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A Rare Case Of Median Arcuate Ligament Syndrome Presented with Post-Prandial Angina

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ABSTRACT

Median arcuate ligament syndrome is a rare disorder that is clinically characterized by the triad of post-prandial abdominal pain, weight loss, and often an abdominal bruit due to compression of the celiac artery by the median arcuate ligament.It is typically a diagnosis of exclusion and may be detected via several imaging techniques like ultrasonography and computed tomography angiography.

INTRODUCTION

Median arcuate ligament syndrome (MALS) is a rare disorder resulting from extrinsic compression and narrowing of the celiac artery, and—less often—the superior mesenteric artery, by the relatively low insertion of the ligament and/or prominent fibrous bands or ganglionic periaortic tissue of the celiac nervous plexus.

The median arcuate ligament (MAL) is a fibrous arch crossing the aorta, usually superior to the celiac artery takeoff and at the level of the insertion of the diaphragm bridging the crura.Occasionally, the ligament may insert at a lower level, thus crossing the proximal portion of the celiac artery.MAL syndrome is the rare disorder caused by the extrinsic compression that the relatively inferior insertion of the MAL and/or prominent fibrous bands or the ganglionic periaortic tissue of the celiac nervous plexus may exert on the celiac artery.Typically, celiac artery compression is clinically characterized by weight loss, postprandial abdominal pain, and nausea and vomiting: symptoms believed to be secondary to intermittent foregut ischemia.

CASE REPORT

A 48-year-old male with no significant past medical history presented to the clinic with a 8 months history of intermittent epigastric abdominal pain after meals. The pain was associated with nausea, nonbilious emesis, and bloating. The pain became worse when he ate food; the nausea worsened with any oral intake and relieved with bowel rest. He had not any history of diarrhea and denied any radiation of the pain to other locations in her body. He denied excessive alcohol, any illicit drug, or any tobacco product use. He had lost 6 Kgs over 8 months. His physical examination revealed epigastric tenderness to palpation but no other abnormalities.

Liver function tests, amylase, lipase, and complete blood count were all within normal limits.Urine routine microscopy was indicative of UTI.USG whole abdomen was normal. Upper GI endoscopy showed antral gastritis. Colonoscopy showed no any significant abnormality. Biopsies of both endoscopies did not show any significant abnormalities.CECT Whole abdomen showed hypertrophy of bilateral median arcuate ligament causing extrinsic compression and severe narrowing of celiac trunk at origin.

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DEPARTMENT OF RADIO-DIAGNOSIS & IMAGING

Patient Name : BHOPESH MEGHWAL **Age** : 48 Y **Sex** : M
Date : 27.03.2023 **Reg No** : 202303210380
Ref By : PIMS

128 SLICE HELICAL C.T. SCAN REPORT OF WHOLE ABDOMEN (CONTRAST):

Post contrast helical CT Scan of whole abdomen was performed, plain sections were obtained prior to this. Bowel loops were opacified with oral contrast.

Imaging Findings:-

There is hypertrophy of bilateral median arcuate ligament noted measuring approx. 11mm in thickness causing extrinsic compression and severe narrowing of celiac trunk at the origin.

Liver is enlarged in size (16.5 cm), architecture, attenuation and enhancement. There is no evidence of focal lesion. IHBR are non-dilated. Portal vein is normal in caliber. There is no evidence of portocaval vascular anastomosis.

The gallbladder appears well distended. No radiodense intraluminal calculus is seen. The CBD appears non-dilated.

The pancreas and spleen appear normal in size, morphology and enhancement. No focal or diffuse abnormality is seen. The peripancreatic fat appears normal.

Both kidneys are normal in size, shape, position and enhancement. No focal lesion is identified. No renal calculus is seen.

The urinary bladder is well distended and has a normal configuration; no intraluminal or mural abnormality is seen.

There is no abdominal adenopathy. There is no free air, free fluid, or inflammatory change in the peritoneal cavity.

The rectum and large intestine are normal in luminal caliber and mural thickness. No abnormal fluid collection or bowel wall thickening is seen in the right iliac fossa.

There is no aneurysmal dilatation of the aorta.

The lung bases are clear, and the heart is not enlarged. The included bony structures appear normal.

IMPRESSION:-

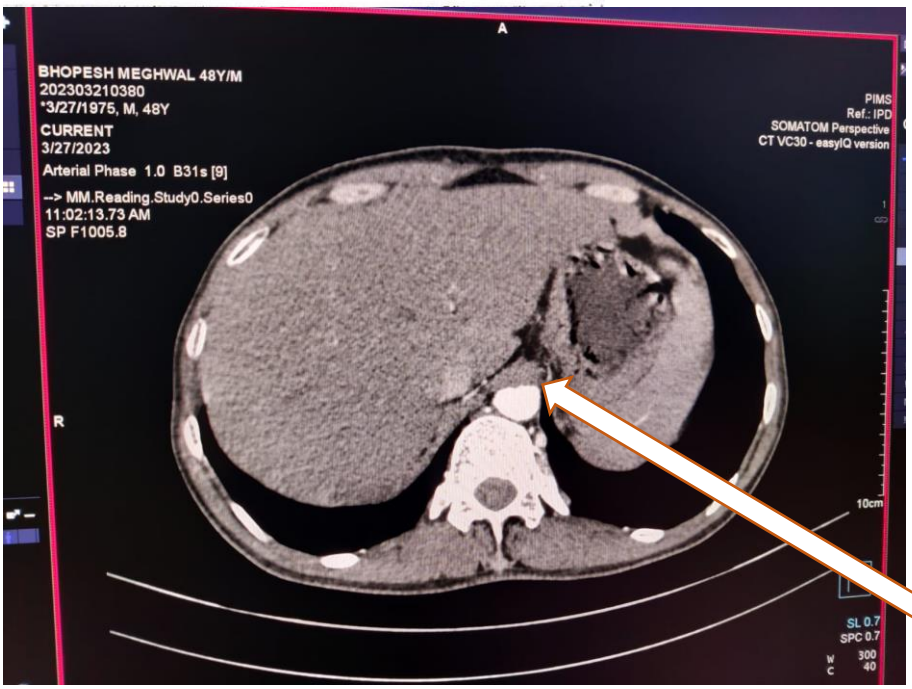
- ***Median arcuate ligament syndrome.***
- ***Mild hepatomegaly.***

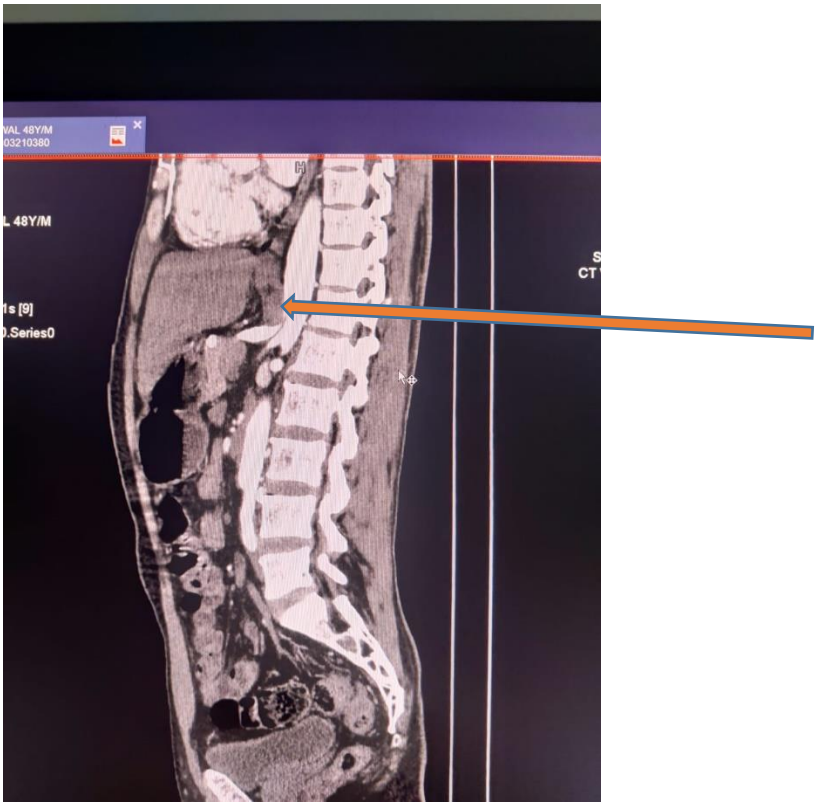
ADV: Correlation with clinical findings and relevant further investigations may be more informative.

Dr. Rajaram Sharma
Associate Prof. Radiodiagnosis

Dr. Dipen
PGJR II Radiodiagnosis

All investigations have their limitation which are imposed by the limits of sensitivity & specificity of individual assay procedure. Isolated laboratory investigations never confirm the final diagnosis of the disease. They only help in arriving at a diagnosis in conjunction with clinical presentation & other related investigations. This Report is Not Valid for Medico-legal Purpose.





The patient was adviced for surgical management by cardio-thoraco-vascular surgeon but patient refused.so patient was managed medically.

DISCUSSION

The MALS or CACS is a rare cause of postprandial pain and weight loss.The incidence of MALS has been found in 10–24% .The etiology is celiac artery compression by the medial arcuate ligament (MAL) resulting in compromised blood flow and symptom causation. However, some patients are asymptomatic due to sufficient collateral supply from superior mesenteric circulation.The goal of MALS treatment is restoring normal blood flow in the celiac axis [2]. Classically, a simple surgical division of the fibrous ligament was performed.Other complex surgical procedures like vascular reconstruction of the celiac artery with patch angioplasty, aortoceliac bypass, and reimplantation of the celiac artery may be needed in some patients. However, open surgery is more invasive and increases the morbidity rate. The recently application of laparoscopy in the division of MAL has proven to be a novel technique because it is less invasive and involved with a lower morbidity rate than open surgery.However, the outcomes from several of these studies are based on only short follow up periods.

Percutaneous angioplasty with stenting is an alternative technique for the treatment of MALS. It is a minimally invasive technique, characterized by short hospitalization and low morbidity rate. In our opinion, endovascular treatment is beneficial in some selected cases such as those with a failure of traditional surgery, as in the case presented here, or contraindication to surgery. Moreover, cases of

permanent changes in the celiac artery with inadequate flow after successful surgery may benefit from adjunct intraluminal treatment.

CONCLUSION

This case confirms that MALS is a diagnosis of exclusion. Patients usually undergo extensive workup for their abdominal pain before this diagnosis is reached. Confirmation of these findings can be done on CT angiography.

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