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Case report

Ileo-colic lipomatosis complicated by cecum perforation and mimicking acute appendicitis: a case report

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Abstract. Lipomatosis of the colon is rare in clinical practice although the majority of cases are found incidentally. In rare circumstances, patients may presents with acute complications such as bowel obstruction, intussusception, or perforation. Here we report a case of colonic lipomatosis that present as localized peritonitis mimicking acute appendicitis in a young COVID patient. Sixth case in the literature of intestinal perforation peritonitis in intestinal lipomatosis. (www.actabiomedica.it)

Key words: Colon lipomatosis, cecum perforation, covid, peritonitis.

Introduction

Intestinal lipomatosis is an exceptional condition with an incidence at autopsy ranging from 0.04% to 4.5% (1). Although the majority of the cases are incidental findings and rare in clinical practice, may present with non-specific symptoms such as nausea and abdominal pain due to constipation or bowel obstruction, and they occasionally precipitate a surgical emergency such as bleeding of the digestive tract, intussusception, or perforation (2-6).

The case we present here shows the occurrence of cecum perforation, secondary to ileocolic lipomatosis, mimicking acute appendicitis in a young COVID patient. This is the sixth case of colonic lipomatosis in literature and presentation with perforation.

Case Presentation

An 18-years-old Caucasian man presented to the emergency department with abdominal pain localized in the right iliac fossa from the day before, no fever, no nausea, or vomiting. The patient also complained of alternating alvus with episodes of constipation in the week before admission.

At the preliminary examination, he was alert and oriented, tachycardic at 115 beats per minute, normotensive, and had a temperature of 37.6°C. He was eupnoeic with an oxygen saturation of 100% on air.

Examination of the abdomen revealed isolated rebound tenderness in the right lower quadrant.

The routine admission blood test revealed hemoglobin 15.1 g/dl (n.v. 12-17.5), white blood cells $15.5x10^3$/µl (n.v. 4-10) with neutrophils 84.1% (n.v. 40-75), and C reactive protein (PCR) 1.86 mg/dl (n.v. 0-0.5). The rest of his routine biochemical investigation was unremarkable. Reverse transcriptase-polymerase chain reaction (RT-PCR) was positive for SARSCoV2 infection.

Chest and abdominal (Figure. 1-3) CT scan revealed no parenchymal referable to interstitial pneumonia were observed (lung score 0/25), while in the caecal region there was an area of inhomogeneously hyperdense tissue with multiple small phlogosis gas bubbles, approximately 34x63 mm in diameter,

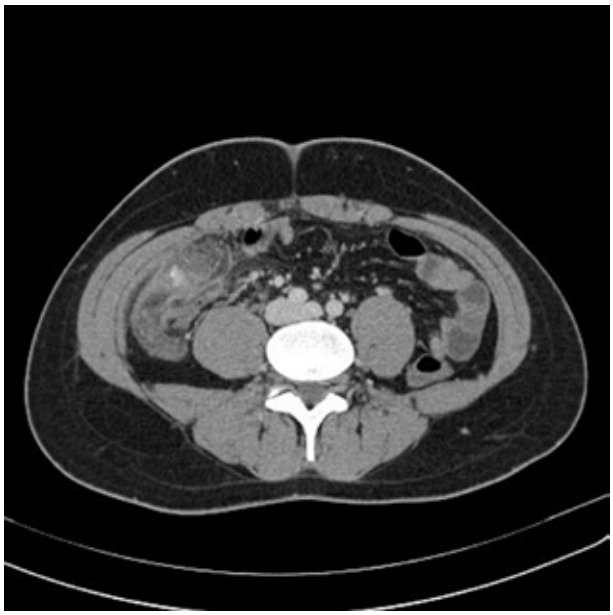

Figure 1. CT abdomen (axial).

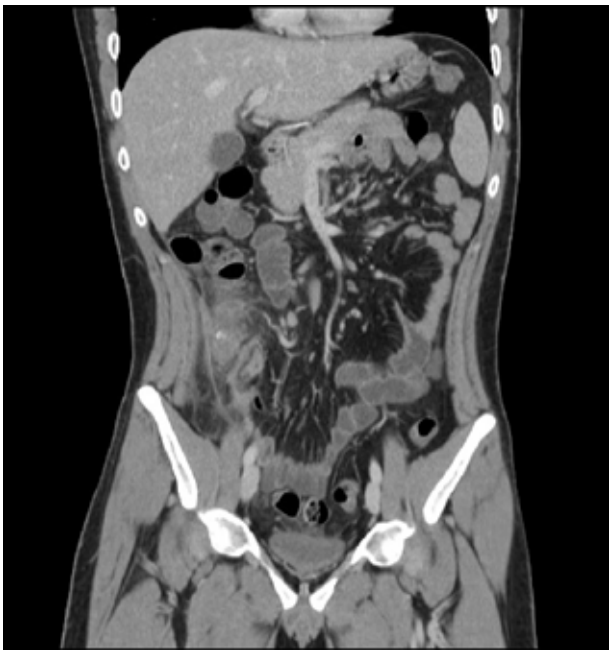

Figure 2. CT abdomen (coronal).

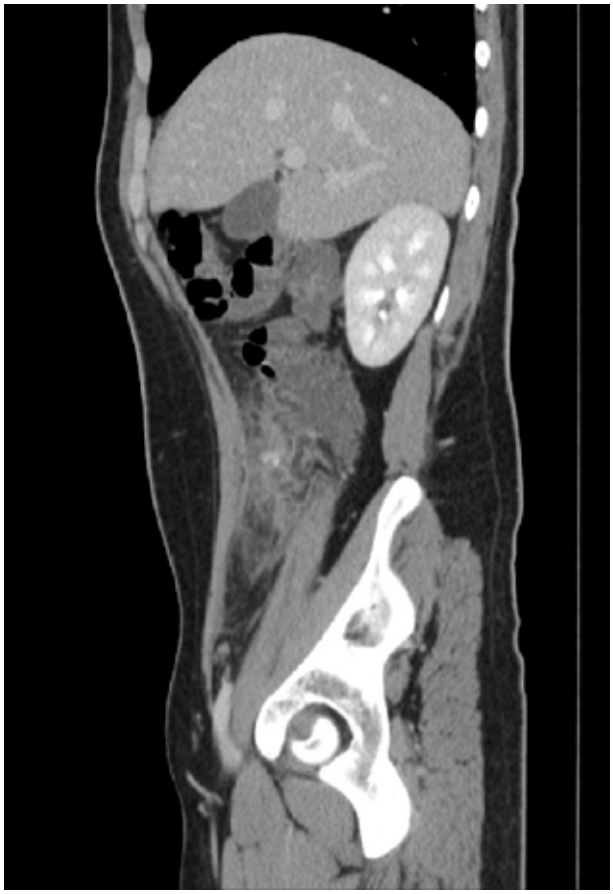

Figure 3. CT abdomen (sagital).

involving the surrounding fat. Ileal hydro-aerial levels coexist and double contour thickening of the last ileal ansa and ileocecal valve is observed with modest signs of pelvic effusion. The radiological picture was due to inflammation of nonunivocal origin: typhlitis? terminal ileitis? intussusception? acute appendicitis?

The patient was hospitalized to a covid-19 surgical unit when he needed antibiotic treatment with a full dose of piperacillin-tazobactam (13.5g/die) but 36 hours after admission due to the worsening of clinical symptoms and increase in phlogosis indices (PCR 203.6 mg/dl) it was decided to have surgery.

In the main surgical suspicion of acute appendicitis a McBurney incision was made, but the finding of perforation at the level of the cecum with a diameter of about 15mm led the surgeons to perform a median cut through which a right hemicolectomy was performed.

Choice in the surgical approach was conditioned by COVID infection, in fact even though recent research has shown that laparoscopy may lead to aerosolization of blood-borne viruses, currently, there is no evidence to indicate that this effect is seen with COVID-19, nor that it would be limited to minimally invasive surgical procedures. The patient underwent

surgery at the beginning of the pandemic, at a time when there was no evidence of this (7-8).

The postoperative course was regular and the patient was discharged on day 10 after therapy.

At macroscopy, the pathology report demonstrated in correspondence of the cecum and the emergence of the cecal appendage a perforation surrounded by serious with a brownish appearance of the diameter of 10x6 mm, and in the same area an irregularity of the thickness of the colonic mucosa. At microscopy (Fig. 4-6), at the level of the caecal segment, the muscular tunic showed a reduction in thickness zonally and correspondence with the cecum the serous tunic and zonally the muscular tunic show leukocyte exudation consisting mainly of granulocytes with abscess aspects, hemorrhages, edema, and aspect of lip necrosis.

The definitive morphological findings are consistent with intestinal lipomatosis (ileocolic) complicated by intestinal perforation with consensual serositis.

The case was discussed by the multidisciplinary hospital team to better manage the follow-up diagnostic tests and an indication was given to perform an entero-MRI examination to document the spread of the disease throughout the gastrointestinal tract, an examination that the pz did not perform due to claustrophobia.

Discussion

Pathological examination showed a diagnosis of lipomatosis.

The etiology of lipomatosis is still unclear. It has been associated with an embryonic displacement of adipose tissue or with chronic irritation of the bowel. Lipomatous lesions of the intestine may be diffusely or discretely distributed. In a descending order, lipomas are more frequent in the caecum, ascending, sigmoid, transverse, rectum, and descending colon (9). In 90% of cases, these lesions are localized in the intestinal submucosa, but occasionally they extend into the muscularis propria, while up to 10% are sub-serosal (10-11).

The mechanism determining the perforation of the presented case could be due to the fact that the

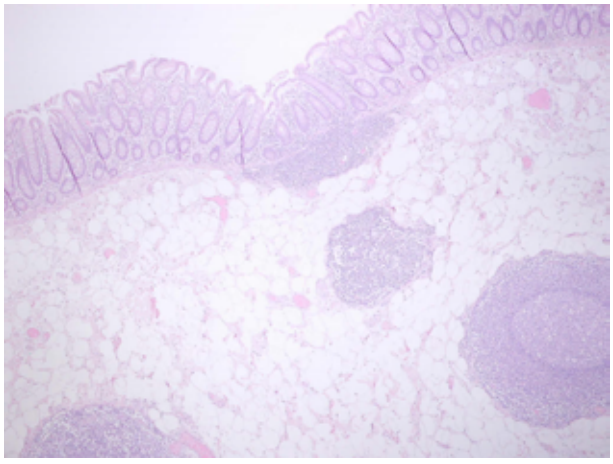

Figure 4. 4x EE Colonic lipomatosis.

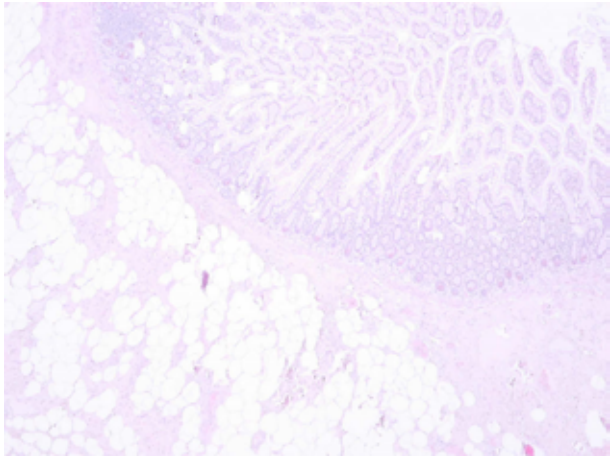

Figure 5. 4x EE Ileal lipomatosis.

Figure 6. 2x EE Appendicular lipomatosis.

adipose tissue is relatively avascular and therefore the mucosa overlying the lipomatous lesions of the colon is subject to ischemia and necrosis ultimately leading to perforation. Evidence of ischemia and necrosis around the perforation was reported by the pathologist in also the index case as in the only case so far described in the literature by Puspinder *et al* (12).

This hypothesis is supported by the endoscopic descriptions reported by Danoff *et al*. indeed the mucosa covering the tumor may retain its normal yellowish appearance but occasionally may become atrophic, congested, ulcerated, or even necrotic, the subserosal type usually originates from the appendices (13).

In some reports, lipomatosis was associated with more familiar syndromes including: Proteus syndrome, Bannayan-Riley-Ruvalcaba syndrome, Madelung disease, Weber-Christian disease, and neurofibromatosis type I (NF1) but no such association were found in our case (14). Hypercholesterolemia has also been reported often, but this was not found in our patient (15).

Conclusion

Colonic Lipomatosis, a rare and benign condition should be kept as a differential diagnosis in unusual cases of colonic perforations in particular in young patients.

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