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Impacted Mechanical Lithotripter Basket with Broken Traction Wires and Retained Stone after Endoscopic Retrograde Cholangiopancreatography: Case Report.

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ABSTRACT

Endoscopic retrograde cholangiopancreatography (ERCP) with sphincterotomy is now well established treatment for choledocholithiasis. Among various supplemental procedures, mechanical lithotripsy is the most common method being used for fragmentation of difficult common bile duct stones. Impacted mechanical lithotripter with an entrapped stone is a likely complication after mechanical lithotripsy. Here, we present a case of impacted mechanical lithotripter basket with rupture of its traction wires.

Keywords: Choledocholithiasis, ERCP, Mechanical lithotripsy

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INTRODUCTION

Introduction of Endoscopic retrograde cholangiopancreatography (ERCP) with papillotomy in 1974 opened a new era in the management of biliary duct calculi [1]. Since then, ERCP is the treatment of choice for choledocholithiasis. ERCP with endoscopic sphincterotomy is curative for 85% to 90% of common bile duct stones [2]. Large common bile duct stones, particularly those with size more than 1 cm, require additional lithotripsy procedure. Among various supplemental procedures, mechanical lithotripsy is the treatment of choice after endoscopic sphincterotomy for impacted large biliary duct stones. However, impaction of lithotripter basket with an entrapped stone or ruptured traction wires occurs in 0.8% to 6% of performed procedures [3]. Here, we present a case of impacted mechanical lithotripter basket with traction wires after attempted removal of stone during ERCP.

CASE REPORT

Seventy five years old male patient presented with high grade fever, epigastric pain, and vomiting. He was having history of ERCP 3 days back. Patient was not having history of any other significant medical or surgical illness. ERCP was done with olympus side viewing ERCP scope. Mechanical lithotripsy was done with olympus lithotripter, stone was broken into pieces. However, largest fragment got impacted into the basket of mechanical lithotripter. Repeated attempts to dislodge the mechanical lithotripter with sohendra lithotripter failed [4]. Stent was placed so as to maintain biliary drainage. Endoscopist covered the torn end of mechanical lithotripter with a plastic cap so as to avoid injury to stomach wall. He was referred to us on urgent basis but patient came after 3 days. He was not having any significant past medical or surgical history. Investigations were: haemoglobin-10.8 gms/dl, white blood cell count-15700/cmm with 85% polymorphs, serum bilirubin total-2.5, direct-1.5 and indirect-1.0, alanine aminotransferase-33U/L, aspartate aminotransferase-35U/L, alkaline phosphatase-120U/L, serum creatinine-0.8 mg/dl. Ultrasonography was suggestive of presence of stone in mid part of dilated common bile duct and cholelithiasis. Patient was operated on urgent basis for cholecystectomy with common bile duct exploration with removal of mechanical lithotripter and stone of about 2 cm size. Common bile duct was closed primarily without stent or T tube placement. Patient was allowed orally same day and his post-operative outcome was uneventful.

DISCUSSION

The minimally invasive nature of ERCP along with its ability to be performed under conscious sedation resulted in its rapid dissemination around the world. After introduction of mechanical lithotripsy in 1982 by Demling et al. [5], success rate for difficult bile duct stone removal has increased to 90% to 97%. Mechanical lithotripter unit is a strong-wired basket. The reinforced basket is opened in the CBD, and the stone is trapped within the braided wires. The procedure can be performed through the endoscope instrumentation channel or after endoscope has been removed from the patient and a metal sheath has been extended over the inner Teflon catheter. When a winding mechanism which is attached to the end of the metal sheath is cranked, it retracts the basket and impales the stone against the rigid distal end of metal sheath leading to stone fracturing. The stone fragments can be retrieved with same basket or a standard basket or balloon. Mechanical

lithotripsy is now the most commonly used technique for fragmentation of difficult bile duct stones more than 1 cm size or stones located above biliary strictures. Stone impaction, stone size and ratio of stone size to bile duct diameter are the negative predictive factors for a successful mechanical lithotripsy.

Various methods have been tried to dislodge impacted lithotripter. Extracorporeal shock wave lithotripsy has been used to fragment a stone trapped inside an impacted lithotripter basket [6]. Even laser lithotripsy can be applied to fragment a trapped stone inside an impacted lithotripter basket [7]. Sheridan et al. reported a case of trapped mechanical lithotripter that was treated by percutaneous transhepatic intracorporeal electrohydraulic lithotripsy [8]. Percutaneous transhepatic release of impacted lithotripter basket with help of choledochoscope has been reported [9]. A goose-neck snare has also been used to release an impacted lithotripter basket [10]. However, mentioned methods for management of impacted lithotripter basket requires sophisticated armamentarium and technical expertise. Since our patient has already developed cholangitis, we proceed with bile duct exploration and retrieval of impacted lithotripter basket along with its traction wires and an entrapped stone.

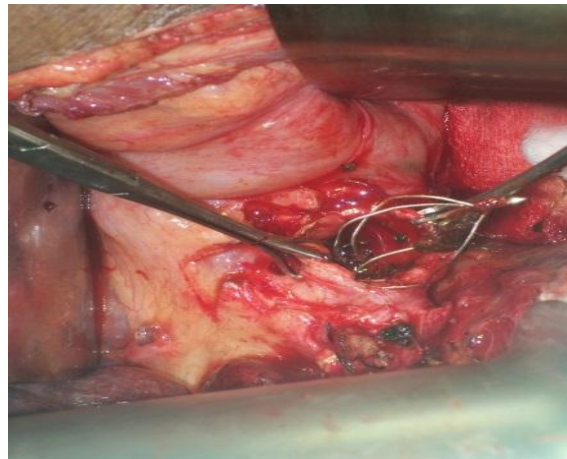


Figure 1: Mechanical lithotripter being retrieved through choledochotomy



Figure 2: Mechanical lithotripter, stent, gallbladder, and stone



REFERENCES

- [1] Kawai K, Akasaka Y, Murakami K, Tada M, Kohli Y, Nakajima M et al. Gastrointest Endosc 1974;20:148-51
- [2] Lambert ME, Martin EF, Tweedier DEF. Br J Surg 1988;75:896-98
- [3] Attila T, May GR, Kortan P. Can J Gastroenterol 2008;22:699-02
- [4] Soehendra N, Maydeo A, Eckmann B, Bruckner M, Nam V, Grimm H et al. Endoscopy 1990;22:271-72
- [5] Demling L, Seuberth K, Riemann JF. Endoscopy 1982;14:100-101.
- [6] Sauter G, Sackmann M, Holl J, Pauletzki J, Sauerbruch T, Paumgartner G. Endoscopy 1995;27:384-87
- [7] Neuhaus H, Hoffmann W, Classen M. Endoscopy 1992;24:596-99
- [8] Sheridan J, Williams TM, Yeung E, Ho CS, Thurston W. Gastrointest Endosc 1993;39:444-6
- [9] Halfhide BC, Boeve ER, Lameris JS. Endoscopy 1997;29:48
- [10] Kwon JH, Lee JK, Lee JH, Lee YS. 2011;12(2):247-51