

Conclusion While the presence of infected necrosis or persistent organ failure in SAP (group III) is associated with high mortality, the combination of “infected necrosis and persistent organ failure” (group IV) is uniformly fatal. Further research is necessary to confirm the findings in our study and to explore ways of optimising patients in group III to improve survival.

Competing interests None declared.

PWE-136 PRE-OPERATIVE ERCP, CHOLECYSTITIS AND MALE GENDER ARE THE MAJOR PREDICTORS OF DIFFICULT CHOLECYSTECTOMIES/CONVERSION TO OPEN SURGERY

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Introduction Conversion to open surgery used to be a marker of difficult cholecystectomy. With increasing experience conversion rate has reduced significantly, but the difficulties remain the same. Both, conversion and difficult cholecystectomy have impact on operation time. The aim of this study is to identify the major predictive factors for “difficult” cholecystectomies, which are either continued laparoscopically or subsequently converted.

Methods A retrospective review of all the consecutive laparoscopic cholecystectomies, performed by a single surgeon, in a district general hospital in the UK, from January to December 2011, was undertaken. Association of intra-operative difficulties or conversion to open surgery, with the following factors was studied—Age, gender, liver function tests, jaundice, cholecystitis, pre-operative ERCP, pancreatitis, and radiological findings.

Results During the study period 180 patients underwent cholecystectomy, of which 10 were converted to open surgery (5.6%), while 30 (16.6%) others were deemed “difficult dissections” but the operations were still completed laparoscopically. Previous cholecystitis (n=45) seems to be the most important predictor of difficulty, with 71% of patients requiring conversion or being considered a “difficult dissection.” Another very useful predictor is previous ERCP (n=14), with 64.5% of these patients being either conversions or “difficult dissections.” The conversion rate and difficult laparoscopic dissection rate was 8% and 24% respectively for men (n=37) and 5% and 15% for women (n=143). Among the patients with previous pancreatitis, none required conversion and 29% had difficult dissections. The conversion and difficult dissection rates increased with age (7% and 4% for age<40, 20% and 1% for age 40–60, and 20.5% and 9.5% for age>60 respectively).

Conclusion Bile duct stones managed with pre-operative ERCP, cholecystitis and male gender appear to be the major predictors of difficult cholecystectomies/conversion to open surgery. This ability to predict the difficulty of the procedure might help the surgeon prepare for any technical difficulties that may arise, organise the theatre list more efficiently, and offer the patient more accurate information and counselling prior to the procedure.

Competing interests None declared.

PWE-137 THE ROLE OF ^{99m}TECHNETIUM-LABELLED HEPATO IMINO DIACETIC ACID (HIDA) IN THE MANAGEMENT OF BILIARY PAIN

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Introduction Biliary pain is a common presentation in the acute surgical take and the surgical clinic. In patients with normal

ultrasound findings, symptoms can sometimes be disregarded as being non-specific. We propose that in this cohort, a HIDA scan is a useful investigation, and patients with a positive test have good results following cholecystectomy.

Methods We obtained reports of all HIDA scans with an abnormal ejection fraction (EF <40%) performed in our centre from 15 May 2007 to 28 December 2010. This database was cross-linked with a prospectively-maintained database and electronic records of patients undergoing cholecystectomy in the same period. All patients with a positive HIDA who went on to have laparoscopic cholecystectomy (LC) were followed-up by a review of the electronic records, and a telephone interview to assess symptom improvement.

Results 50 patients were investigated. Mean age was 48, and majority were female. Ultrasound findings revealed no stone disease and normal gall bladder in 96%. 92% of patients were happy with the decision to proceed with LC, and 87.5% felt that their symptoms were improved (62.5% “Very Much Improved”). Post-operatively, 56.3% had no residual pain whatsoever and 31.3% had only occasional mild discomfort. The histology was pathological in 83%; 29% had stones in the gall bladder. During the HIDA scan, injection of a CCK-analogue caused pain in 56%. Symptoms were “Very Much Improved” after LC in 74% and 44% respectively in the responders and non-responders to CCK-analogue injection. The sensitivity of CCK-analogue injection was 68% and specificity was 50%.

Conclusion HIDA scan is a useful clinical tool in the diagnosis and management of patients with typical biliary pain and normal ultrasound. Outcomes following LC in this cohort of patients are favourable, with high patient satisfaction. The injection of a CCK analogue is a sensitive adjunct to the test, but non-response does not rule out benefit from LC.

Competing interests None declared.

PWE-138 THE INCIDENCE AND MANAGEMENT OF CYSTIC DUCT STONES: THE INTRA-OPERATIVE CHOLANGIOGRAM IS MORE THAN JUST A DIAGNOSTIC TOOL

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Introduction Use of the Intraoperative cholangiogram (IOC) was introduced by Mirizzi in 1931, who recommended its routine use. Currently, routine IOC during laparoscopic cholecystectomy (LC) remains a controversial issue. Unsuspected common bile duct (CBD) stones are reported in only between 2% and 3% of cases, whereas “post-cholecystectomy syndrome (PCS),” is reported in 10% - 40%. A potential cause of this is retained stones within the cystic duct (CD) remnant. We aimed to identify the intra-operative incidence of CD stones and the incidence of post-operative complications following routine IOC.

Methods We analysed a prospectively maintained database of all LC and routine IOC performed by the senior author. Since 7 April 2010, the incidence of CD stones/sludge was prospectively recorded—once the incision on the CD had been made, the CD and the CBD were “milked” in a retrograde fashion to remove any debris prior to introduction of the catheter for IOC. Impacted CD stones were crushed laparoscopically. We also analysed the entire database prospectively collected since 1999 for the incidence of CBD stones. T-test (continuous) and Chi² (categorical) tests were used to analyse predictors of CD stones.

Results 248 LC with IOC had been recorded from 7 April 2010. In this cohort, the incidence of CD stones was 13% (N=33/248) and CD sludge was 6% (N=15/248). The presence of CD stones was not

significantly associated with raised liver function tests (ALT>100, ALT>350) nor with pre-operative diagnoses of cholecystitis, pancreatitis, jaundice or cholangitis. Out of the 248 patients, 4% of patients presented with pain post operatively (N=11). <1% (N=2/248) presented with CBD stones post-operatively despite a negative IOC. No patients presented with pancreatitis or cholangitis post-operatively. In addition, out of a larger cohort of 1957 LC performed by the senior author, 4.5% of cases had CBD stones detected on IOC.

Conclusion The incidence of CD stones is not well reported in published literature—the data that exists is mainly following repeat cholecystectomy for PCS rather than intraoperative detection. PCS is widely reported and can cause a therapeutic and diagnostic challenge. The presence of stones in the CD or within a retained gall bladder remnant may be the cause of residual symptoms, but are difficult to diagnose. We propose that the IOC is not only a diagnostic tool for identification of CBD stones and to delineate anatomy, but also serves a therapeutic purpose, allowing “milking” of the CD to remove any stones/debris which in our cohort has resulted in low rates of post-operative pain.

Competing interests None declared.

PWE-139 OUTCOME OF LIVER RESECTION FOR NON-COLORECTAL AND NON-NEUROENDOCRINE LIVER METASTASES (NCRNNE)

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Introduction The liver is a frequent site for tumour metastases, and surgery for colorectal liver metastases (CRLM) is well established, with survival rates accepted to be 50% in 5 years. However, surgery for NCRNNE has been approached with caution. We aimed to report the outcomes of surgery for NCRNNE in our unit, to determine the patterns of disease presentation, recurrence and survival.

Methods We identified 78 patients who had liver resection from NCRNNE primary tumours from 28 December 1992 to 2 August 2011 using a prospectively maintained database; Breast (N=19), Malignant Melanoma (N=4), Renal (N=10), Anal Squamous Cell Carcinoma (N=5), Lung (N=3), Sarcoma (N=15), GIST (N=13), Squamous-other (cervix, bile duct, oropharynx) (N=6) and Gastric Adenocarcinoma (N=3). The electronic records of all these patients were then retrospectively reviewed. We obtained data on patient demographics, presentation of disease, pathological data, recurrence and survival. Data were analysed using ANOVA and Kaplan–Meier tests.

Results The age at diagnosis varied with tumour type; the youngest was sarcoma (46 years) and the oldest gastric (67 years). The progression to detectable liver disease was quickest with Anal Squamous Cell Carcinoma metastases (172 days), which also had a 60% recurrence rate within a mean of 192 days. Malignant Melanomas had a 100% recurrence rate, which occurred at a mean of 321 days. Breast metastases were the least likely to recur (33%) and had a long disease-free period between recurrences (468 days). The largest metastases were seen in sarcomas (67 cm) and the smallest in melanomas (28 cm). There was no significant correlation between size or number of tumours and survival. The 1- 3- and 5-year survival from the time of NCRNNE metastectomy was 88%, 56% and 47% respectively, compared with 86%, 58% and 46% after CRLM metastectomy. Malignant Melanomas and Anal Squamous Cell Carcinoma had the poorest outcome; 100% mortality at 5 years.

Conclusion Liver Resection is an effective treatment for metastases from NCRNNE tumours in highly selective patients. In the right

patient, surgery offers similar survival rates to resection of CRC metastases, but some tumour types do better than others, and a decision to proceed with resection should take into account the histological diagnosis, and an understanding of the behaviour of that tumour type.

Competing interests None declared.

PWE-140 PERSISTENT SYMPTOMS FOLLOWING CHOLECYSTECTOMY IS UNACCEPTABLY HIGH AND IN NEED OF FURTHER EVALUATION

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Introduction Up to 20% of patients undergoing cholecystectomy continue to experience symptoms. We consider such results unacceptably high and in need of further evaluation. Our aim was to identify the biliary symptoms for which cholecystectomy was carried out and then determine the prevalence and the nature of persistent symptoms following the procedure in a cohort of 500 consecutive cases.

Methods A validated pre-operative symptoms survey was completed at the time of listing of 500 consecutive laparoscopic cholecystectomies (LC), followed by a follow-up phone survey 12 weeks after the procedure to record the nature, severity and frequency of symptoms experienced pre- and post-operatively. A detailed clinical profiling was carried out on all patients with persistent biliary symptoms.

Results All patients had at least two symptoms pre-operatively and 337 (67.4%) had three or more. The most common symptoms pre-operatively were abdominal pain (93.8%), nausea (65.8%), pain related to food (54.4%) and bloating (48.6%). A total of 90 patients were symptomatic postoperatively. 81 patients (16.2%) complained of abdominal pain, while 63 (12.6%) patients also experienced associated dyspeptic symptoms. Seventy three patients (14.6%) developed one or more new symptoms post-operatively, the most common being heartburn found in 34 (6.8%) and abdominal bloating in 29 (5.8%). 60 patients underwent further investigation following LC; 36 patients went on to have a secondary diagnosis made, the most common (13/36) being hiatus hernia, seven patients were found to have a retained common bile duct stone. Overall, there was no significant difference in histology among patients post-operatively.

Conclusion A significant number of patients continue to experience symptoms following laparoscopic cholecystectomy. In patients where pain was the most troublesome symptom preoperatively, significant symptomatic improvement was noted. Similarly, those patients that experienced symptoms more dyspeptic in nature preoperatively were less likely to be symptom free following LC. A careful biliary history, a focused physical examination and a thorough pre-operative assessment must be carried out prior to LC to rule out conditions that masquerade as gallbladder disease.

Competing interests None declared.

PWE-141 HEPATOCELLULAR CARCINOMA AND MICROVASCULAR INVASION IN CIRRHOTIC AND NON-CIRRHOTIC LIVERS: ARE THEY DIFFERENT DISEASES?

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