



A CASE REPORT OF MEDIAN ARCUATE LIGAMENT SYNDROME

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ABSTRACT Median arcuate ligament compression syndrome (MALS) is caused by the external compression of coeliac axis by the median arcuate ligament. This syndrome is more frequent among females with age between 30-50 years. CT Angiography (CTA) of abdomen is gold standard diagnostic method. Here, a 46 year hindu male patient presented with complaints of chronic post-prandial abdominal pain, constipation and anorexia. CECT scan abdomen-pelvis and CT angiography of abdominal aorta suggestive of moderate focal stenosis of proximal part of coeliac axis with thickening of median arcuate ligament. The patient was treated by exploratory laparotomy and release of median arcuate ligament.

KEYWORDS :**INTRODUCTION**

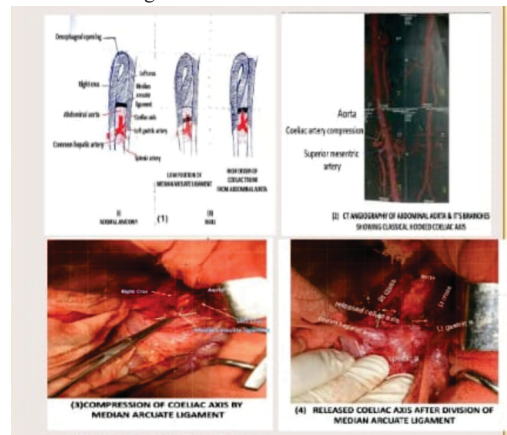
- Median arcuate ligament compression syndrome (MALS) or coeliac axis compression syndrome (CACS) or Dunbar syndrome is an uncommon condition caused by the external compression of coeliac axis by the median arcuate ligament.
- It typically occur in women with symptoms like chronic abdominal pain, nausea, vomiting, weight loss, constipation & an abdominal bruit due to compression of coeliac artery by the median arcuate ligament.
- The diaphragmatic crura arise from the anterior surface of the L1-L4 vertebral bodies on the right and first two or three lumbar vertebral bodies on the left. In addition, the crura arise from the intervertebral disks and anterior longitudinal ligament. The crura pass superior to surround the aortic opening and to join the central tendon of the diaphragm.
- The median arcuate ligament is a fibrous structure that connects the two crura of the diaphragm at L1 vertebra, which are on either side of the aorta. This ligament typically passes superior to the origin of the coeliac axis as the coeliac axis migrates caudally during embryogenesis. In MALS, the ligament is positioned low, crossing over proximal portion of the coeliac axis and compressing it or the origin of coeliac axis is high. (image 1)
- The compression of coeliac axis is usually seen on the sagittal view of a CECT abdomen, where it shows hooked appearance of coeliac axis.
- The treatment of this syndrome is division of the median arcuate ligament to relieve extrinsic compression either by open method or by laparoscopic method.

CASE REPORT

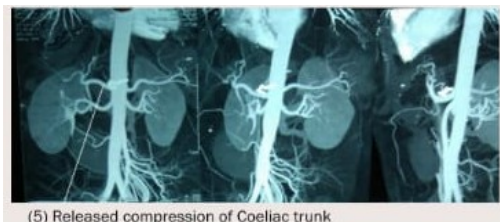
- A 46 year hindu male patient coming from lower socio-economic class working as a farmer presented with complaints of chronic post-prandial abdominal pain for 5 years, episodes of constipation for 2 years and anorexia for 2 years. No complaint of vomiting, abdominal swelling, weight-loss, fever or per-rectal bleeding.
- On general examination, patient was vitally stable. No conjunctival congestion/ anemia/ clubbing/ cyanosis present. Bilateral airway entry was present with no crepitations in respiratory examinations.
- On abdominal examination, there was no lump/ swelling/ distension/ dilated veins/ any visible scar-mark. Mild tenderness present in epigastric region. Abdominal aortic bruits were present on auscultation in epigastric area.
- The ultrasonography of abdomen and UGI-scopy were normal.
- CECT scan abdomen-pelvis and CT angiography of abdominal aorta suggestive of moderate focal stenosis of proximal part of coeliac axis near its origin with indentation of superior surface of coeliac axis and post stenotic dilatation with thickening of median

arcuate ligament. (image 2)

- The patient was treated by exploratory laparotomy and release of median arcuate ligament.

**POST OPERATIVE STATUS**

- Post operative recovery was uneventful.
- Patient was started orally within 24 hours.
- Left sided abdominal drain was removed after 48 hours.
- Midline abdominal stitches were removed on post-operative day 8.
- Patient was discharged on post-operative day 10.

**POST OPERATIVE RESULT**

- Pre operative symptoms of this patient like abdominal pain and constipation were improved within duration of 5 days.
- Post operative CECT abdomen was done on post-operative day 7 suggestive of coeliac axis at its origin appear normal with normal contrast opacification. (image 5)

DISCUSSION

- MALS is a very rare (2:100000) syndrome and difficult to diagnose to make due to its non-specific symptoms and

presentation.

- MALS/CACS first described by Harolja in 1963.
- The etiology is coeliac axis compression by the median arcuate ligament resulting in compromised blood flow and symptom causation.
- This syndrome is more frequent among females with age between 30-50 years with calssical triad of post-prandial abdominal pain, epigastric bruit and weight loss(>20 lbs).
- Other symptoms include nausea, vomiting, diarrhea and a reduced appetite, all of which result from blood being shunted away from gastrointestinal tract.
- However zome patients are asymptomatic due to sufficient collateral supply from superir mesentric artery.
- CT Angiography (CTA) of abdomen is gold standard diagnostic method, which gives three dimensional reconstructions. In MALS, characteristic hook-loke appearance around coeliac axis is present with absence of arterial calcification.
- The goal of MALS treatment is restoring normal blood flow in coeliac axis.
- There is currently no medical treatment for MALS. Surgery is the only effective approach.
- Classically a simple surgical division of the fibrous ligament was performed either by open method or by laparoscopic method.
- The recently application of laparoscopy in the division of MAL has proven to be a novel technique because it is less invasive & it has lower morbidity rate than open surgery. Yet, the results from both procedures are equal. Studies have reported a clinical improvement after operation ranging between 65% to 80% at the 1-18 year follow-up time.
- Endo-vascular methods such as percutaneous transluminal angioplasty (PTA) have been use in patients who have failed open and/or laparoscopic intervention. PTA alone, without decompression of the coeliac artery, may not be of benefit.

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