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Appendicular bleeding: An excepcional cause of lower hemorrhage

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ABSTRACT
Chronic complications of acute appendicitis managed in a conservative manner are not frequent. We present a case of acute lower gastrointestinal hemorrhage in a young patient with a previous acute appendicitis without surgical intervention. The colonoscopy detected an appendicular bleeding which was surgically treated. The anatomopathological diagnosis was granulomatous appendicitis. The clinical evolution of the patient was favorable without bleeding recurrence. Appendicular hemorrhage can be an unusual complication —however potentially severe— of acute appendicitis not treated surgically.

Key words: Lower gastrointestinal hemorrhage. Granulomatous appendicitis.

INTRODUCTION
Severe lower gastrointestinal bleeding (LGIB) accounts for 15% of all cases of acute LGIB (1). The most frequent causes of rectorrhagia without hemodynamic repercussion are hemorrhoidal pathology and neoplasias. Acute lower gastrointestinal bleeding is usually related to bleeding of diverticular origin or with vascular ectasias. Patients aged < 30 that debut with an important LGIB episode usually present lesions due to vascular malformations (Dieulafoy’s lesion) or intestinal malformation (Meckel’s diverticulum), and their etiological diagnosis is rather difficult sometimes.

Surgical management of appendicitis has been a subject of debate. Many surgeons are in favor of an immediate appendectomy. However, the potential morbidity, or even mortality, as a result of this technique lead other group of experts to defend a more conservative management (2,3).

Long term complications of this therapeutical non-aggressive attitude are not well known. Hereunder we describe a case of acute appendicitis that was not treated surgically and its long term unusual and potentially severe evolution (4).

CASE REPORT

We present the case of a Caucasian male aged 22 that comes to Emergency Service in our hospital with rectal bleeding. The only relevant personal background relates to appendicitis a year before, managed in a conservative manner with antibiotics. The patient shows a 3-4 day evolution consisting of bright red blood emanating from the rectum, not accompanied by defecation or other symptoms.

Several weeks before admission in the Emergency Service he had undergone an analytic control including a complete blood count (CBC) with normal levels of hemoglobin (13.3 g/dl).

Upon admission in Emergency the patient presented with hemodynamic stability, blood pressure 138/61 mmHg and a heart rate of 84 bpm. The physical exploration highlighted a pallor of the skin and the mucous membranes, perspiration and mucosal dryness, whereas the rest of the exploration was anodyne. The rectal examination showed plain rectal bleeding, but rectal masses could not be detected. The inspection around the annus showed no fissures or hemorrhoids.
During his stay in Emergency two peripheral lines were secured, blood tests were crossmatched and we started with the infusion of 500 cc of physiological saline at 0.9%. An urgent blood test highlighted a normocytic anemia (hemoglobin 7.3 g/dL and mean corpuscular volume MCV of 87.40 fl). The rest of the blood count, biochemistry and coagulation maintained values within the range of normality. Considering the hemodynamic stability of the patient we decided to schedule an elective colonoscopy prior colonic preparation with polyethylene glycol and transfusion of 4 erythrocyte concentrates. The colonoscopy was carried out 24 hours after and it reached the terminal ileum. Blood remnants were only detected in the transverse and ascending colon. Ileoscopy was normal, showing bile remains. In the absence of conclusive findings, we carried out an oral panendoscopy, exploring the esophagus, the stomach and the duodenum until the second duodenal portion, but did not observe traces of blood or potentially bleeding injuries. We decided to complete the study by means of a capsule endoscopy. Nevertheless, 12 hours after the endoscopic examinations, the patient presented with a new episode of rectorrhagia with hemodynamic repercussion and new anemia to a 7.6 g/dl hemoglobin (in spite of the transfusion of six erythrocyte concentrates, what led us to carry out an urgent CT angiography. Thereby we found hyperdensity at the cecum level, findings that suggested active endoluminal bleeding. (Figs. 1 and 2). After the hemodynamic stabilization of the patient we repeated the colonoscopy. The colonoscope was introduced until the terminal ileon, that showed a normal mucosa without blood remnants. We examine the cecum where abundant traces of blood remnants and blood clots are detected, but no potentially bleeding mucosal lesions. At the base of the appendiceal orifice we observe an irregular structure with active bleeding at the base (Fig. 3), which suggests that it might correspond to a blood vessel.

With the clinical suspicion that it may be a severe acute LGIB of appendicular origin we decided to carry out an urgent surgical intervention, performing an appendectomy with associated removal of the cecum. The postoperative course was uneventful and the patient is discharged from hospital 72 hours after surgery. The clinical follow-up three and six months after discharge shows that the patient presents no further symptoms. He has not suffered new episodes of macroscopic bleeding and the
recovery from anemia is confirmed as well. Upon examination of the pieces removed the only significant thing was a cecal appendix with diffuse enlargement. Under the microscope we could observe non-necrotizing epithelioid granulomas, scattered along the wall, ulcers, fissures and cryptal abscesses in the mucosa. The diagnosis thereof was chronic granulomatous appendicitis (Figs. 4 and 5).

**DISCUSSION**

Granulomatous appendicitis is a rare clinicopathological finding histologically characterized by the presence of appendicular granulomas. Granulomas are chronic inflammatory lesions consisting of clusters of epithelioid histiocytes, occasionally accompanied by multinucleated giant cells and lymphocytes as well as plasmatic cells (5). This entity accounts for less that 2% of all appendicitis. It was thought at first that it was a manifestation of Crohn’s disease. However, only 5-10% of all granulomatous appendicitis develops this disease. Other etiologies are varied, highlighting the sarcoidosis, the reaction of foreign-body granuloma and intestinal infectious diseases such as tuberculosis, parasitic disease and more frequently the *Yersinia* species. Recently subacute appendicitis has been described as the most common cause of this entity. This condition produces a granulomatous reaction in relation to a secondary inflammatory response to acute appendicitis managed conservatively, with a postponed appendectomy (4). Unlike our case, the common clinical presentation is the abdominal pain (6), whereas rectal bleeding is a truly rare event. We are therefore faced with an exceptional case. The diagnosis is usually made by imaging, while the definitive diagnosis based on histology. Since in our case the presentation was rectal bleeding, the differential diagnosis should be made with other causes of severe gastrointestinal bleeding in young patients. The definitive management of granulomatous appendicitis is based on the appendectomy (7) and as a whole the cases reviewed in the literature have a good long term prognosis (8). To date, less than 30 cases of appendiceal bleeding have been reported. Those cases of bleeding of appendicular origin included inflammatory bowel disease, tuberculosis, cases of intussusception or angiodysplasias among other etiologies. It is really difficult to make
a diagnosis with endoscopic visualization. And in most cases it is still necessary to conduct a removal of the cecum (or sometimes an associated hemicolecotomy) to control the bleeding (9).

To conclude, granulomatous appendicitis in the context of a subacute appendicitis may appear clinically as severe lower gastrointestinal bleeding due to appendicular bleeding with important clinical and analytical repercussion. The combination of dynamic radiological tests and endoscopy during the acute bleeding process increases the diagnostic yield, but in most cases it requires a surgical management for the final resolution of the case (10).

REFERENCES


Fig. 1. Axial plane-CT angiography. Hyperdensity at the cecum level that suggested active endoluminal bleeding (blue narrow).
Fig. 2. Sagittal plane-CT angiography. Hyperdensity at the cecum level that suggested active endoluminal bleeding (blue narrow).

Fig. 3. At the base of the appendicular orifice we observe an irregular structure with active bleeding which suggests a blood vessel.

Fig. 4. Coronal cross-section of cecal appendix. Transmural lymphoid aggregates. (HEX20).
Fig. 5. Scattered along the wall, ulcers, fissures and cryptal abscesses in the mucosa. Non-necrotizing epithelioid granulomas (HEX200).