

Idiopathic left omental infarction

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How to cite: Castro BN, Amado A, Torre AP, Azevedo J, Graça S, Maciel J. Idiopathic left omental infarction. *Autops Case Rep* [Internet]. 2020 Jan-Mar;10(1):e2019123. <https://doi.org/10.4322/acr.2019.123>

DEAR EDITOR

The goal of our letter is to draw the medical community's attention to an unusual diagnosis. Omental infarction (OI) is a rare cause of abdominal pain, which has been increasingly diagnosed due to the accuracy of and easier access to imaging techniques.^{1,2} OI represents a diagnostic challenge on account of its variable and non-specific presentation. It is the result of a vascular obstruction leading to tissue ischemia. It can be either an isolated event or secondary to omental torsion.¹ Multiple etiological factors have been associated with OI, but this condition has not been well studied nor well characterized in the literature. OI is more frequent on the right side, which is probably because of anatomical and vascular abnormalities on that omental topography.^{1,3,4}

Herein we report the case of idiopathic left OI and discuss its diagnosis and management with the aim of adding more information to the current literature to improve the recognition and treatment of this condition. It is urgent to understand OI in order to predict those patients that will have a complicated course and those who may be spared from unnecessary surgery.

A 56-year-old man presented to the emergency department with non-specific left-sided abdominal pain over the past week, which worsened progressively without associated symptoms. On examination, he was obese and presented a tender palpation of the

abdomen where a mass was identified in the left hypochondrium and flank. His medical history included epilepsy, hypertension, anxiety, depression, and hearing loss; and he was on ramipril, bromazepam, and valproate semisodium.

Besides a mildly raised C-reactive protein (6.65 mg/dL [Reference range (RR): 0-0.5 mg/dL]), the lab work-up was within the normal range.

The computed tomography (CT) scan revealed an increased density in the greater omentum in the left flank between the abdominal wall and the descendent colon, with a diameter of 6 cm, suggesting an omental infarction (Figure 1).

Increased thickness of the abdominal wall muscles and slight subcutaneous densification were evident, which led the radiologist to raise the hypothesis of an external trauma of the abdominal wall, although this was denied by the patient.

The patient was treated conservatively with analgesia, non-steroidal anti-inflammatory medication, ciprofloxacin, aspirin, and fluid management, coupled with the monitoring of blood inflammatory markers. His symptoms subsided, and he was discharged after 5 days. He attended a follow-up appointment after 1 month, and the CT scan revealed an OI in resolution without inflammatory process of the abdominal wall or subcutaneous tissue.

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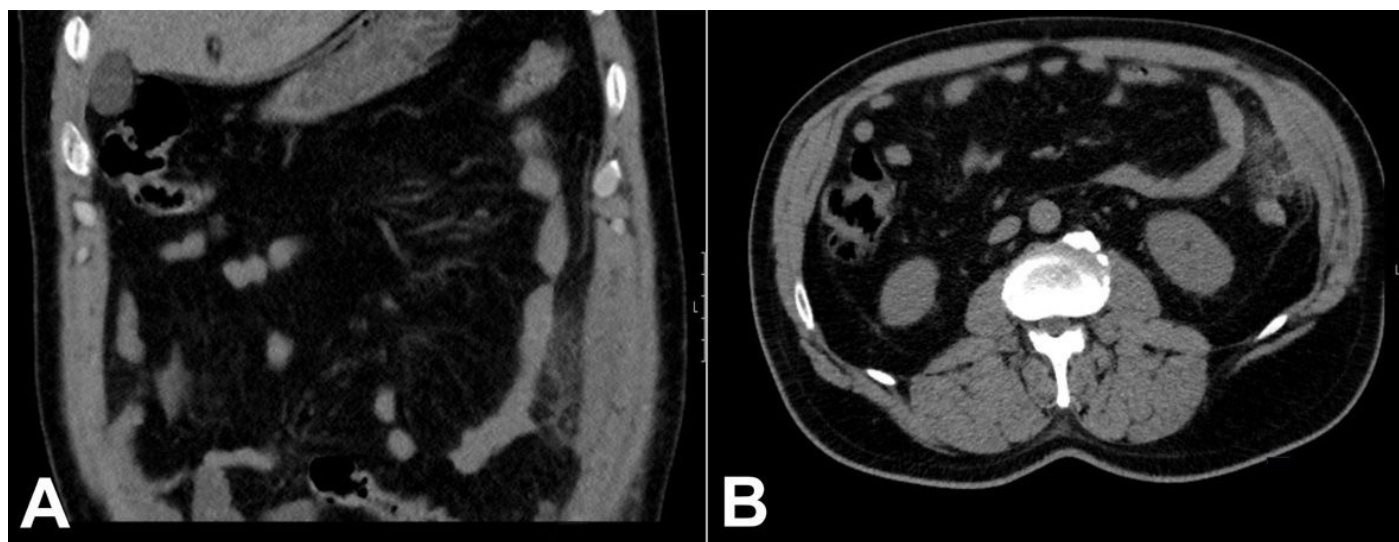


Figure 1. Abdominopelvic CT scan, coronal view (A) and axial view (B), of left omental infarction.

OI is an uncommon cause of abdominal pain, occurring with an incidence equivalent to fewer than 4 cases per 1000 cases of appendicitis. To date, 400 cases have been documented in the literature.^{5,6} Due to this low incidence, and its variable and non-specific presentation, OI often may be initially misdiagnosed. The most likely differential diagnoses include acute appendicitis, acute cholecystitis, and ovarian cyst torsion.⁷

This condition is seen most often in children and men aged 40-50 years.⁶ It can be an isolated event or secondary to omental torsion.¹

As an isolated event it can be idiopathic or related to a secondary cause, namely hypercoagulability, vasculitis, and polycythemia.¹ However, the torsion of the omentum is the main reason for OI.⁴ Secondary torsion is more common than primary torsion; the former is associated with cysts, tumors, adhesions, or hernia.^{3,8}

Primary torsion is idiopathic but can be predisposed by localized trauma, copious meals, intense exercise, increased intra-abdominal pressure after coughing or excessive straining, sudden variations of position, laxative use, hyperperistalsis, and anatomical variations of the omentum, such as an accessory omentum, bifid omentum, irregular accumulations of omental fat in obese patients, and a narrowed omentum pedicle.^{1,4}

Unlike the case described herein, OI is more common on the right side (90%), where (it has been suggested) the omentum has an area of anatomically altered vasculature leading to a lesser tolerance to

venous stasis and a greater tendency to thrombosis. Moreover, some researchers suggested that an embryological origin could explain the more tenuous blood supply to the right lower portion of the greater omentum becoming more prone to infarction.^{3,9}

The higher incidence of torsion on the right side of the omentum is also related to the greater length and mobility of that side, which leaves it more prone to twist along its long axis, leading to vascular compromise.^{4,8}

In obese patients, it is hypothesized that fatty accumulation in the omentum may occlude its own distal arterial branches. Redundant omentum may have the potential to precipitate the torsion by twisting on itself causing vascular kinking. A longer mobile right side greater omentum due to differences in fat distribution is associated with this phenomenon.

This case presents an obese patient whose CT scan findings raised the hypothesis of an external abdominal wall trauma, which was denied by the patient. Also, on CT scan there was no evidence of a pathological intra-abdominal process that could cause OI; therefore, this case was classified as an idiopathic or primary OI.

OI is a differential diagnosis of abdominal pain; the advances in imaging—specifically CT—have proven to be helpful in this diagnostic challenge. The conditions that may mimic OI at CT include acute epiploic appendagitis, mesenteric panniculitis, fat-containing tumor, and acute inflammatory processes in the large bowel (e.g. diverticulitis and appendicitis).¹⁰ In the case reported, CT images were indicative of OI, but given

the clinical history and response to treatment, the diagnosis has become even more likely. Therefore, a CT scan should be considered a method of confirming the diagnosis.

Today there are two main strategies to the management of OI: conservative treatment or surgical excision.⁶ However, currently no consensus has been reached regarding the best therapy, since no comparative study has demonstrated significant differences in the outcome following either strategy.^{1,6} Conservative management of OI includes oral analgesics, an anti-inflammatory, and an antibiotic.⁶

An early surgical intervention is related to the reduced incidence of omental necrosis, abscess, and adhesion formation.⁶ Laparoscopic surgery with omental necrosectomy also seems to decrease the length of hospital stay. Comparatively, conservative management symptoms may require longer hospitalization.^{5,6} Nonetheless, operative intervention has risks and there are few reports of omental abscess after conservative management.⁵ Thus, it is questionable to perform surgery in OI as a first-line treatment, mainly because OI is a self-limited condition, which is probably due to the rich vascularization of the greater omentum. In most reports, surgical intervention is reserved for the cases of uncertain diagnosis, irritation peritoneal signs (e.g. rebound tenderness), uncontrollable pain, or any other worrisome sign of clinical deterioration.

In conclusion, OI constitutes a rare differential diagnosis of abdominal pain, predominantly with right-sided signs. The correct imaging diagnosis—with CT—enables avoidance of unnecessary surgery. Conservative management is sufficient treatment in many cases, since OI is mostly an auto-limited entity.

Unlike the case described herein, OI is more common on the right. It is thought that increased frequency of vascular and anatomical changes in this topography translate into less tolerance to venous stasis and a greater tendency to thrombosis. On the other hand, greater size, redundancy, and mobility of the epiploon on the right can promote the phenomena of torsion that leads to infarction.

To date, many questions remain; therefore, more studies comparing conservative treatment versus surgery are needed.

Keywords

Omentum; Infarction; Abdominal Pain

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Author contributions: Castro BN wrote the article and Amado A, Torre AP, Azevedo J, Graça S and Maciel J reviewed and performed the necessary amendments to its improvement. All authors proofread the final version and approved it for publication.

Consent was obtained from the patient for the case publication and the manuscript is in accordance with the ethical standards of the institution and with the Helsinki Declaration.

Conflict of interest: None

Financial support: None

Submitted on: July 14th, 2019

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