A 72 year old female was referred by her general practitioner (GP) on the urgent two-week waiting list with a history of weight loss, diarrhoea and a mass on the right upper quadrant with a possible underlying malignancy. She had a recent history of jaundice of one month's duration. She was otherwise fit and well. On examination, she was afebrile, icteric, abdomen was soft, non-tender with fullness and possible mass in the right upper quadrant.

Routine blood tests yielded elevated bilirubin of 45umol per litre (normal range is up to 17umol per litre of blood), the rest of her blood results were normal. Her GP had requested a Barium enema to look for bowel cancer. This showed a nice image of her biliary tree with communication between gall bladder and colon (fig 1). To evaluate the situation further, we requested an urgent Computerised Tomography (CT) scan which showed a complex mass in the right upper quadrant with no signs of malignancy. Endoscopic retrograde cholangiopancreatography (ERCP) showed a nice image of her transverse colon confirming the fistula. In the same sitting a liberal sphincterotomy to the ampulla was performed. Following the procedure the patient was symptom free. The mass in the right upper quadrant completely resolved confirming the benign nature of the mass. Bilirubin level gradually came down to normal.

Patient was followed up regularly in the outpatient department for one year. She was completely symptom free and did not require any further intervention therefore she was discharged from our care.

Discussion

Spontaneous enterobiliary fistulae are usually associated with gallstones. They can also occur as a complication of disease of adjacent structures. They have also been reported with abdominal trauma, Crohn’s disease, and malignancies of the biliary tract, bowel and head of pancreas [1-2].

The estimated incidence of enterobiliary fistulae is reported to be 0.1 to 0.5% in autopsy series and 1.2 to 5.0% in large series of cholecystectomies. 70% of those are cholecysto-duodenal, 15-20% cholecysto-colonic and other varieties will form the remaining 10% [3].

In the United Kingdom, it has been estimated from autopsy studies that approximately 12% of men and 24% of women of all ages have gallstones present [4]. This could reflect the higher incidence of enterobiliary fistulae in female patients [5].

Enterobiliary fistulae can present as abdominal pain, nausea and dyspeptic symptoms. Most common presenting feature is Diarrhoea; Cholecysto-colic fistula can alter the normal enterohepatic circulation of bile acids, leading to malabsorption and the colonic secretion of water and electrolytes. Bile acid loss through the fistula can be partially compensated for by increased hepatic synthesis of bile acids. However when the loss becomes greater than the synthesis, available bile acid is reduced and inadequate lipid solubilization of dietary fat leads to steatorrhea. The bile acids also stimulate the colonic mucosa directly to secrete water and electrolytes [6].

Cholecysto-duodenal fistula can present as small bowel obstruction by the gallstone (gallstone ileus). A similar condition can also occur in the large bowel, rarely due to Cholecysto-colonic fistula. Cases have been reported with the stone impaction at the recto sigmoid diverticula causing large bowel obstruction [7].

A high index of suspicion is required to diagnose the condition. This condition can be diagnosed by Barium enema, ERCP and Computerised Tomographic scan.

The standard treatment of Cholecysto-colonic fistula is open cholecystectomy and closure of the fistula. Recently the developments in Laparoscopic surgery have shown its potential use in treating fistulas. Similar techniques of open surgery have been adapted in Laparoscopic operations; the results have shown no significant difference in intraoperative or postoperative complications [8]. Although surgery is the treatment of choice, Endoscopic sphincterotomy and common bile duct stone extraction have been said to cause spontaneous healing of the fistulas as is the case of this patient. This has been used as the treatment in elderly, unfit patients [9].

Conclusion

Cholecysto-colonic fistula is a rare event. The presentation is variable. A high index of suspicion is required to diagnose the condition. Surgery is the treatment of choice; however, Endoscopic sphincterotomy and stone extraction can be used as the treatment in elderly and unfit patients without the need for further intervention.
Figure 1: The biliary tree is shown with communication between gall bladder and colon.

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