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Cholecysto-duodenal Fistula Managed Laparoscopically

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A rare case of cholecysto-duodenal fistula was discovered intra-operatively during elective laparoscopic cholecystectomy. The fistula was repaired and cholecystectomy was done. The patient recovered fully.

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Laparoscopic Cholecystectomy was rapidly established as the procedure of choice for removal of gallbladder in patients with symptomatic gallstones[1]. Cholecysto-enteric fistula is an uncommon finding at surgery for gallstones disease, a reported incidence of 0.15%-4.8%[2]. Patientsô symptoms are often subclinical and preoperative radiological detection of cholecysto-enteric fistula is low[3].

Cholecysto-enteric fistula is one of the relative contraindications of laparoscopic cholecystectomy and might be a reason for conversion to open surgery[4].

The aim of this presentation is to highlight the rare findings of cholecysto-enteric fistula during laparoscopic cholecystectomy.

THE CASE

Twenty-four year old female Ethiopian not known to have any previous medical illness, non-smoker and non-alcoholic presented to the accident and emergency department complaining of epigastric abdominal pain for three days duration, progressive in nature, radiating to the back, not relieved by analgesia, associated with loss of appetite, nausea and vomiting. She had history of similar previous attack. She was afebrile, not tachycardic and had normal blood pressure.

Slight tenderness of the upper abdomen and mild guarding at epigastrium but the rest of the abdomen was soft and lax. Murphyôs sign was negative.

Her blood workup revealed leukocytosis, elevated serum amylase (856 u/L) and elevated urinary amylase (13514 u/L). Abdominal ultrasound showed thickened contracted gall bladder with multiple gallstones, the largest measured 8 mm, see figure 1.

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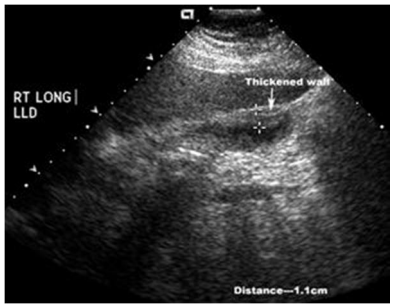

Figure 1: Ultrasound Showing Contracted Gall Bladder with Thickened Wall

The patient was diagnosed with biliary pancreatitis and was treated conservatively for 5 days in the hospital. Her inflammation was resolved and she was discharged home. Elective laparoscopic cholecystectomy was scheduled after 6 weeks.

During the procedure, we found the gallbladder inflamed edematous, the omentum adherent to it and dense adhesion between the gallbladder, stomach and duodenum. With careful dissection we noted fistula between the fundus of gallbladder and duodenum, see figures 2 and 3. Therefore, we separated the fistula from duodenum using Endo-GIA stapler, completed cholecystectomy as usual and applied omental patch over stapler line and fixed with endo-stitches. Sub-hepatic drain was inserted.

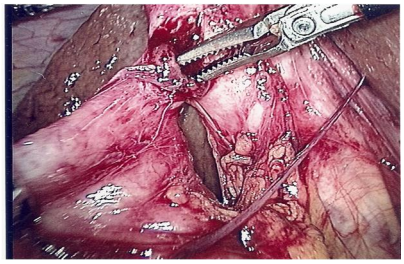

Figure 2: Dissector Inserted in the Cholecysto-Duodenal Fistula towards the Duodenum

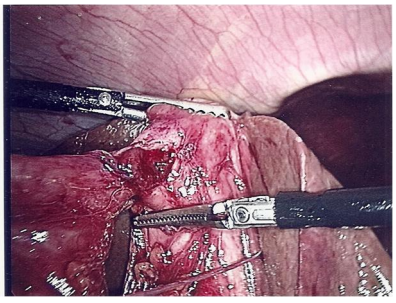

Figure 3: Showing Magnified Picture of Cholecysto-Duodenal Fistula

She had uneventful postoperative course. She started oral feeding on the fifth day and the drain was removed on the sixth day. She was discharged home on the seventh postoperative day. Histopathology reported acute on chronic cholecystitis, no atypia was seen.

DISCUSSION

Gallstones are common problems in hepatobiliary system. It can present as incidental finding on imaging studies, biliary colic, acute cholecystitis, acute pancreatitis, obstructive jaundice, intestinal obstruction in gallstone ileus or cholecysto-enteric fistula. Cholecysto-enteric fistulas are rare, high index of suspension might help to diagnose it preoperatively. The reported incidence of internal biliary fistulas is about 2% of total biliary diseases[5]. The most common type of cholecysto-enteric fistula is cholecysto-duodenal fistula (70%) followed by cholecysto-colic fistula (10-20%) and the least common cholecysto-gastric fistula[6-8].

Biliary fistulas may result from pressure necrosis caused by calculi of gallbladder or biliary tract[6,9]. It is rarely formed by peptic ulcers, malignant tumor, traumatic injury or Crohnôs disease[10-13].

If fistula is suspected, plain abdominal X-ray might show pneumobilia or ERCP might help to diagnose it preoperatively[14]. Cholecysto-duodenal fistula is usually diagnosed during laparoscopic cholecystectomy and it is an indication to convert to open surgery, but with growing experience in laparoscopic surgery facilitated by improvement of laparoscopic instruments, especially endo-staplers made it possible to complete the procedure laparoscopically.

Wang reported four cases of cholecysto-enteric fistula, two detected preoperatively by gastroscopy, ERCP and MRCP and all of them successfully managed by laparoscopic techniques using Endo-GIA[15]. Latic reported five cholecysto-duodenal fistulas managed laparoscopically using endo-stapler[16].

CONCLUSION

Cholecysto-duodenal fistula is a rare condition. Very high index of suspicion needed to diagnose it preoperatively but mostly diagnosed intra-operatively during laparoscopic cholecystectomy. It can be managed safely by laparoscopic techniques by experienced laparoscopic surgeons.

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REFERENCES

1. Martin I, Siriwardenea A. Safe Laparoscopic Cholecystectomy in the Presence of a Cholecysto-Enteric Fistula. Dig Surg 2000; 17(2): 178-80.
2. Angrisani L, Corcione F, Tartaglia A, et al. Cholecystoenteric Fistula is Not a Contraindication for Laparoscopic Surgery. Surg Endosc 2001; 15(9): 1038-41.
3. Gaillard F, Stella D, Gibson R. Cholecystocolonic Fistula Diagnosed with CT-Intravenous Cholangiography. Australas Radiol 2006; 50(5): 484-6.
4. Macintyre IM, Wilson RG. Laparoscopic Cholecystectomy. Br J Surg 1993; 80(5): 552-9.
5. Yamashita H, Chijiiwa K, Ogawa Y, et al. The Internal Biliary Fistula Reappraisal of Incidence, Type, Diagnosis and Management of 33 Consecutive Cases Surgery. HPB Surg 1997; 10(3): 143-7.
6. Glenn F, Reed C, Grafe WR. Biliary Enteric Fistula. Surg Gynecol Obstet 1981; 153(4); 527-31.
7. Singh N, Stempel K. Images in Clinical Medicine. Cholecystoduodenal Fistula. N Engl J Med 1997; 336(4): 266.
8. Stern S, Singh S, Thakur M. Cholecystoduodenal Fistula. Gastrointest Endosc 2007; 65(1): 154-5.
9. Zwemer F, Coffin-Kwart VE, Conway M. Biliary Enteric Fistulas: Management of 47 Cases in Native Americans. Am J Surg 1979; 138(2): 301-4.
10. Feller ER, Warshaw AL, Schapiro RH. Observations on Management of Choledochoduodenal Fistula Due to Penetrating Peptic Ulcer. Gastroenterology 1980; 78(1): 126-31.
11. Tanga RM, Ewing JB. Primary Malignant Tumors of the Gallbladder: Report of 43 Cases. Surgery 1970; 67(3): 418-26.
12. Griffith CD, Saunders JH. Cholecystoduodenocolic Fistula Following Abdominal Trauma. Br J Surg 1982; 69(2): 99-100.
13. Porter JM, Mullen DC, Silver D. Spontaneous Biliary-Enteric Fistulae. Surgery 1970; 68: 597-601.
14. Arvanitidis D, Anagnostopoulos GK, Tsiakos S. Cholecystocolic Fistula Demonstrated by Endoscopic Retrograde Cholangiopancreaticography. Postgrad Med J 2004; 80(947): 526.
15. Wang WK, Yeh CN, Jan YY. Successful Laparoscopic Management for Cholecystoenteric Fistula. World J Gastroenterol 2006; 12(5): 772-5.
16. Latic A, Latic F, Delibegovic M. Successful Laparoscopic Treatment of Cholecystoduodenal Fistula. Med Arch 2010; 64(6): 379-80.