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A Case Report On Meandering Pancreatic Duct.

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ABSTRACT
We report a case of a 30-year-old man who complained of abdominal pain and was later diagnosed with calculus cholecystitis. Along with calculous cholecystitis, a Meandering main pancreatic duct was discovered incidentally on MRCP. The meandering main pancreatic duct (MMPD) is a rare anatomical variation of the main pancreatic duct, where the main pancreatic duct lacks an aberrant pancreaticobiliary junction but exhibits an irregular curvature at the pancreatic head region. It has two anatomical variations: a loop-type and a reverse Z-type.
KEYWORDS: Meandering Main Pancreatic Duct (MMPD), MRCP, Chronic pancreatitis, Pancreatic duct anomalies.

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I. INTRODUCTION:

A rare anatomical variation of the main pancreatic duct known as the meandering main pancreatic duct (MMPD) lacks an aberrant pancreaticobiliary junction but exhibits an irregular curvature at the pancreatic head region. It has two anatomical variations: a loop-type and a reverse Z-type. Imaging techniques, such as magnetic resonance cholangiopancreatography (MRCP) and endoscopic retrograde cholangiopancreatography, can be used to diagnose these variants (ERCP).

Normal variations and congenital anomalies of the pancreas and pancreatic duct typically go unnoticed in asymptomatic patients until they reach adulthood, and even then, they are frequently discovered by chance.[1,2] Idiopathic recurring pancreatitis has been linked to this kind of variation.[3]

II. MATERIALS AND METHODS

Informed consent was taken from the patient and MRCP was done on 1.5 tesla MRI

CASE DETAILS

A 30-year-old man, who is a chronic alcoholic presented to the outpatient department with constant pain and tenderness in the right hypochondrium.

Ultrasound showed calculous cholecystitis with dilated common bile duct. Pancreas was normal. MRCP was advised for further evaluation.

MRCP showed an overdistended gallbladder with T2W hypointense filling defect (**marked with arrows in figure 1**) of size measuring 3.4x1.5x2cm (TRXAPXCC) in its widest cross-sectional diameter in the neck and proximal body, T2W hypointense sludge noted in the dependent portion of the gall bladder **(Figure 1).**

Also seen is, an abnormal course of the main pancreatic duct which formed a loop superiorly in the head of the pancreas (loop type) before its insertion into the major papilla **(marked with arrows in figure 2 and 3)**

IMPRESSION: Calculous cholecystitis with meandering main pancreatic duct (loop type).

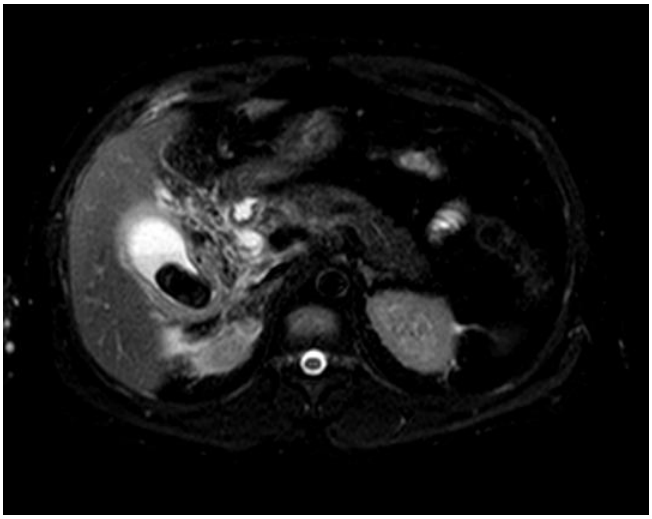

Figure 1: T2W SPAIR axial section showing hypointense calculus in the neck of the gall bladder with sludge.

Figure 2: Abnormal course of the main pancreatic duct which formed a loop (arrow) superiorly in the head of the pancreas (loop type) before its insertion into the major papilla.

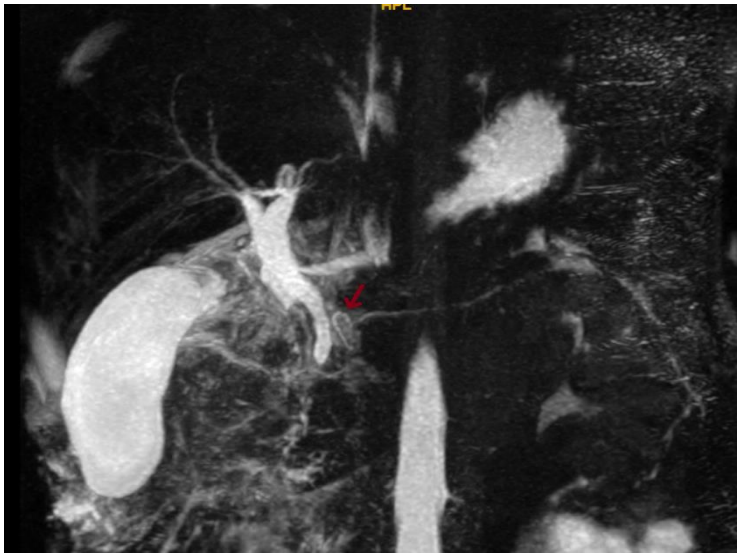

Figure 3: 3D MIP image showing the abnormal course of the main pancreatic duct which formed a loop (arrow) superiorly in the head of the pancreas (loop type) before its insertion into the major papilla.

III. DISCUSSION:

The main pancreatic duct(MPD) usually runs smoothly with an obtuse-angled curve from the tail and the body of the pancreas through the head of the pancreas to the major papilla.
Occasionally, MPD can be seen performing a hairpin turn (reverse Z-type) or loop (loop-type) in the pancreatic head. These two variants fall under the Meandering main pancreatic duct (MMPD) category.

The various MMPD subtypes are depicted in the figure below.

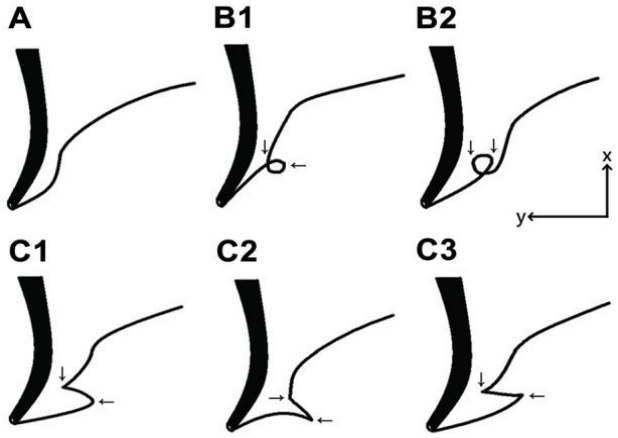

Figure 4: The common bile duct is represented by the thick line, and the major pancreatic duct is represented by the thin line. Normal type (A), loop type (B1, B2), and reverse Z type are the various subtypes (C1, C2, C3) [3]

A review of the literature reveals a single study from Tokyo University that highlights the importance and relevance of MMPD as a cause of idiopathic recurrent pancreatitis[3]**. In contrast, in our case, MMPD was discovered inadvertently in a patient with calculous cholecystitis**. Given the correlation between MMPD and other pancreatic duct defects and pancreatitis, even though our patient did not exhibit any symptoms or signs of pancreatitis, there is a chance that our patient could do so in the future [3,5,6,7.]
In our patient, there was no dilatation of the MPD or any parenchymal abnormality, like in the study done by Gonio et al .[3]
MRCP is the investigation of choice in the diagnosis of MMPD and other ductal anomalies. Heavily T2-weighted MRCP easily and precisely detects the rare variant.

IV. CONCLUSION:

A very high level of suspicion is needed to diagnose the Meandering Main Pancreatic Duct (MMPD), a rare anatomical abnormality that is a significant cause of Idiopathic Recurrent Pancreatitis. Diagnosing and treating these rare variations depend heavily on knowledge about them. Since MRCP is non-invasive, it is the test of choice for identifying MMPD and keeping a watchful eye out for the emergence of new problems in such instances.

ABBREVIATIONS: MMPD- Meandering Main Pancreatic Duct, MRCP- Magnetic resonance cholangiopancreatography. ERCP- endoscopic retrograde cholangiopancreatography.

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