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## Case Report

# A RARE CASE OF OBSTRUCTIVE CHOLANGIOPATHY: LEMMEL SYNDROME

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## ABSTRACT

A rare case of obstructive cholangiopathy caused by a duodenal diverticulum (DD) in a 62 year old lady is presented. This entity was first described in 1934 by Lemmel. This case presented with abdominal discomfort since 3 months and jaundice with few episodes of vomiting in the last 15 days. Very few cases of Lemmel have been reported in literature. We present this case with its USG and MR imaging.

**Keywords**: Duodenal diverticulum, MR, CT, Lemmel syndrome

## INTRODUCTION

Lemmel syndrome occurs when a DD causes obstructive jaundice due to a mechanical obstruction of the common bile duct. After the colon, the duodenum is the most common location for gastrointestinal diverticula [1]. These diverticula typically occur in the periampullary region, along the medial aspect of the second and third portions of the duodenum [2]. When these diverticula are located within 2-3 cm of the ampulla of Vater they are termed periampullary diverticula (PD). PD are usually asymptomatic but, in rare instances, can cause pancreaticobiliary complications when inflamed [3]. We present a case of Lemmel syndrome who presented with jaundice, abdominal discomfort and few episodes of vomiting which was successfully managed by endoscopic diverticulectomy.

## CASE REPORT

A 62 year old lady came to the OPD with complains of abdominal discomfort for the past 3 months with jaundice and few episodes of vomiting in the past 15 days. She was referred for an ultrasound of the abdomen which revealed dilated CBD (figure 1) and intrahepatic biliary radicals without any visualizable calculus / mass obstructing the terminal portion of CBD. Her liver function test revealed elevated levels of alkaline phosphatase, serum aspartate aminotransferase (AST) and alanine transaminase (ALT).

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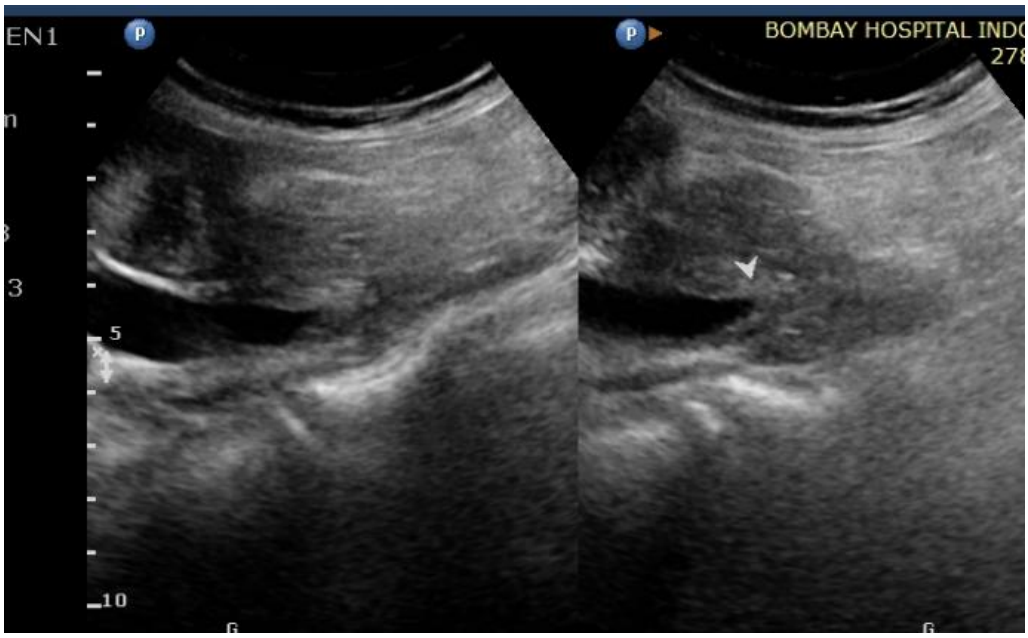


Figure 1 Ultrasound images show dilated CBD without any intraluminal calculus or mass

MR was advised for better visualization of the biliary- pancreatic region. An extraluminal hypointense lesion (figure 2) is obstructing the terminal CBD and pancreatic duct resulting in upstream dilatation of the biliary radicals (figure 3).

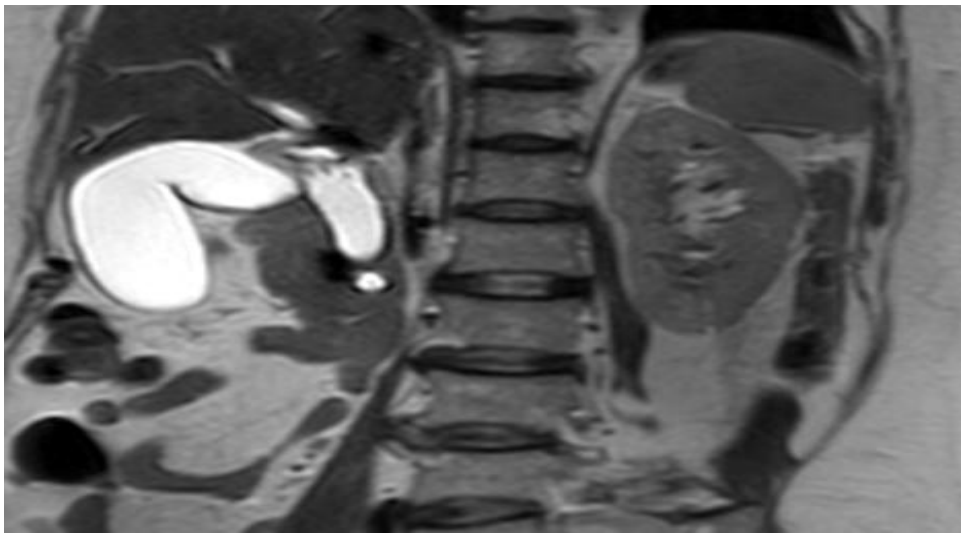

Figure 2 MR T2 coronal image reveals an extraluminal hypointense lesion obstructing the terminal part of CBD and pancreatic duct leading to a benign stricture. Gall bladder is over distended.

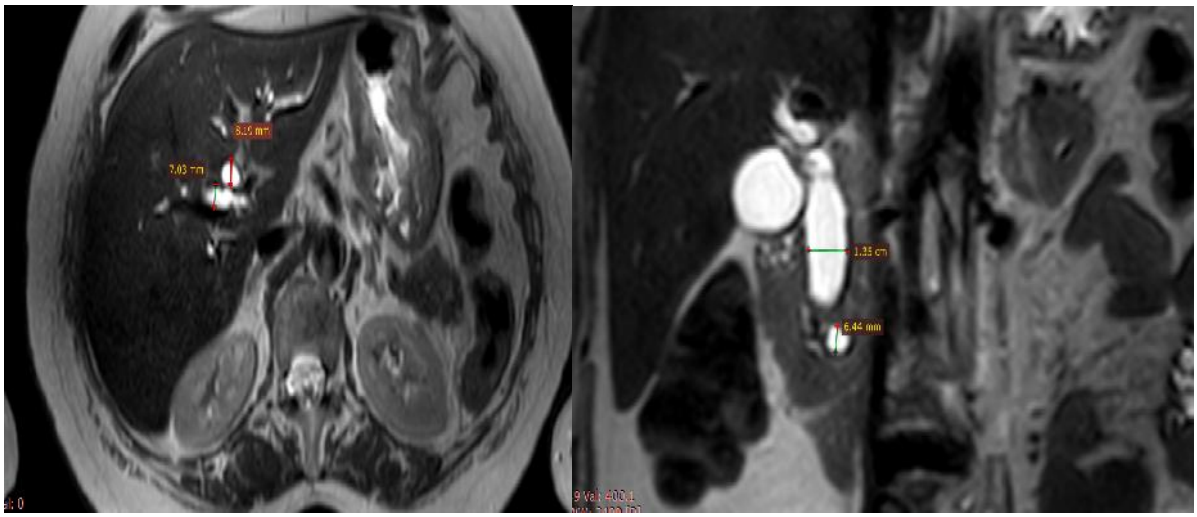

Figure 3 MR axial and coronal images reveal dilated intrahepatic ,extrahepatic biliary radicals and the pancreatic duct.

Suspicion of DD was confirmed by taking MR coronal oblique images after giving positive oral contrast (figure 4 & 6) showing a fluid level on axial image (figure 5)

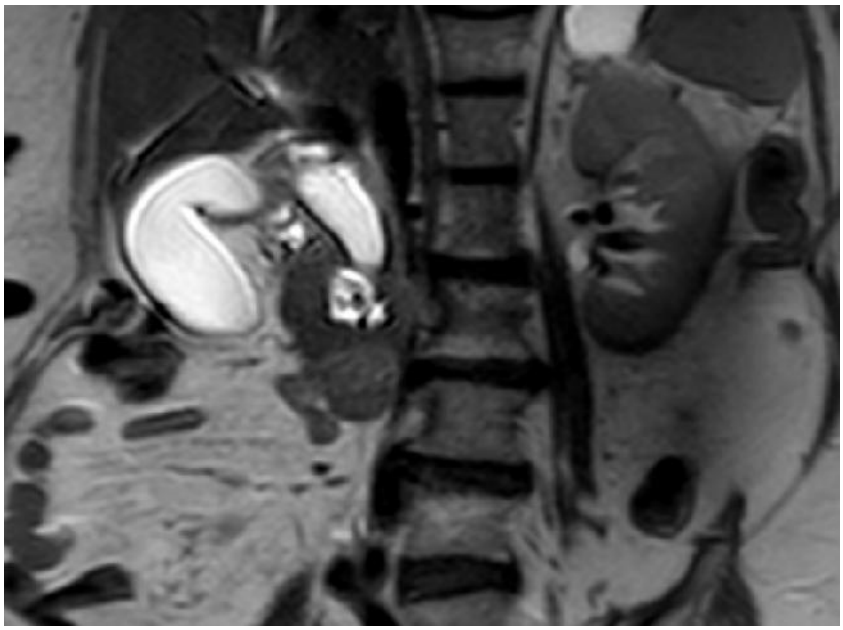

Figure 4 MR T2 oblique coronal image with oral contrast reveals filling up of the hypointense lesion with hyperintense intraluminal contrast

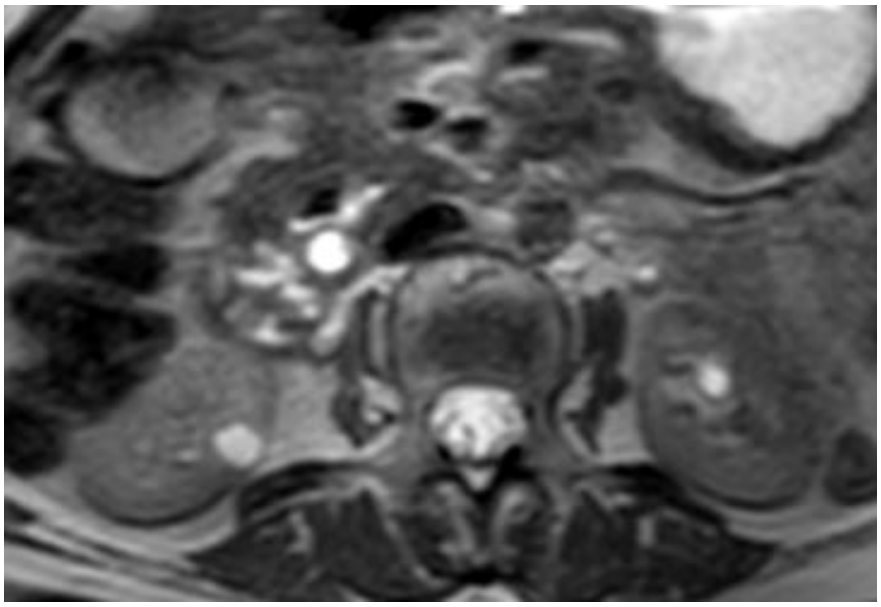

Figure 5 Post oral contrast MR T2 axial image reveals fluid level in the previously described hypointense lesion. Tiny cortical cyst is seen in the right kidney.

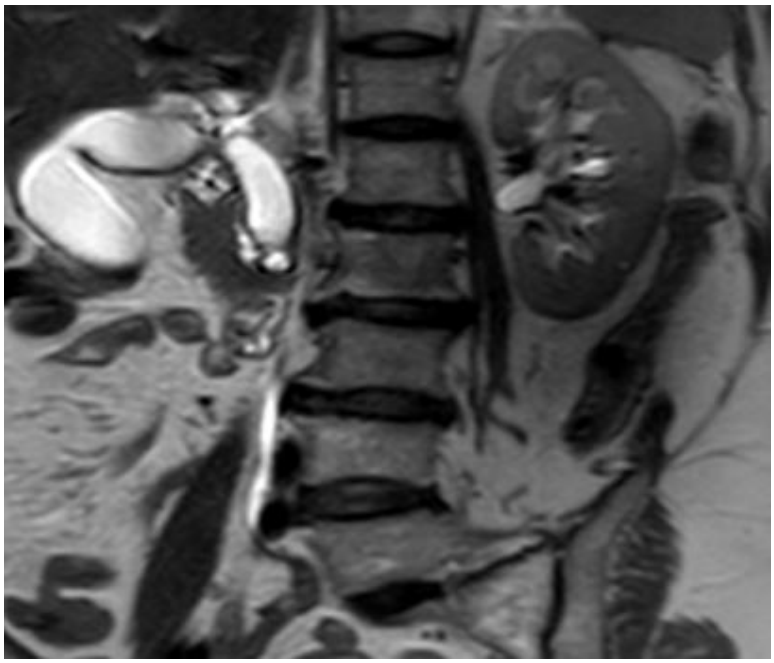

Figure 6 MR T2 oblique coronal image reveals the neck of the diverticulum obstructing the ampulla/ terminal CBD.

Patient was advised removal of the DD and after her consent endoscopic removal with sphincterotomy was done. Post operative liver function tests normalized.

## DISCUSSION

Lemmel syndrome is obstructive jaundice in the absence of gallstones due to a periampullary DD. This can be recurrent or complicated by cholangitis, which is attributed to mechanical compression of the terminal bile duct by diverticulum [4]. Pathophysiologically Lemmel syndrome can develop by three ways. First, direct mechanical irritation by DD may cause chronic inflammation of the ampulla, which leads to fibrosis of the papilla. Second, DD may cause dysfunction of the sphincter of Oddi leading to regurge of intestinal contents giving rise to bacterial overgrowth. Third, the distal common bile duct or ampulla can be compressed mechanically by DD [5].

Imaging is important for correct diagnosis of Lemmel syndrome with CT and MR imaging revealing thin walled lesion arising from the medial wall of the duodenum. Sometimes these diverticula can be filled with fluid and misdiagnosed as a pancreatic abscess, cystic neoplasm in the pancreatic head, or as a metastatic lymph node [6]. Hemorrhage, fistula, or perforation and enterolith formation are the major non-pancreaticobiliary complications and their pathophysiology revolves around inflammation of the diverticulum whereas the pancreaticobiliary complications include gall-bladder and bile-duct stones, obstructive jaundice, cholangitis, as well as acute and chronic pancreatitis [7].

Surgical excision of the diverticulum, endoscopic extraction of entrapped material, extracorporeal shock wave lithotripsy, laparoscopic diverticulectomy, endoscopic sphincterotomy, papillary balloon dilatation and conservative medical management are treatment options chosen on the basis of severity of symptoms and ease of access of the DD.

## CONCLUSIONS

Lemmel syndrome occurs when a DD causes obstructive jaundice due to a mechanical obstruction of the common bile duct. Imaging is necessary for diagnosis of this rare entity. Treatment option depends on the nature of symptoms and accessibility of the diverticulum. In our case surgical intervention lead to normalization of the liver function tests.

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