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Lemmel Syndrome: A Rare Cause of Obstructive Jaundice

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Abstract: ***This article presents a unique case of Lemmel syndrome, a rare condition causing obstructive jaundice, in a 65 - year - old male. The patient exhibited symptoms of yellowish skin and sclera, accompanied by pruritus. Diagnostic tests revealed elevated bilirubin and liver enzymes, indicating an obstructive liver pattern. Crucially, CECT abdomen imaging identified a peri ampullary duodenal diverticulum obstructing the common bile duct, leading to biliary ductal dilatation. This condition, first described in 1934 by Lemmel, is characterized by biliary obstruction due to a peri ampullary duodenal diverticulum in the absence of choledocholithiasis or distal neoplasms. The patient was managed conservatively and monitored through follow - up, declining invasive intervention. The article underscores the importance of considering Lemmel syndrome in differential diagnosis for obstructive jaundice, especially when common causes are absent. It also emphasizes the utility of CT and MRI in diagnosing this condition, and discusses various treatment options, including surgical resection, endoscopic intervention, and conservative management, highlighting the complexity of surgical intervention in this region.***

Keywords: Lemmel syndrome, obstructive jaundice, peri ampullary duodenal diverticulum, CECT abdomen, conservative management

1. Clinical History

A 65 - year male presented to the surgery department with a complaint of yellowish skin and sclera with pruritus for 20 days, then referred to the radiology department for CECT abdomen. Laboratory tests revealed high total bilirubin level, alkaline phosphatase level, aspartate aminotransferase (SGOT) and obstructive pattern of liver function tests with normal serum amylase.

2. Imaging Findings

CECT abdomen showed dilatation of entire CBD, CHD, cystic duct, central and peripheral IHBR (intra hepatic biliary radicles) (fig.1 & 2) and a peri ampullary duodenal diverticulum (fig.3) containing mixed - attenuation material causing obstruction of distal common bile duct and with resultant moderate degree of proximal biliary ductal dilatation. Diverticulum walls demonstrate weak homogeneous enhancement, greatest in venous phase at about 45 s after injection, with no mass - like behavior. The peri ampullary duodenal diverticulum was also compressing the pancreatic head, but there was no evidence of pancreatic duct dilatation.

3. Discussion

We report here a rare case of Lemmel syndrome. In 1934, Lemmel syndrome was first described by Lemmel which is defined as obstructive jaundice caused by peri ampullary duodenal diverticulum (PAD) in absence of choledocholithiasis or any distal neoplasm. PAD may appear as a rounded collection of gas mixed material situated along the medial wall of second part of the duodenum on unenhanced CT, sometimes filled with fluid and misdiagnosed as a pancreatic abscess or pseudocyst [1]. Relevant clinical history and imaging findings lead to the most likely diagnosis - Lemmel syndrome, which is biliary obstruction due to a peri ampullary duodenal diverticulum causing compression of distal CBD. After diagnosis, the patient was managed conservatively, then discharged after 2 weeks and kept on follow - up because of declining for any intervention like percutaneous transhepatic cholangiography and drainage which would be done for relief of obstructive symptoms. Duodenal diverticula typically occur along the medial aspect of the second or third part of the duodenum [2] and are commonly recognized as an incidental finding at cross - sectional imaging. Duodenal diverticula can be found in up to 22% of the population, only 1–2% of these patients become rarely symptomatic [7, 8] and present with bleeding, perforation, recurrent cholangitis, pancreatitis, bezoar or enterolith formation and rarely obstructive jaundice [3, 6] and the symptoms can be intermittent. CT and MRI can noninvasively give the proper diagnosis and also enable exclusion of other common peri ampullary diseases causing obstructive jaundice. Lemmel syndrome should be taken into consideration when there is no evidence of choledocholithiasis or other common causes of obstructive jaundice. A peri ampullary duodenal diverticulum typically has a relatively wide orifice; therefore, an enterolith within it is frequently expelled into the duodenum, without any sequelae. However, recurrent infection, inflammation or both can lead to narrowing of the orifice and hinders clearance of the entrapped enterolith [4] which can cause mass effect on the adjacent common bile duct. Treatment options include surgical resection, endoscopic intervention or conservative management - as done in our case. Surgical resection in this region is particularly difficult as it often involves a step of mobilization of the retroperitoneal duodenum [5].

Differential Diagnosis List

Groove pancreatitis - para duodenal pancreatitis, Pancreatic pseudocyst, Peri ampullary neoplasm, Metastatic lymph node, Todani type III choledochal cyst.

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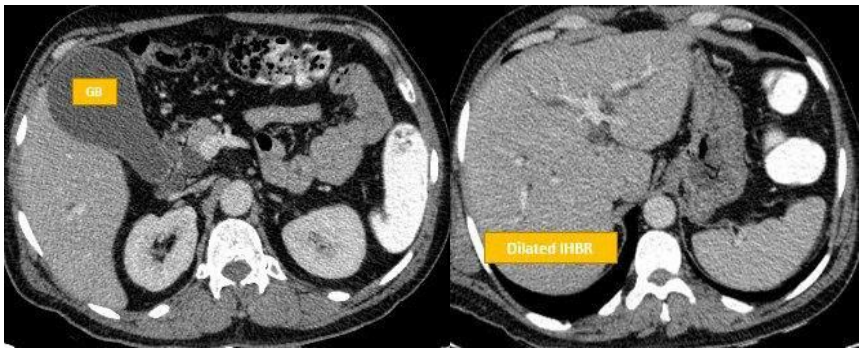

Figure 1 & 2: axial section of venous phase of CECT showing CBD, CHD, cystic duct and IHBR.

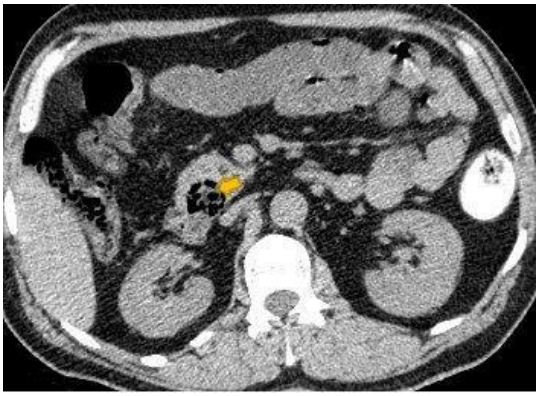

Figure 3: Axial section of venous phase of CECT showing peri ampullary diverticulum compressing lower end of CBD with proximal dilatation of it.