Superior mesenteric artery syndrome in a young woman

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DESCRIPTION

Vascular structures in the abdomen and pelvis can be compressed by anatomical structures or cause the compression of adjacent hollow viscera. Superior mesenteric artery syndrome (SMAS) consists of obstruction of the third portion of the duodenum due to compression between the superior mesenteric artery (SMA) and the aorta.[1] The SMA typically arises at the L1–L2 level with an anterior and inferior course, and the third portion of the duodenum crosses between the aorta and the SMA at L3. The normal aorto-mesenteric angle (AMA) and aorto-mesenteric distance (AMD) are considered to be 28°–65° and 10–34 mm,[2 3] respectively. Our images demonstrate the classic findings of SMAS in a woman aged 31 years experiencing rapid weight loss with epigastric pain and fullness, showing the CT duodenal obstruction with an abrupt cut-off in the third portion (figure 1), abnormally low origin of the SMA (figure 2) with an AMA of 10° and an AMD (the most specific sign) of 7 mm (figure 3), and the importance of sagittal imaging to the measurements (figure 3). We also demonstrate one of the classic signs in ultrasound scan, stomach fullness, despite the inability to identify the AMA (figure 4).

As the presentation was acute, treatment was conservative and consisted of nasojejunal feeding to bypass the obstructions, small liquid meals and mobilisation of the patient. She was discharged

Figure 1 Axial—obstruction of the third portion of the duodenum between the superior mesenteric artery and the aorta with an abrupt cut-off.

Figure 2 Coronal—duodenal obstruction with an abrupt cut-off in the third portion, abnormally low origin of the superior mesenteric artery.

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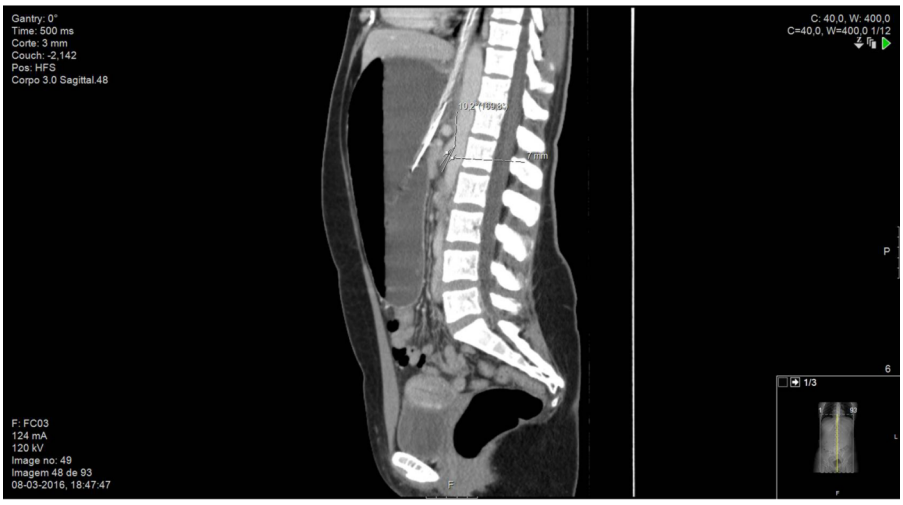

Figure 3 Sagittal—abnormally low origin of the superior mesenteric artery with an aorto-mesenteric angle of 10° and an aorto-mesenteric distance of 7 mm.

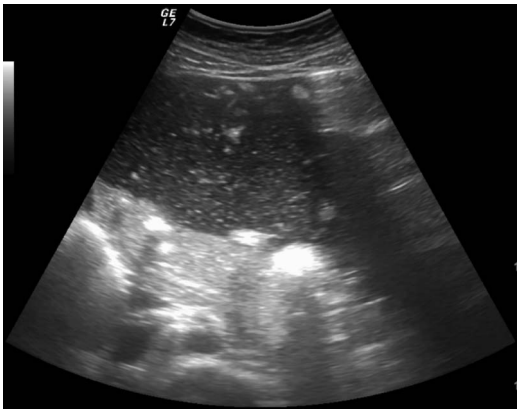

Figure 4 Marked gastric distension.

after 2 weeks with no sequela and advised hyperalimentation to restore retroperitoneal fat. In the 6 and 12 months follow-up, the patient was asymptomatic, with near normalisation of the AMA and AMD, so it was advised to maintain the nutritional changes.

Learning points

- Superior mesenteric artery syndrome (SMAS) is an uncommon but possible diagnosis in a patient with postprandial fullness.
- CT in the arterial phase is mandatory in the diagnostic approach.
- SMAS has a rapid resolution in most cases.

Contributors CABO and LB reported the ultrasound and CT in the emergency room. TD reviewed the entire work.

Competing interests None declared.

Patient consent Obtained.

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REFERENCES

1 Ghaye B, Remy J, Remy-Jardin M. Non-traumatic thoracic emergencies: CT diagnosis of acute pulmonary embolism diagnosis II. *Semin Nucl Med* 2002;32:173–82.
2 Washington L, Goodman LR, Gonyo MB. CT for thromboembolic disease. *Radiol Clin North Am* 2002;40:751–71.
3 Wu AS, Pezzulo JA, Cornan JJ, *et al*. CT pulmonary angiography: quantification of pulmonary embolism: prospective detection on routine helical CT scans. *Radiology* 1998;208:209–15.