



An unusual case of impacted Dormia basket with large CBD stone

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Abstract

Currently Endoscopic treatment of common bile duct stones is the treatment of choice for all common bile duct stones. In spite of the fact that this procedure is identified with a decent achievement rate, in rare cases- serious complications can occur, particularly when we use a Dormia basket. Here we are presenting the patient with impacted dormia basket with large CBD stone in common bile duct managed with laparoscopic assisted duodenotomy with choledochoduodenostomy. To conclude that Laparoscopic method is a one of the feasible and safe option for the retained dormia basket in selected cases.

Keywords: *choledochoscope, dormia basket, impacted, laparoscopic, Endoscopic Retrograde Cholangiopancreatography (ERCP), choledochotomy, duodenotomy, choledochoduodenostomy.*

Introduction

Endoscopic management is first line management of common bile duct stones with obstructive biliopathy. The study states that 90% cases of small and medium sized CBD stones are successfully managed by Endoscopic Retrograde Cholangiopancreatography (ERCP) with help of Dormia basket or balloon catheter.¹ although it is minimal invasive procedure, but associated with common and rare complications. Impaction of Dormia basket with large CBD stone is one of the rare complications of ERCP and incidence reported around 0.8-5.9%.² Risk factor of impaction are large stone or fracture of basket wire during cranking. As impacted basket is associated with complication likes cholangitis and pancreatitis, hence its removal is necessary. Mechanical lithotripsy is usually used for management, but when it fails, laparoscopic/open

choledochotomy and extraction of dormia basket through choledochoscope is an option. Here we are presenting a case of a laparoscopic assisted extraction of impacted dormia basket with large common bile duct stone.

Case Summary

27 years old female, presented in Gastroenterology OPD with chief complaints of pain in right upper abdomen and vomiting since last three months. Pain was moderate to severe in intensity, non-radiating and relieved with medication, vomiting was non-bilious, non-projectile in nature. Yellowish discoloration of eyes and skin also present. Patient underwent Laparoscopic cholecystectomy three months ago for cholelithiasis and ERCP (Endoscopic Retrograde Cholangiopancreatography) two and half month ago for Choledocholithiasis. On

Examination, she was icteric. On abdomen examination-soft, mild tenderness in right hypochondrium and non distended. On auscultation bowel sounds present.

Patient was admitted and routine investigations were done. Biochemical investigations showed elevated serum bilirubin (3.09 mg/dl) and alkaline phosphatase (154 U/L). Abdomen Ultrasonography evaluation revealed Choledocholithiasis causing central as well as peripheral intrahepatic biliary radicals dilatation

with stent in situ. She underwent repeat ERCP, but during the procedure there was impaction of dormia basket with large stone at the ampulla as shown in figure 1.

Gastroenterology team tried to extract impacted dormia basket with stone, but failed. Hence general surgery consultation was done and the patient shifted to general surgery department for further management and patient was taken for emergency surgery.

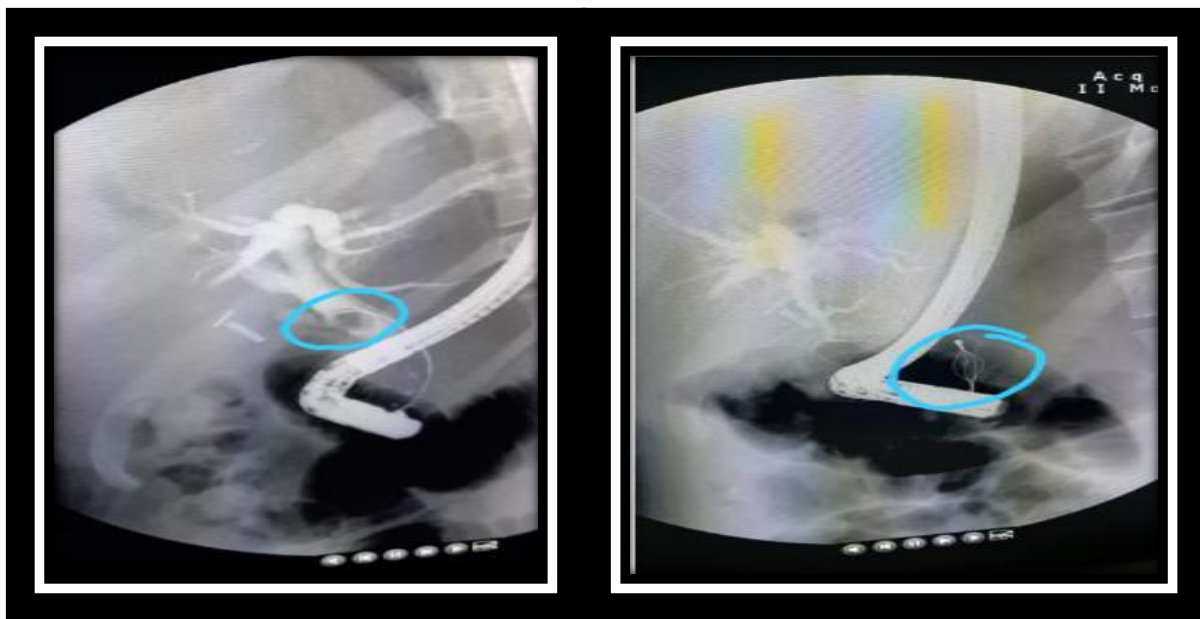


Figure 1: Endoscopic Retrograde Cholangiography image showing Dormia Basket with calculi in common bile duct.

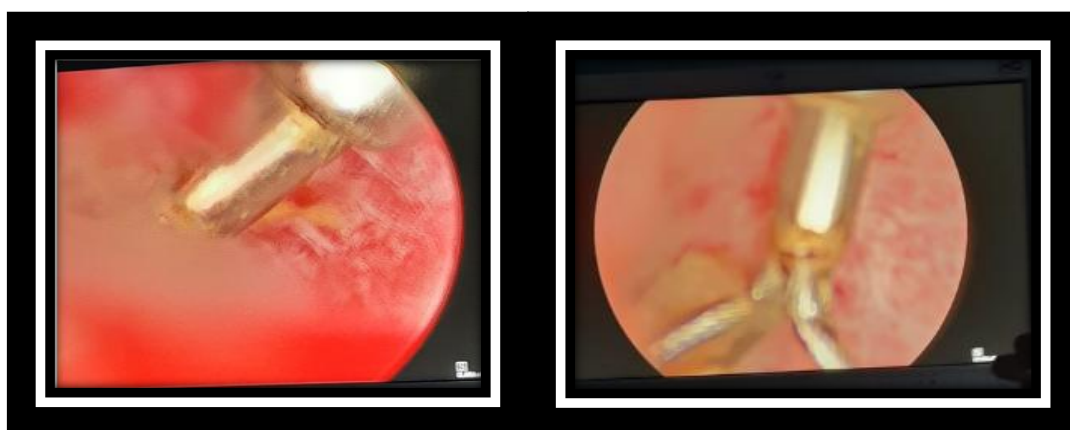


Figure 2: Cholechoscopy showing Dormia Basket in lower CBD

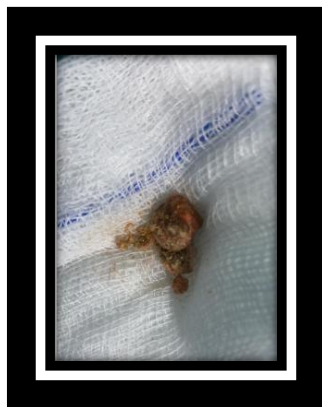


Figure 3: Common Bile Duct stone

Emergency Laparoscopic choledochotomy was performed. Choledochoscopy showed the impacted dormia basket with large stone present in the lower CBD at ampulla level as shown in figure 2. Initially, laparoscopic assisted disengagement of dormia basket was attempted, but failed. Finally the stone was disengaged and extracted via small duodenotomy as shown in figure 3. Again Choledochoscopy was done and ascertained clearance of the bile duct both distally as well as proximally. Laparoscopic Choledochoduodenostomy was done with interrupted 3-0 polyglactin. Abdominal drain placed in sub hepatic area.

Post-operative period was uneventful and patient was doing well. In post-operative period, ultrasound and blood investigations were at normal limits. Patient was discharged on 5th POD with satisfactory condition. Drain was removed on 7th POD.

Discussion

Common bile duct stones are found in 10-15% of patients having gall stone diseases. Incidence of Choledocholithiasis is in increasing trend and is more common in females in between 40-49 years age group. Obesity is the commonest risk factor.^[3] Endoscopic management is the first line management of Choledocholithiasis. Both Dormia basket and balloon catheter are used to retrieve common bile duct stones. Common known complications include pancreatitis, hemorrhage, infection and perforation of duodenum or bile duct.^[5] A very rare complication is the impaction

of dormia basket or snapping of its wire. Incidence of that reportedly ranges from 0.8-5.9%.^[2, 4, 5, 6] The impacted basket is usually associated with complications such as cholangitis and pancreatitis; hence, early removal of the impacted dormia is essential.^[4]

There are variety of strategies for retrieve the retained basket such as extracorporeal shockwave lithotripsy (ESWL), laser lithotripsy, extension of sphincterotomy and balloon dilatation, rescue mechanical lithotripter, exchange of metal wires or metal sheaths, choledochotomy either laparoscopic or laparotomy approach and conservative management. Each patient has undergone an average of 1.4 procedures (including the original ERCP).^[7]

Extracorporeal shock wave lithotripsy is primary management of an impacted Dormia basket as per the high proportion of cases reported from European centers. ESWL results in high clearance after one session (92%), but subsequent endoscopy may be necessary to remove stone fragments and achieve definitive duct clearance but sometime it is difficult to catch the tip of impacted dormia basket and also associated with risk of perforation, bleeding and need for multiple sessions.^[8]

Surgical management is one-time procedure permitting the performance of cholecystectomy at the same time. The observational study was performed on open surgical removal of impacted dormia basket in six patients. They suggested that large stone size (>2 cm) was associated with risk of basket impaction.^[4] But open exploration is associated with significant pain and prolonged recovery.

Laparoscopic retrieval was first described by Ainslie et al in 2000.^[10] Another study published regarding impacted dormia basket removed though laparoscopic approach with help of Maryland forceps.^[9] Laparoscopic approach is better in view of least post operative pain, hospital stay and cosmetic better. If Laparoscopic choledochotomy approach fails, then laparoscopic assisted duodenotomy followed by

choledochoduodenostomy is best option available, as successfully performed in this patient.

Conclusion

Dormia basket impaction is an unusual complication of ERCP, for which many options are available for its retrieval. We found that laparoscopic assisted retrieval of impacted dormia basket is safe, feasible and less morbid procedure in selected patients when endoscopic / laparoscopic procedure fails.

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