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Authors:

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Aneurysm of the hepatic artery caused by median arcuate ligament syndrome (MALS)

Yolanda Núñez Delgado¹, M.^a Ángeles Valero González¹ and Paloma García-Villanova Ruiz¹

¹Diagnostic Radiology Service. Hospital Clínico Universitario San Cecilio. Granada, Spain

Correspondence: Yolanda Núñez Delgado

e-mail: yolandadelgado452@gmail.com

Dear Editor,

We present the case of a 74-year-old male with a history of residual schizophrenia, who underwent an abdominal-pelvic computed tomography (CT) with intravenous contrast due to abdominal acute pain. A stenosis was identified at the origin of the celiac trunk and a large aneurysm of the hepatic artery, which was treated by placing two stents (Fig. 1).

Discussion

The median arcuate ligament of the diaphragm is a fibrous band that joins the two diaphragmatic crures, defining the anterior margin of the aortic hiatus (1,2). The MALS is usually asymptomatic but may occasionally present symptoms such as abdominal pain during or after exercise, nausea, vomiting and weight loss (1,2). This occurs as a result of a compromised blood flow due to compression of the celiac axis. Nevertheless, most of the celiac compressions do not present symptoms due to the collateral supply of the superior mesenteric artery.

The traditional diagnosis used to be performed by means of arteriography. However, this is currently being replaced by multidetector computed tomography (MDCT) and magnetic resonance (MRI) (1,2). MDCT allows the visualization of the arcuate ligament

itself and its anatomical relationships with the aorta and celiac trunk. The radiological findings that define this condition are:

- Superior imprint (greater in expiration) at the origin of the celiac trunk, providing the “in hook” morphology.
- Secondary vascular changes to the arterial lumen stenosis: atherosclerosis, poststenotic dilatations, distal pseudoaneurysms and collateral circulation.

A detailed anamnesis and an adequate radiological study is required for the diagnosis of MALS. Doppler ultrasound, angio-CT and MR angiography are the diagnostic techniques of choice, as they allow the defect and the collateral circulation to be identified when they develop (2). The chosen treatment in symptomatic cases is surgical, via sectioning of the ligament (2,3). The degree of occlusion of the celiac trunk can be a predictor of long-term results (3). Even though there was a radiological diagnosis for MALS in our patients, the aneurysm of the hepatic artery was treated with the placement of two stents.

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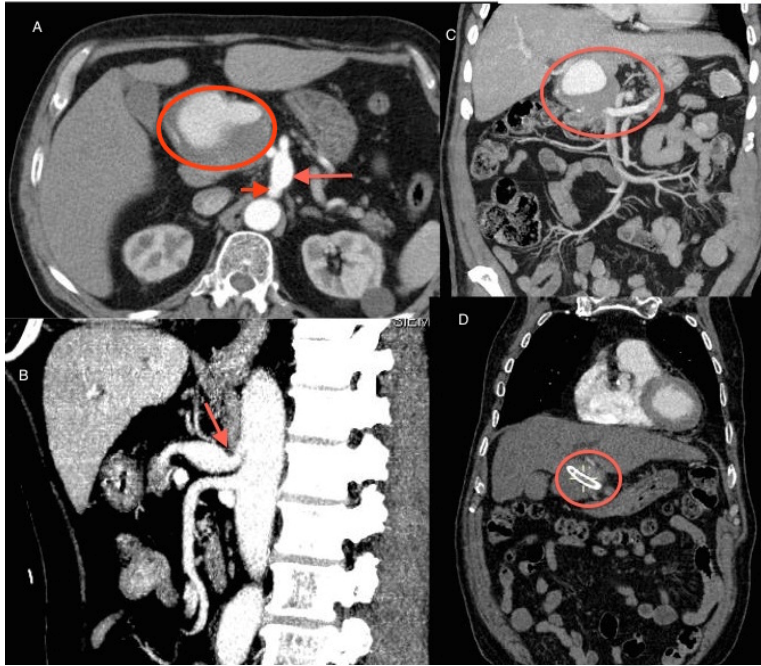


Fig. 1. Abdominal-pelvic CT with intravenous contrast in the arterial phase. A. Axial plane image. Short arrow: stenosis at the origin of the celiac trunk; long arrow: post-stenosis dilatation; and circle: aneurysm of the hepatic artery. B. Sagittal plane image. Arrow: imprint of the median arcuate ligament at the origin of the celiac trunk. C. Coronal plane image. Circle: large aneurysmal dilatation of the hepatic artery. D. Coronal plane image. Circle: aneurysm of the hepatic artery treated by stent.