Discussion

Since its introduction in the early 1990s, terlipressin has revolutionized management of liver disease with a role in the treatment of variceal haemorrhage and hepatorenal syndrome. Terlipressin has proven to be safe, with a lower incidence of side-effects compared with vasopressin and other synthetic analogues. Although, terlipressin is selective for the splanchnic circulation, it can exert vasoconstrictor effects on the systemic circulation. Undesirable effects are usually mild and include headache, abdominal pain and bradycardia. More serious complications are uncommon, but cases of ischaemic colitis, myocardial infarction and skin necrosis have been reported.

We believe that the skin lesion seen in this patient occurred as a result of terlipressin therapy. There is evidence for a temporal relationship between terlipressin and the observed skin necrosis. The manufacturers of terlipressin (Ferring Pharmaceuticals Ltd, Saint-Prex, Switzerland) have received 10 reports of skin necrosis related to terlipressin use. The majority of cases are related to skin necrosis affecting the extremities, but there are also a small number of cases of foreskin and scrotal necrosis in males. Ischaemic complications as a result of vasoconstrictor medication usually affect peripheral areas such as the digits of the hands and feet.

This case suggests extra vigilance is warranted while administering terlipressin. Although ischemic complication with terlipressin is rare, we should be aware of it and detect it early.

References


Biliary pancreatitis secondary to stones from a gall bladder remnant

Introduction

Laparoscopic cholecystectomy is now accepted as the “gold standard” for treatment of biliary pancreatitis to prevent further attacks.1 When dissection of the Calot’s triangle is difficult, partial cholecystectomy has been proposed as a safer operation.2 The remnant stump, which includes the Hartmann’s pouch, should be cleared of residual gall stones at the time of surgery.3 However, some of these remnants may retain stones, or form new ones in the post operative period.3,4 These patients may present with “post cholecystectomy pain” at varying intervals from the primary surgery due to the residual or recurrent stones.5 The remnant gall bladder and cystic duct stump must be kept in mind while evaluating these patients, especially if a history of partial cholecystectomy is available.5 We present four such patients who presented with post cholecystectomy biliary pancreatitis, with a view to highlight this problem.

Case Report

The patients details are provided in Table 1. There was one female and three males with a mean age of 56.6 years (range 45-69 years). Two patients had undergone open partial cholecystectomy and two, laparoscopic cholecystectomy as
the index operation. The details of laparoscopic surgery done (complete/ partial) and the indication for partial cholecystectomy as done in the two open cases were not available. The time of presentation after primary surgery ranged from twelve to twenty-four months. All these patients had a residual gall bladder stump detected on imaging. The gall bladder was detected on Ultrasonography (USG) in one patient, Magnetic Resonance Cholangio Pancreatography (MRCP) showed sludge in the remnant in two patients. Computerized Tomography (CT) was used only in one patient with necrotizing pancreatitis. Endoscopic Ultrasonography (EUS) showed the remnant gall bladder with stones in two patients. In all the patients, the common bile duct did not reveal stones or sludge. Two of these patients had severe pancreatitis. One patient presented with a pseudocyst of the pancreas and was treated with sphincterotomy and pseudocyst drainage. Two patients who presented with mild pancreatitis were treated with excision of the stump. None of the patients who underwent stump excision or sphincterotomy has had a further attack (mean follow up 28 months).

Discussion

In laparoscopic cholecystectomy, the cystic duct is divided close to the gall bladder to avoid bile duct injury, leading to a longer cystic duct remnant compared to open cholecystectomy. In patients who undergo a partial cholecystectomy, in addition to the cystic duct remnant, a portion of the gall bladder is left behind, to avoid Calot’s triangle dissection. Cystic duct remnant, defined as a residual duct or gall bladder remnant greater than 1cm in length, in the presence of stones, can cause post-cholecystectomy syndrome and complications including biliary pancreatitis. The incidence of PCS is reported to be between 10-40%. Routine imaging such as USG may not be able to detect the remnant stump, as was the case in two of our patients, due to the small size, unless gross dilatation of the stump has taken place or a large filling defect is clearly visualized. Hence, when patients who have undergone laparoscopic or open partial cholecystectomy present with biliary pancreatitis, it is advisable to use modalities like MRCP and EUS, along with ERCP and sphincter of Oddi (SOD) manometry. Both MRCP and EUS have been found to be useful in imaging the remnant stump. The differential diagnosis of a cystic lesion in the extra hepatic biliary tree, after cholecystectomy, includes a gall bladder remnant, secondary dilatation of the cystic duct stump, gall bladder duplication and type II choledochal cyst.

In patients who have biliary pancreatitis after cholecystectomy, the differential diagnosis includes residual or recurrent bile duct stones, cystic duct stones, remnant gall bladder stones and SOD dysfunction. EUS has been shown to be accurate for the identification of gallbladder sludge, common bile duct stones, and pancreatic disease. ERCP and sphincter

Table 1: Details of patients who presented with delayed biliary pancreatitis after partial cholecystectomy

<table>
<thead>
<tr>
<th>Case</th>
<th>Age (yrs)</th>
<th>Sex</th>
<th>Cholecystectomy</th>
<th>Indication for cholecystectomy</th>
<th>Onset of biliary pancreatitis after cholecystectomy</th>
<th>Severity of pancreatitis</th>
<th>Imaging for detection of gall bladder remnant</th>
<th>Treatment</th>
<th>Outcome</th>
<th>Follow Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>45</td>
<td>F</td>
<td>Open, partial</td>
<td>Biliary pancreatitis</td>
<td>16 months</td>
<td>Mild</td>
<td>USG normal, EUS showed GB remnant with stones</td>
<td>Excision of remnant</td>
<td>No recurrence</td>
<td>48 months</td>
</tr>
<tr>
<td>2</td>
<td>54</td>
<td>M</td>
<td>Laparoscopic</td>
<td>Biliary pancreatitis</td>
<td>12 months</td>
<td>Mild</td>
<td>USG - GB remnant &amp; long cystic duct stump with stones</td>
<td>Excision of remnant</td>
<td>No recurrence</td>
<td>12 months</td>
</tr>
<tr>
<td>3</td>
<td>69</td>
<td>M</td>
<td>Laparoscopic</td>
<td>Biliary pancreatitis</td>
<td>24 months</td>
<td>Mild to moderate (pseudocyst)</td>
<td>USG normal, MRCP – sludge in remnant</td>
<td>Sphincterotomy with Pseudocyst drainage</td>
<td>No recurrence</td>
<td>24 months</td>
</tr>
<tr>
<td>4</td>
<td>58</td>
<td>M</td>
<td>Open, partial</td>
<td>Empyema gall bladder</td>
<td>14 months</td>
<td>Severe</td>
<td>CT - pancreatic necrosis MRCP – stump with sludge</td>
<td>Necrosectomy done</td>
<td>awaited</td>
<td>-</td>
</tr>
</tbody>
</table>
of Oddi manometry should generally be reserved for patients with multiple unexplained attacks and negative EUS results, who have previously undergone cholecystectomy.13-15

The treatment option in case of recurrent pancreatitis following a previous cholecystectomy could be an endoscopic sphincterotomy or resection of the remnant. There are increasing numbers of reports favouring resection of the residual cystic duct/ gall bladder remnant in patients suffering from post cholecystectomy syndromes.6,8 Completion cholecystectomy or “recholecystectomy” is now gaining importance as the definitive treatment for residual gall bladder remnant and can be performed laparoscopically when feasible.1,10,16,17 However, resurgery can be technically challenging. In our patients, the two who underwent completion cholecystectomy had demonstrable stones in the remnant stump. Neither of them has had a recurrence of symptoms after removal of the residual gall bladder. A sphincterotomy was performed in the patient who had sludge seen in the remnant stump. We thought it would be difficult to approach the stump surgically. There are some conceptual advantages of remnant excision over sphincterotomy. Besides eliminating other problems associated with remnant stones (e.g. post cholecystectomy pain), it avoids the side effects as well as the long term recurrent stenosis associated with a sphincterotomy.16

In conclusion, in patients who have undergone partial cholecystectomy for biliary pancreatitis, recurrence of the pancreatitis may be due to stones in the remnant gall bladder.

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References

Spontaneous Splenic Rupture in Complicated Malaria: Non – Operative Management

Introduction

Malaria still continues to be a major health problem in many parts of the world. An enlarged spleen is considered to be one of the cardinal physical signs. Though splenic rupture in malaria is rare but yet it is a important life threatening complication specially of *Plasmodium vivax*. Spontaneous splenic rupture has been described in conditions such as infectious mononucleosis, haematological malignancies but malaria continues to be the most common aetiology.

Traditionally all types of splenic rupture have been treated with splenectomy but with the emerging trend of splenic conservation in splenic trauma similar approach has been applied to a ruptured malarial spleen also. We report a patient with combined *P.falciparum* and *P.vivax* malaria who developed spontaneous splenic rupture and was managed successfully non-operatively.

Case Report

A seventeen year old girl presented to the emergency department with history of intermittent high grade fever for the last eight days. The fever was associated with chills and rigors. This was followed by abdominal pain, distension and repeated episodes of non bilious vomiting for the last 3 days. At presentation she had a pulse of 102 per minute, respiratory rate of 24 per minute, and mild hypotension (98/60 mm). On examination, abdomen was distended with tenderness in left hypochondrium. Spleen was palpable 3 cm below the left costal margin and liver was palpable 4 cm below the right costal margin.

There was evidence of free fluid in the abdomen and the bowel sounds were sluggish. On investigations her haemoglobin was 7.2 g% with thrombocytopenia (platelet count of 42,000 per cu mm) and marked leukocytosis (total leukocyte count of 25,000 per cu mm). The blood urea was 184 mg/dl and serum creatinine was elevated (5.7 mg% (normal 0.8-1 mg %)). A peripheral blood smear showed gametocyte of *Plasmodium falciparum* (*Figure 1*). An antibody enzyme linked immunosorbent assay (ELISA) was positive for both *P.falciparum* and *P.vivax*. Ultrasonography and non contrast computerised tomography scan (*Figure 2*) revealed a wedge shaped infarct in the spleen with free fluid in the abdomen suggestive of splenic rupture. The patient was put on conservative management with monitoring of vitals, laboratory parameters and clinical signs. An infraumbilical abdominal drain was inserted which drained about 600 ml of non clotting blood. Patient was started on injection artesunate 120 mg and broad spectrum antibiotic (imipenem 1 gram and cilastatin 500 milligrams). She was transfused blood and blood products and underwent one haemodialysis. Subsequently she went into