases by diagnostic PTC prior surgery in 19 cases, percutaneous internal biliary stenting in 2 cases of stricture, and combined with endoscopy in 13 cases. Surgery was done in 40 cases either urgent in 10 cases with biliary peritonitis (4.8% of cases), or planned in 30 cases (14.3% Of cases). The techniques were peritoneal lavage in 7 cases prior proper approach, choledocho-lithotomy in 8 cases, undo ligation and T shaped tube drainage in 5 cases, repair of CBD laceration splinted by T tube in 3 cases, choledocho-duodenostomy in 1 case, and choledocho - jejunostomy as Roux-en Y loop in 18 cases. **Conclusion:** Endoscopic approaches proved efficacy, safety, and cost effectiveness not only in diagnosis and evaluation, but also considered the main stay of treatment, especially when combined with percutaneous approaches that help in avoiding failure in some problematic cases. However surgery remains the gold standard and effective way of treatment not only for cases failed to be treated by the less invasive approaches, but in some cases that is mandatory to be expl.

RADIOLOGIC ASSESSMENT OF THE INTRA-ABDOMINAL ESOPHAGUS; AN OPERATIVE INDICATION IN GERD?

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Objective: To compare the radiologic assessment of the intra-abdominal esophageal length (IAEL) in GERD by MRI or multi-slice CT versus the manometric evaluation of the length of the lower esophageal sphincter (LES) after upper GIT endoscopy, also to see if this has an impact on the clinical course of the patient and response to medical or surgical therapy. **Methods:** Thirty patients presented by symptomatic reflux disease according to Carlsson's structured questionnaire. Investigations included upper gastrointestinal endoscopy (excluding hiatal hernia cases), esophageal manometry, Multi-slice CT and/or MRI for the lower esophagus, esophageal PH-metry to verify reflux disease. Basically all patients were treated medically, only cases of failed or poor response to medical treatment were converted to (group B) for surgery, rendering patients with good medical response as (group A). The esophageal intra-abdominal length was compared in both groups. **Results:** Medical treatment in the form of proton pump inhibitor and gastric prokinetic was successful in 21 cases (group A) with IAEL of 2 cms or more (mean 2.2+1.6 cms.) whole esophageal length (mean 38.9+1.2 cms.). Surgical treatment was done for 9 cases (group B) not well responding to medical treatment, IAEL was less than 2 cms. (mean 1.2+0.5 cms), whole esophageal length (mean 37.1 + 1.9 cms.). Carlsson's structured questionnaire score in Group A had a mean of 7.24, while Group B had a mean of 11.62 that dropped postoperatively to 7.54. Upper gastro-intestinal endoscopy demonstrated NERD cases to be 13 cases (2 of them were in group B). There was a statistically significant difference between both groups for the esophageal length using the independent groups T-test ("T" value of 3.1478), similarly the IAEL was significantly shorter in group B ("T" value of 1.8209). There was no statistic significant difference for the IAEL on radiologic or manometric evaluation (P < 0.01.). **Conclusion:** In view of evi

SINGLE WORKING INSTRUMENT, DOUBLE TROCARS, CLIP LESS CHOLECYSTECTOMY USING HARMONIC SCALPEL, A FEASIBLE, SAFE, AND LESS INVASIVE TECHNIQUE

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Aim: to evaluate safety and efficacy of harmonic scalpel in closure/division of the cystic duct and artery, and bladder dissection in laparoscopic cholecystectomy as a single working instrument, with the use of two working trocars, compared with clip/cautery, three trocars technique. Method: A prospective study included 160 patients with symptomatic gall stone disease were randomly assigned for laparoscopic cholecystectomy by either harmonic shear, with two trocars (group I = 80 patients), or group II (clip/cautery, 3 trocars) including 80 patients.

Results: No significant complications were encountered in either group; however 1 case of group II suffers mild leakage treated conservatively. Intra-operative bile spillage was insignificantly lower in group I (10% vs. 13%; $P=0.46$). The median operative time was significantly shorter in group I (20 vs. 45 minutes; $P=0.0001$). Also hospital stay was significantly shorter in group I (1 vs. 1.5 days; $P=0.001$), but no significant difference found in the incidence of post operative complications. The overall cosmetic results and patient satisfaction was better in group I. Conclusion: Harmonic shear is as safe and effective as clip/cautery technique in achieving hemo-biliary stasis; with shorter operative time especially if used solely as a working instrument. Two trocars technique is safe, feasible, and provides better cosmetic results and patient satisfaction.

SPHINCTER-SAVING APPROACH FOR LOW RECTAL CANCER

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Affiliation: sphincter-sparing for cancer rectum is amajor concern in managment of low rectal cancer

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Introduction; Colorectal cancer is the 3rd common cancer worldwide. Patients & metods :Between October 2006 and October 2008, 110 patients with rectal carcinoma located at a mean distance of 5.5 cm (range 2-7 cm) from the anal verge underwent sphincter-saving resection . **Results:** Radical resection of the tumour was achieved in 105 patients, with curative intent and palliative in 5 patients At a median follow-up time of 19 months (range 3-24 months), distant metastasis was observed in 12 patients, 4 patients with synchronous liver metastasis were treated with hepatic resection 3 months after rectal resection according to the policy of our hepatic oncology group. 5 patients developed metachronous liver metastasis after an average of 10 postoperative months were resected . One patient developed lung metastasis after one postoperative year was resected. Two patients with multiple organ metastases (liver, lung, and bone) at 9 and 13 postoperative months were treated with palliative chemoradiotherapy. Local pelvic recurrence occurred in 2 cases of stage IIIB (T4) cancer at 18 and 20 postoperative months. One patient (who developed distant metastasis at 9 postoperative months) died at 18 months postoperatively.69 patients underwent low anterior resection, 18 underwent Ultra-low anterior resection, 21 underwent intersphincteric resection, and 2 underwent total proctocolectomy with ileoanal anastomosis and J-pouch. Mean distal margin of clearance was 2.5 cm (range 1-4 cm). 94.5% of our patients received high ligation of the inferior mesenteric artery at its origin from the aorta, Lateral pelvic lymph node dissection was performed in 30% of cases. Anastomotic stenosis was recorded on 12% of cases and treated with manual dilatation, endoscopic balloon dilation, and Boogie dilators, Postoperative leakage was encountered in 17 (15.4%) patients, but only 4 cases required emergency operations.

SPYGLASS CHOLANGIOSCOPY: A LUXURY OR A USEFUL TOOL FOR BILIARY DISEASES MANAGEMENT: A SINGLE CENTER EXPERIENCE OF PERFORMANCE AND RESULTS

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Background: The SpyGlass Direct Visualisation System (SGDVS, Boston Scientific) is a novel approach to peroral cholangioscopy (PCS). It allows direct visualization of bile ducts while being able to take site directed biopsies, directly controlled wire placement and perform guided biliary stones therapy with electrohydraulic lithotripsy (EHL). **Aim** of this study is to describe the performance, safety and clinical impact of SGDVS on pts with biliary diseases in a single referral Endoscopic center. **Methods:** All pts who underwent to PCS between January and November 2009 using SGDVS were identified. Patients demographics, procedural success, clinical outcome and early/late related complications were recorded. A procedure was considered successful if diagnostic and/or therapeutic objectives were achieved. **Results:** A total of 21 SGDVS examinations were performed after conventional ERC in 21 pts (13M/8F, mean age of 59.6 yrs). The ERC findings were: biliary stenoses suspected for malignancy (n:16; 12 CBD + 3 Hilum + 1 IHDs); suspected pery or ampullary mass: (n:3); untreated biliary stones (n:2). SGDVS indications were assessment of the filling defect and further stone management using SpyGlass direct EHL. The overall procedural success rate was 100% (21/21). Bile ducts direct visualisation followed by Spy-glass directed tissues sampling (where performed) showed: CBD malignant lesions (n: 10/16); CBD benign lesions (n: 4/16), ampullary benign lesion and IHDs stone (n:1/16, respectively). SGDVS confirmed the ampullary neoplasm in 2/3 pts with peri-ampullary ERC suspected lesions. 1/3 pt had ampullary impacted stone diagnosis at SGDVS. Complete stone retrieval was achieved after SpyGlass directed EHL in 2/2 pts with ERC untreated biliary stones. SpyGlass directed tissues sampling was done in 17/19 pts (89%); In 16/17 (94%) pts it was adequated for pathologist. SGDVS results were compared according to histology and clinical follow-up. Totally, SGDVS diagnosis changed the clinical outcome in 9/21 (43%). No SGDVS related complications were observed. **Conclusion:** The SGDVS appears a safe and effective method for differential diagnosis of biliary pathology. It offers both diagnostic and therapeutic possibilities and facilitates catheterization of narrow strictures showing an havy clinical impact on patients management .

STATE-OF-THE ART MAGNETIC RESONANCE IMAGING TECHNIQUES IN DIAGNOSIS OF PANCREATIC MALIGNANCY

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Abstract:

Purpose: To study the value of MRI with different techniques in diagnosis and characterization of malignant pancreatic lesions.

Patients and Methods: Forty-three patients with medical history, clinical findings, routine laboratory and abdominal ultrasound results suggestive of pancreatic neoplasm were included in this retrospective study. Magnetic Resonance Imaging (MRI) examination of the pancreas is performed with different techniques. The Magnetic Resonance Cholangiopancreatography and the dynamic gadolinium chelate – enhanced three dimensions were done. The results of the different MR imaging sequences were compared with the final diagnosis which was established by either surgery and biopsy (34 cases) or biopsy only (9 cases).

Results: The pathological diagnosis of the malignant pancreatic lesions proved duct adenocarcinoma in 31 patients, lymphoma in 4 patients, one serous cystadenocarcinoma, 4 mucinous cystadenocarcinoma and 2 cases of papillary cyst and solid tumours. MRI could discriminate the pathologically proved 42 malignant lesions. The false diagnosis was a case of focal chronic pancreatitis which was classified as malignant lesion. The sensitivity, specificity, positive prediction and the negative prediction values of MRI for diagnosis of pancreatic malignancy were 100%, 94.7%, 97.6% and 100% respectively. In the 31 patients with adenocarcinomas, MRI could discriminate the Locoregional extension and vascular involvement, while MRCP proved pathologic involvement of both main pancreatic duct (MPD) and common bile duct (CBD) in 18 patients, CBD alone in 7 patients, MPD alone in 3 patients and normal both CBD and MPD in 3 patients. Also, in patients with adenocarcinoma, the mean values of apparent diffusion coefficient were below $130 \times 10^{-5} \text{mm}^2/\text{sec}$. in 28 lesions and lies between 130 and $160 \times 10^{-5} \text{mm}^2/\text{sec}$. in the other 3 lesions.

Conclusion: MRI with different techniques could be valuable for the early diagnosis of malignant pancreatic diseases, defining the origin of the lesions as well as their regional extensions.

Key Words: MRI, MRCP, Adenocarcinoma, Cystadenocarcinoma

SURVIVAL AFTER PANCREATICODUODENECTOMY FOR PERIAMPULLARY CARCINOMAS

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Although the safety of pancreaticoduodenectomy has notably improved over the past several decades, the reported survival of patients with periampullary carcinomas remains poor. We hypothesized that, in recent years, the survival of patients with periampullary carcinomas following pancreaticoduodenectomy has substantially improved. DESIGN: Retrospective case series. SETTING: Mansoura Gastroenterology Surgical Center, Mansoura University. PATIENTS: Five-hundred and fifty-five consecutive patients underwent pancreaticoduodenectomy for periampullary carcinomas between 1989 and 2008. Patients from 1989-1998 (Group I) were compared with patients from 1999-2008 (Group II). INTERVENTIONS: Pancreaticoduodenectomy (standard Whipple resection) procedure was done for all patients. MAIN OUTCOME MEASURES: Survival after pancreaticoduodenectomy. The effects of various factors on patient survival after resection were studied. RESULTS: During the time period analyzed, 555 patients underwent pancreaticoduodenectomy to treat periampullary carcinomas. There were no operative deaths. Hospital mortality was 34/555 (6.1%); 22/105 (21%) among group I and 12/450 (2.7%) among group II ($p < .05$). Missed cases from follow up were 51/555 (9.2%). One year survival was 353/543 (65%); 45.5% (Group I) and 69.5% (Group II). Three years survival was 173/433 (39.9%); 26.8% and 43.8% respectively. Five years survival was 50/335 (14.9%); 10.6% and 16.6% respectively. Both groups had equivalent demographic and pathological characteristics. Predictors of poor survival were pancreatic carcinoma, poorly differentiated tumors, lymph node metastases, perineural invasion, operative blood loss of more than 500 mL, and undergoing an operation before 1998

THE ART AND SCIENCE OF TIMING LIVER TRANSPLANTATION

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The timing of LT is an important, yet difficult, issue. Timing depends on understanding the natural history of the patient's disease, as well as patient-specific factors. LT should be performed before the patient has experienced complications that endanger life and early enough so that a satisfactory outcome is probable. However, LT should not be performed too early given the shortage of organs, the risk of surgery, and the cost and risks associated with chronic immunosuppression. LT should be timed by combining the best objective prognostic data with subjective assessment of the individual patient. Patients who are too well should not be transplanted. Likewise, transplantation of patients who are too sick is associated with poor outcomes.