



## **IMPACTED DORMIA BASKET AFTER ERCP, CASE REPORT**

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<p><b>Article Info</b> <i>Received 22/04/2015</i> <i>Revised 27/04/2015</i> <i>Accepted 06/05/2015</i></p> <p><b>Key words:</b> CBD stone, Endoscopy, ERCP.</p>	<p><b>ABSTRACT</b> Endoscopic procedures are now widely used for the management of bile duct stones. Pancreatitis, bleeding and cholangitis are common complications after these procedures. Impaction of stone retrieving instruments such as Dormia basket is a rare complication and its removal is carried out by either endoscopic means or by surgery if the former fails.</p>
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### **INTRODUCTION**

Endoscopic management is now the standard of care for primary management of common bile duct (CBD) stones causing biliary obstruction. Stones are successfully removed with Endoscopic Retrograde Cholangio-pancreatography (ERCP) using a Dormia basket or balloon catheters in 85% to 90% of cases [1] It is important to know the adverse events that can occur with this modality and how these are dealt with. There are some familiar complication such as pancreatitis, chlaongitis, bleeding, and perforation. However, there are other less common events that can occur and it is imperative to recognize them in order to prevent disastrous outcomes. We present one of these rare complications that occurred during ERCP, an impacted Dormia basket, that could not be removed endoscopically and patient underwent an open choledochotomy for its retrieval.

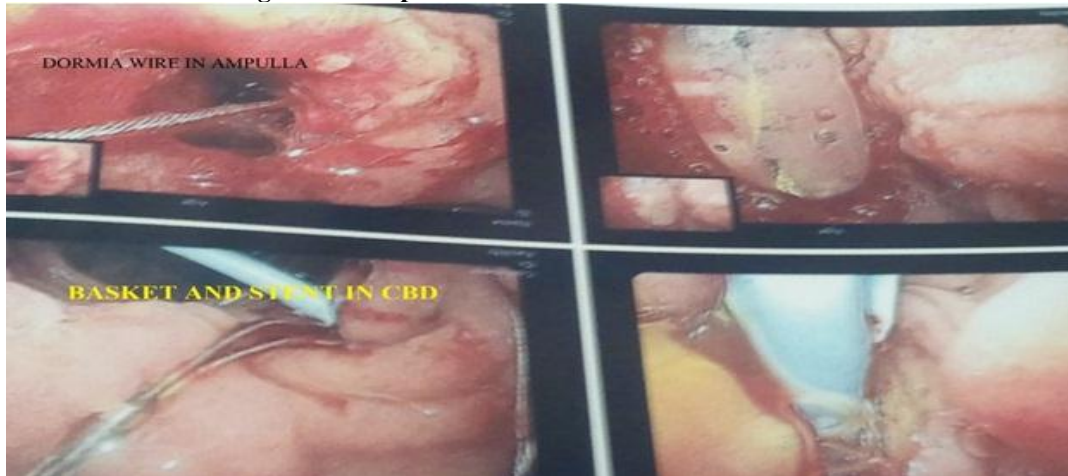
### **Case**

72 year-old male, known to have Diabetes Mellitus, hypertension and chronic renal disease presented with two weeks history of yellowish discoloration of sclera, skin, pruritus and dark urine. These symptoms were preceded by colicky abdominal pain in the epigastric and right upper quadrant region, associated with dyspepsia and almost 8 kilograms weight loss but he didn't had fever or

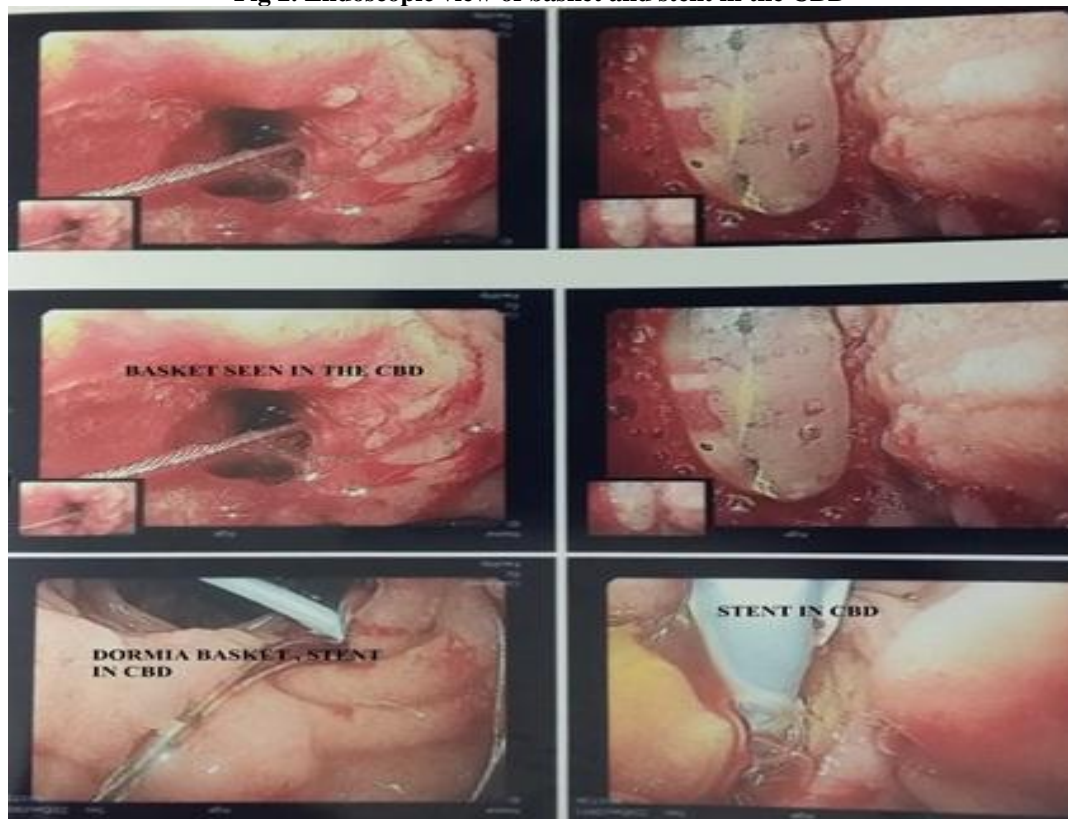
chills. He was jaundiced and afebrile. There were no abdominal findings on clinical examination. His bilirubin was 132, alkaline phosphatase (ALP) 301, CA 19-9 466, whereas CBC and other liver enzymes were normal. Ultrasound (US) abdomen showed gallbladder sludge with CBD of 10 mm and a 9 mm calculus in the distal end along with mild intrahepatic dilatation. MRCP (Magnetic Resonance Cholangio pancreatography) showed dilated proximal CBD of 1.5 centimeters with impacted stone of 9x7 mm, one cm below cystic duct insertion. Distal CBD was not dilated but showed inflammatory changes but no masses. The ERCP findings were dilated CBD with large stone, biliary sphincterotomy was done and multiple attempts were made to remove the stone by dormia basket. The stone could not be disimpacted despite several attempts by lithotripsy. The basket wire broke and remain impacted inside CBD. Biliary stenting with 8.5 x10 mm was however, carried out Fig 1 and 2. Another attempt to remove the impacted stone and the broken dormia basket by endoscopy using ultrasounds waves remains unsuccessful. The patient was stable and his liver function improved. He underwent open cholecystectomy and choledochotomy and removal of stone and basket. T-tube was kept for 2 weeks and removed after performing cholangiogram. He was discharged home after removal of T-tube Fig 3.



**Fig 1. Endoscopic view of basket and stent in the CBD**



**Fig 2. Endoscopic view of basket and stent in the CBD**



**Fig 3. Basket and stent after removal**



## DISCUSSION

The usual complications of ERCP are hyperamylasemia, acute pancreatitis, bleeding, perforation and infection. Difficulty during stone removal occurs when the stone is hard and large (> 1 cm) or when there is discrepancy between the stone size and diameter of the distal bile duct [2]. Impaction of a biliary basket due to a hard stone is not an uncommon complication, reported in 0.8-5.9% of cases [3].

Approximately 25 cases of Dormia basket impaction have been reported in the literature, and have been described within the hepatic ducts [4], mid CBD [5, 6] gallbladder [7], and at the ampulla of Vater [8,9]. Fracture of the "Basket capture wires" has also been reported.

The most likely causes of impaction at the ampulla of Vater are inadequate sphincterotomy and tissue edema due to sphincterotomy or a large stone [9]. In the past, surgical intervention was the standard management. Non-surgical techniques to release the impacted stone and basket have been increasingly reported. If the stone is impacted at the papilla, extending the sphincterotomy might be enough. Spontaneous passage of the impacted basket and stone after successful biliary stent placement has also been reported [10]. Removal of the retained basket by another basket which is cheap, simple and does

not need any special equipment or extra training has been used, called basketing a basket [11].

Lithotripsy to break the impacted stone and release the basket has been the most common approach used with success. Extra-endoscopic mechanical lithotripsy, extracorporeal shock wave lithotripsy [12]. Endoscopic pulse-dye laser [13,14] and transhepatic choledochoscopic lithotripsy [14] have all been reported. Recently, Ryozaawa *et al* [16] used rat-tooth forceps to catch the basket fibers and disengage the trapped basket. But when these techniques fail, surgery may be required [6, 8, 9].

As in our case the stone was impacted in CBD 1 cm distal to cystic duct junction and it measured about 9x7mm ( less than 1 cm ) we considered ERCP as first option for its removal. Impacted hard stone made the ERCP difficult to retrieve it and several attempts resulted in breakage of the basket wire inside. Finally the stone and baskets were removed by open surgical procedure.

## CONCLUSION

ERCP is still valuable tool in the management of biliary problems but it needs good experience and sophisticated facilities to deal with such rare complication. Surgery comes a second choice if others fail.

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