



Superior mesenteric artery syndrome in a patient with rheumatoid arthritis and rheumatoid cachexia during the COVID-19 pandemic

Dionicio Ángel Galarza-Delgado¹ · Diana Elsa Flores-Alvarado¹ · Jesús Eduardo Compeán-Villegas¹

Received: 14 November 2020 / Revised: 22 December 2020 / Accepted: 25 December 2020 / Published online: 11 January 2021
© International League of Associations for Rheumatology (ILAR) 2021

Presentation

We report the case of a 30-year-old Mexican woman who presented to the emergency department due to intense abdominal pain. She had a 5-year prior diagnosis of rheumatoid arthritis (RA). On examination she appeared pale and cachectic. Her body mass index was 17.5 kg/m². Renal and liver function was normal. Rheumatoid factor isotype IgM 73 U/mL (<20) and anti-CCP antibodies 15 U/mL (<5) were positive. Computed tomography scan revealed a decrease in the aortomesenteric distance (AMD) with an anteroposterior diameter of up to 6 mm leading to a significant decrease in the third duodenal portion caliber. In sagittal section, a decreased of the aortomesenteric angle (AMA) of 14° was measured (Fig. 1). Infections, neoplasms, endocrine disorders, malabsorption, and intestinal ischemia were ruled out.

As her SARS-CoV-2 PCR test was positive, she was transferred to the COVID-19 hospital area causing a delay in her therapeutic management. She was treated with total parenteral nutrition for a month until she was able to be fed by mouth.

Discussion

Superior mesenteric artery (SMA) syndrome is an uncommon disorder in which acute angulation of the

SMA causes compression of the third portion of the duodenum against the aorta leading to obstruction. Loss of retroperitoneal fatty tissue is believed to be the etiologic factor [1].

Normally, the AMA is between 38 and 56°, but when it decreases to 6–22°, extrinsic compression of the duodenum can occur. The AMD with a normal interval of 10–28 mm, can decrease to 2–8 mm in SMA syndrome. As the computed tomography allows for evaluation of these parameters and exclude other diagnosis, it is a valuable imaging modality [2].

Patients with RA are at risk of rheumatoid cachexia, a serious consequence of refractory or long-standing disease. Unlike classic cachexia, an excess of proinflammatory cytokines is the central feature, which leads to muscle proteolysis and anorexia, perpetuating the loss of body cell mass [3], and finally in the SMA syndrome. According to case report recommendations, the initial management of the patient was conservative [4]. Those strategies include adequate fluid resuscitation, positioning to increase the AMD, gastric decompression, post-pyloric feeding when possible followed by oral diet as tolerated [5]. Although the information on rheumatological diseases and SMA syndrome is scarce, there is sufficient theoretical to support its consideration. This case leads to reflection on the importance of the nutritional assessment of patients with rheumatological diseases and highlights the impact that the pandemic has had so far on the diagnostic and therapeutic approach of patients with systemic rheumatic diseases and their associated complications.

✉ Dionicio Ángel Galarza-Delgado
dgalarza@medicinauanl.mx

¹ Servicio de Reumatología, Hospital Universitario “Dr. José Eleuterio González”, Universidad Autónoma de Nuevo León, Av. Gonzalitos No. 235 Nte. Col. Mitras Centro, 64460 Monterrey, N.L.C.P, Mexico

Contributors DAGD, DEFA, and JECV contributed equally to the manuscript. All authors critically revised and approved the final version of the manuscript.

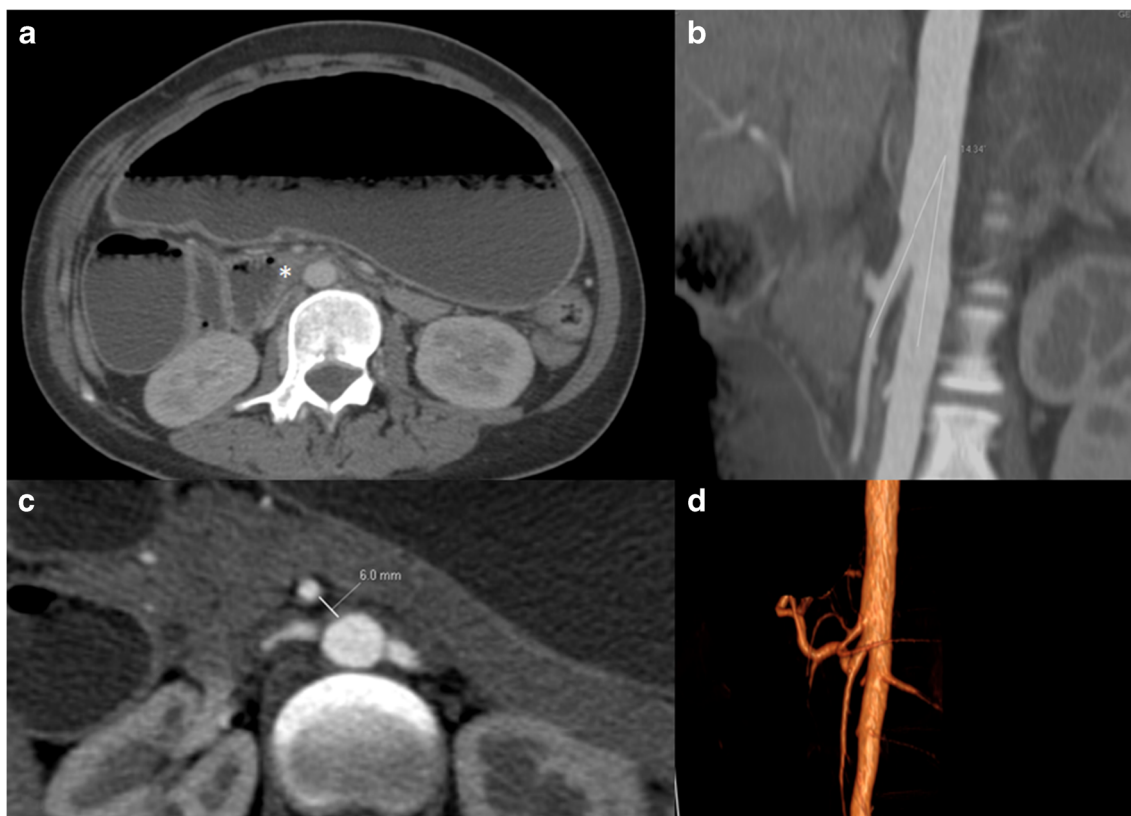


Fig. 1 Abdominal computed tomography scan. **a** Axial section showing a decrease in the lumen of the third portion of the duodenum (*). **b** Sagittal reconstruction demonstrating decreased aortomesenteric angle

(14.3°). **c** Axial section showing decreased aortomesenteric distance (6 mm). **d** Volumetric reconstruction demonstrating decreased aortomesenteric angle

Compliance with ethical standards

Disclosures None.

Ethical approval information No ethical approval was required.

Data sharing statement Additional data will be shared if needed by the corresponding author by e-mail.

Written informed consent Obtained.

Patient and public involvement statement Patients or the public were not involved in the design, or conduct, or reporting, or dissemination plans of our research.

References

1. Zaraket V, Deeb L (2015) Wilkie's syndrome or superior mesenteric artery syndrome: fact or fantasy? *Case Rep Gastroenterol* 9(2):194–199. <https://doi.org/10.1159/000431307>

2. Warncke ES, Gursahaney DL, Mascolo M, Dee E (2019) Superior mesenteric artery syndrome: a radiographic review. *Abdom Radiol (NY)* 44(9):3188–3194. <https://doi.org/10.1007/s00261-019-02066-4>
3. Masuko K (2014) Rheumatoid Cachexia revisited: a metabolic comorbidity in rheumatoid arthritis. *Front Nutr* 1:20. <https://doi.org/10.3389/fnut.2014.00020>
4. Welsch T, Büchler MW, Kienle P (2007) Recalling superior mesenteric artery syndrome. *Dig Surg* 24(3):149–156. <https://doi.org/10.1159/000102097>
5. Kumar R, Jaiswal G, Bhargava A, Kundu J (2016) Superior mesenteric artery syndrome: Diagnosis and management. *Kathmandu Univ Med J* 14(55):288–291

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.