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Case Report

Laparoscopic management of cholecystoduodenal fistula: a case report

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ABSTRACT

Laparoscopic cholecystectomy has been the most widely accepted modality of treatment for patients with gall bladder disease. With time and increasing experience laparoscopic cholecystectomy is now being successfully attempted to treat almost all benign gall bladder pathology and their complications. One such uncommon infrequent complication of cholecystolithiasis is the cholecystoenteric fistula. Management of cholecystoduodenal fistula was traditionally performed by open method. With increasing newer laparoscopic techniques and advancement in the field, cholecystoduodenal fistula, an uncommon clinical entity is now being successfully treated via laparoscopic approach. It is feasible and safer than the conventional open approach in experienced hands, thus decreasing the overall morbidity and mortality attributed to the condition. We report a case of cholecystoduodenal fistula treated successfully by laparoscopic approach using an Endo GIA stapler.

Keywords: Cholecystoduodenal fistula, EndoGIA stapler, Laparoscopic approach

INTRODUCTION

Since the late 1980's laparoscopic cholecystectomy has been the most widely accepted modality of treatment for patients with gall bladder disease. With time and increasing experience laparoscopic cholecystectomy is now being successfully attempted to treat almost all benign gall bladder pathology and their complications.[1] One such uncommon complication is the cholecystoenteric fistula, an abnormal spontaneous tract with bile drainage from gall bladder to adjacent bowel loops. Though it is uncommon it is a well-recognized complication of gall stone disease (75%).[2,3]

In acute cholecystitis the inflammation of gall bladder spreads to the serosal surface of the adjacent bowel and it gets adherent to the gall bladder. With raised intra cholecystic pressure gangrene of gall bladder wall ensues resulting in perforation and in long standing untreated cases it may lead to formation of a fistulous tract. Cholecystoenteric fistula constitute 70% to 80% of all biliary fistulae reported in the world literature (Rau-et- al, Safaie Shirazi-et-al). Of these 55% to 75% are cholecystoduodenal, 15% to 30% are cholecystocolic and 2% to 5% are cholecystogastric. Gall stone ileus a dramatic clinical presentation of a cholecystoenteric fistula, is reported in 8% to 20% of patients. Although most fistula between gall bladder and intestinal tract becomes obvious pre-operatively or intra-operatively, certain fistula are insidious and may not be appreciated even at surgery.[4,5] We share our experience on a case of cholecystoduodenal fistula diagnosed pre-operatively and managed successfully by laparoscopic approach using endo GIA stapling technique.

CASE REPORT

A 67-year-old female presented to us with complaints of right sided abdominal pain for past 1 month on and off associated with occasional vomiting and intolerance to fatty meals. Patient had history of acute abdominal illness 2 years ago for which she was hospitalized and diagnosed

as perforated acute gangrenous cholecystitis for which image guided percutaneous cholecystostomy was done in a tertiary care hospital 2 years ago. She was asymptomatic following that and came to us with above mentioned complaints for a month. On clinical examination patient had mild pallor and icterus, abdomen was soft with focal tenderness over right hypochondrium and epigastric region. Laboratory investigations revealed raised serum bilirubin and liver enzymes. Ultrasound imaging showed pneumobilia suggestive of bilioenteric fistula, hence MRCP and contrast CT scan was done which clearly demonstrated bile flow from gall bladder to 1st part of duodenum with stone of size 1x1 cm in gall bladder and of size 9mm obstructing at the terminal common duct. ERCP and biliary sphincterotomy with CBD clearance and stenting was done. Interval surgery was planned after 4 weeks.

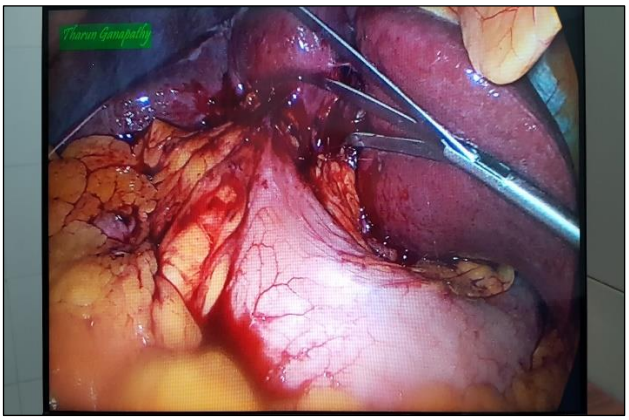

Figure 1: Duodenum indrawn to the fundus of gallbladder with dense adhesions on laparoscopy.

Diagnostic laparoscopy was done which revealed dense omental adhesions and fat stranding covering the gall bladder fossa and inferior surface of liver as shown in figure 1. Adhesiolysis was done duodenum was seen in close proximity to liver and adherent to it. A window was created between gall bladder, duodenum and the liver isolating the fistulous communication to gall bladder as in figure 2.

Figure 2: Cholecystoduodenal fistula on clearing adhesions.

Endo GIA stapling device inserted inside and gently passed into the space and stapling of the duodenal wall from the fistula was done releasing the gall bladder from duodenum. Gall bladder found to be contracted with frozen Calot's triangle. Calot's triangle dissected and routine laparoscopic cholecystectomy was performed. Patient tolerated orals on POD-2 and discharged. Immediate and late post-operative period was uneventful. Patient was followed up for a year with review imaging and no complications or residual disease noted.

DISCUSSION

Cholecystoenteric fistulas are more common in female geriatric population. There is no specific symptom or clinical finding suggestive of cholecystoenteric fistula. Due to nonspecific symptoms the diagnosis of cholecystoenteric fistula is very difficult unless ultrasound shows pneumobilia or there is an indication for more advanced diagnostic modalities like CT, MRCP or ERCP.[6]

At the inception of laparoscopic surgery and till recently cholecystoduodenal fistula is considered a contraindication for laparoscopic cholecystectomy and the standard treatment was open cholecystectomy with duodenal repair. With advancement in laparoscopic procedures many reports have described various laparoscopic approach to cholecystoduodenal fistula. In addition, cholecystoenteric fistula has been successfully managed using staplers in several cases with the advent of endoscopic stapling devices and increasing technical ability of laparoscopic surgeons. However bleeding, local adhesions and technical difficulty are usually encountered during laparoscopy and the rate of conversion to open surgery is very high (58.8%).[7,8-11]

Many methods were used laparoscopically including ligation of fistula with end loop, intracorporal interrupted or continuous suture closure of fistula, although there is risk of duodenal stump leak is high. Laparoscopic intestinal stapling devices are found to be much safer and flexible and is now the preferred and widely accepted treatment of choice for cholecystoduodenal fistula.

CONCLUSION

Cholecystoduodenal fistula is no longer a contraindication to laparoscopic surgery and in expert hands, it is safe and ideal. Although it requires meticulous handling and dissection to successfully perform the procedure, it decreases the overall morbidity and mortality providing all advantages of minimal invasive surgery. Endoscopic stapling technique is the widely accepted treatment of choice for cholecystoduodenal fistula.

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