Median Arcuate Ligament Syndrome: How to Diagnose and When and How to Treat: Open, Laparoscopic or Endovascularly: Does Treatment Work and How Should the Celiac Axis Be Managed

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First described – 1963 by Harjola

- Vascular – ischemic etiology
  - Compression and stenosis of celiac axis
  - And/or
  - Neurogenic etiology
  - Compression of celiacplexus somatic nerves

- Does the syndrome exist?


Symptoms


- Abdominal pain (postprandial) – 80%
- Weight loss -48%
- Abdominal bruit – 35%

Triad of symptoms <50%

Diagnostic Imaging

- Duplex testing
  - Celiac vel > 200 cm/s
  - >30 cm/s increase with expiration

MAL superior to origin of CA

Characteristic hook shaped contour of CA secondary to compression by MAL

Disclosures:

- Medtronic – Consultant
Median Arcuate Ligament Syndrome

**Diagnosis – cont’d**

- Endoscopy – upper and lower
- Gastric exercise tonometry
  - Gastric and arterial PCO2 before, during and after exercise
  - Up to 86% accurate for intestinal ischemia

**Diagnosis of exclusion**


**Danbury Hospital Experience – 35 patients**

- **Demographics**
  - Ages 16y – 81 y
  - Female – 25/35

- **Symptoms:**
  - Pain – 100% (56% postprandial), Wt loss – 46%

- **Preop testing – 85% had 3 or more tests**
  - CT/CTA – 100%
  - Duplex – 75%
  - Upper endoscopy – 79%
  - Colonoscopy – 69%
  - Gastric exercise tonometry – 0%

- **Vascular interventions:**
  - Patch angioplasty – 6
  - Angioplasty/stent – 0

80% (28/35) - required no other vascular interventions
11% (4/35) – did not have neurolysis
All patients had intra-op completion duplex/angio

- **Outcomes**
  - Follow-up
    - 3mo – 8mo
  - Recurrent symptoms (pain) – 20% (7/35)
    - 4/7 patients with recurrent celiac stenosis (3 patches; 1 stent)
      - 3/4 successfully managed with angioplasty and stent
      - 1/4 medically managed for gastritis
  - 3/7 patients without recurrent celiac stenosis
    - All 3 had neurolysis at original surgery
    - All 3 continue to have symptoms – misdiagnosed with MALS?

Of the 4 patients who did not have neurolysis only one had recurrent symptoms and it was secondary to recurrent celiac stenosis

**Conclusions**

- The high rate of success following MALR indicates that the syndrome does exist
  - Laparoscopic MALR can provide satisfactory results but there is a learning curve
  - It is still unclear as to whether compression of the celiac plexus nerve fibers plays a significant role in the causation of symptoms
  - Our results seem to indicate the importance of celiac artery compression-stenosis as an important cause of symptoms and recurrence of symptoms in this syndrome
The Vascular World is coming together in New York this November...

Veith Symposium
Coopering Medical University

And you're invited!

Tuesday, November 17 - Saturday, November 21, 2015