MEDIAN ARCUATE LIGAMENT SYNDROME

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Arterial Disease Uniquely Vascular Medicine

Median arcuate ligament syndrome is a cause of chronic mesenteric ischemia. The median arcuate ligament is a part of the diaphragm that surrounds the aorta. The diaphragm moves with respiration. This movement may cause tension on the celiac artery that is nearest to the median arcuate ligament. If kinking occurs, this can result in pain and non-atherosclerotic mesenteric ischemia.

What are the symptoms of median arcuate ligament syndrome?

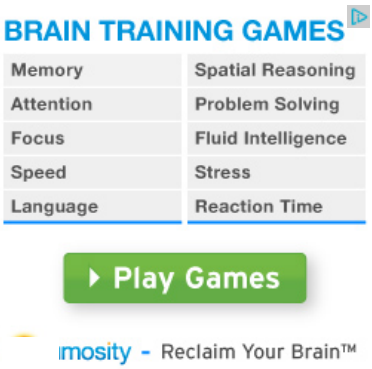
Median arcuate ligament syndrome should be suspected in patients with recurrent abdominal pain. The pain is usually epigastric. Pain is often related to food. Therefore, fear of food may result. Weight loss is the norm. Vomiting and diarrhea are not commonly associated with median arcuate ligament syndrome.

Why is there abdominal pain with median arcuate ligament syndrome?

There are several theories to explain pain with median arcuate ligament syndrome. Currently, the most popular theory involves pressure on the nervous plexus that surrounds the celiac artery. Kinking of the celiac artery and resultant mesenteric ischemia is another theory. Against this second theory is the notion that mesenteric ischemia requires two visceral arteries to be compromised because of natural collaterals.

Diagnosis of median arcuate ligament syndrome

Median arcuate ligament syndrome is diagnosed by combining the clinical story, physical findings and non-invasive testing. Physical findings include epigastric tenderness and a possible mesenteric bruit that may change with respiration. Patients are commonly under-weight. Non-invasive testing includes duplex ultrasound with respiratory maneuvers and CT. CT should be performed with contrast. In patients with median arcuate ligament syndrome there is usually lack of atherosclerosis. A focal stenosis of the celiac artery may be seen. It is best seen on sagital views. This, however, is not diagnostic. Duplex ultrasound with respiration offers more physiologic information. In patients with true median arcuate ligament syndrome the peak systolic velocity in the celiac artery will rise with expiration and decrease with inspiration. Sometimes angiography and images with respiration are needed to make the final diagnosis.



Gastric tonometry has been suggested as a method for the confirmation of the diagnosis of median arcuate ligament syndrome.

Treatment of median arcuate ligament syndrome

The treatment of median arcuate ligament syndrome can be endovascular with a stent or surgical. There is more data regarding surgical treatment. Surgery can offer two types of treatment in median arcuate ligament syndrome. First, release of the median arcuate ligament. Second, release of the nervous plexus that is being compressed. The plexus is called the celiac ganglion. This can be done by open surgery or by laparoscopy. Small published series have shown short term success and long-term recurrence. Some centers have tried injecting the ganglion under CT guidance. Endovascular stent placement in the celiac artery has been described. The problem with this approach is that the long-term patency of a stent in an area of repeated pressure may be low. Stent fracture may result.

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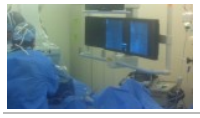
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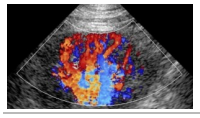
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