

Rare Cause of Chronic Post Prandial Abdominal Pain: Median Arcuate Syndrome

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DOI: [10.36347/sasjm.2022.v08i07.009](https://doi.org/10.36347/sasjm.2022.v08i07.009)

| Received: 22.06.2022 | Accepted: 19.07.2022 | Published: 22.07.2022

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Abstract

Case Report

Median arcuate ligament syndrome, is a rare anatomical and clinical entity characterised by chronic abdominal pain. This condition results from compression of the celiac trunk by a fibrous band of the diaphragm called the median arcuate ligament. generally of fortuitous discovery, its diagnosis is made on computed tomographic angiography. We report the case of a 40-year-old patient who was referred to us for atypical epigastric pain that increased after meals.

Keywords: Median arcuate ligament syndrome, coeliac trunk, stenosis.

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INTRODUCTION

Median arcuate ligament syndrome is a rare congenital anatomical variant affecting 10% of the population with a female predominance, and resulting from anatomical compression of the celiac axis and celiac plexus by the median arcuate ligament causing chronic abdominal pain.

Lack of awareness of this condition can lead to diagnostic errors in the context of chronic abdominal pain. We report a case of medial arcuate ligament syndrome.

CASE REPORT

A 40 years old patient, diabetic for 9 years on oral antidiabetics and who was referred to us for atypical epigastric pain worsening after meals associated with vomiting and diarrhea in a context of weight loss

An CT angiography was performed in this patient which showed a tight stenosis of the celiac artery followed by a slight stenotic post dilatation without collateral circulation.



Axial section of a abdominal CT angiography with contrast injection at arterial time showing stenosis of the proximal segment of the celiac trunk.



Sagittal reconstruction of an abdominal CT angiography with contrast injection at the arterial time

of stenosis of the proximal portion of the celiac trunk.



3D volume reconstructions demonstrating medial arcuate ligament syndrome.

DISCUSSION

The median arcuate ligament syndrome is a rare pathology, difficult to diagnose because of its non-specific clinical symptoms and its poorly elucidated physiopathology.

It represents a rare anatomical entity, resulting from extrinsic compression of the celiac trunk by the median arcuate ligament.

The median arcuate ligament is a fibrous band located at the level of D12-L1 that forms the anterior border of the aortic orifice.

This ligament usually passes over the aorta at the level of the vertebral body of L1 below the origin of the celiac trunk, however, its insertion may be low in 10 to 24% of patients and therefore passes over the proximal part of the celiac trunk causing a characteristic indentation which is at the origin of its compression and can be hemodynamically significant and cause clinical symptoms.

Prolonged compression of the celiac trunk can be responsible for an alteration of the blood supply of the celiac artery at the level of the gastrointestinal tract which can be responsible for vascular modifications such as intimal hyperplasia, adventitial disorganization and proliferation of the elastic fibers at the level of the media responsible for a set of classic symptoms; mainly post prandial abdominal pain associated with nausea, vomiting and weight loss.

Ligament compression of the celiac trunk may be asymptomatic in about 10 to 20% of patients.

Pain in median arcuate ligament syndrome is related to extrinsic compression of the celiac trunk and probably the celiac plexus which is located between the medial arch ligament and the celiac trunk at the level of the diaphragm.

This syndrome generally occurs in young people (20 to 40 years old) with a female predominance.

Aortic angiography is the reference examination for the diagnosis of medial arcuate ligament but CT angiography of the abdominal aorta is the less invasive imaging modality and thanks to the three-dimensional reconstructions in particular sagittal slices which gives an optimal cross-sectional plane to better visualize the proximal portion of the celiac trunk.

The protocol for the CT angiography of the abdominal aorta consists of an injection of contrast product at a dose of 120 ml at 3 ml/s with the realization of two arterial times at 25 and venous times at 50s for optimal vascular opacification.

The typical and evocative radiological signs of this syndrome are the asymmetric focal narrowing of the proximal portion of the celiac trunk with a characteristic hook-shaped aspect; a post-sternotomy dilatation with collaterals in the territory of restriction of the trunk.

The treatment of medial arcuate ligament syndrome includes interventional angioplasty and surgery.

Endovascular stenting of the celiac trunk alone without release of the medial arcuate ligament is

dismaying because of clinical failure due to stent slippage.

Surgical release of the median arcuate ligament and revascularization of the celiac trunk with celiac ganglionectomy is the treatment of choice.

This release can be performed by open laparoscopy or by a robotic approach.

CONCLUSION

The median arcuate ligament syndrome is a controversial entity with a diagnosis that is difficult to establish due to its atypical clinical signs.

CT angiography of the abdominal aorta is the gold standard in demonstrating extrinsic compression of the celiac trunk.

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