Letters to the Editor

Acute appendicitis by *Enterobius vermicularis*, an unusual etiology in children

Key words: *Enterobius vermicularis*. Acute appendicitis. Children.

Dear Editor,

The *Enterobius vermicularis* (EV) is one of the most common gastrointestinal helminth infections in children. Acute appendicitis (AA) is the most prevalent surgical emergency in pediatrics. The role of worms in the development of histologically confirmed AA is controversial, although the obstruction of the appendicular lumen could act as an exceptional trigger.

Case report

A 7-year-old boy went to emergency department with severe abdominal pain of 20 hours, located in the right iliac fossa. Fever. Alimentary vomit. Normal bowel movements.

On examination, the child had general status affection. Abdominal palpation aimed to voluntary defense in FID. Blumberg and psoas signs were positive.

Laboratory tests showed leukocytosis with neutrophilia and eosinophilia. Ultrasound visualized retrocaecal appendix of 6 mm.

Urgent laparotomy appendectomy was performed, appreciating macroscopic inflammation of the appendix, without free liquid. Normal ileum.

Histopathological examination confirmed the diagnosis of appendicitis; cells of acute inflammation were invading the wall (Fig. 1A) and pinworms occluding the lumen (Fig. 1B).

Given these findings, we contacted the family to start treatment with mebendazole.

Discussion

The AA is the most common surgical cause of abdominal pain in children. It may be triggered by obstruction, decreased blood flow, mucosal ischemic injury or bacterial infection. Parasitic infections represent a minimum percentage of causes (2,3). The fecaliths are the most common trigger, but some parasites may be involved in its formation (4).

The presence of EV in the context of an AA ranges from 0.2 to 3.8% (5). Helminthic invasion originates appendicular cramps caused by intermittent luminal obstruction, simulating a picture of AA (6). Courses of perianal itching, bruxism and insomnia may also be present. The histopathological study shows infiltration of the appendicular wall by neutrophils and eosinophils, with granulomas and necrosis. In exceptional cases, obstruction of the

Fig. 1. A. Histopathological study: Hematoxylin-eosin staining showing the presence of acute inflammatory infiltrate in the appendix wall. No evidence of granulomas or chronic inflammation. B. *Enterobius vermicularis* occluding the appendix lumen and causing acute inflammation.

appendicular lumen by EV causes appendicitis confirmed histologically with acute inflammation (7).

The diagnosis of appendicitis is clinical. Laboratory tests, radiography and abdominal ultrasound are additional tests, but not diagnostic. In the context of a clinical appendicitis, the presence of previous appendicular colic and eosinophilia should make us to consider the existence of concomitant parasitic infection. Moreover, In the presence of perianal pruritus, bruxism and insomnia we must suspect the appendicular colonization by EV (8,9).

Face with a clinical diagnosis of AA, emergency appendectomy is indicated. Laparoscopic appendectomy is associated with an increased risk of intraperitoneal settlement in the case of gastrointestinal helminthic infection (9). Laparotomy appendectomy is considered a safer technique.

The systematic review of the histopathological examination of the appendices has demonstrated the incidental presence of parasites, being EV the most prevalent in children (10). Their discovery allows starting the treatment of the patient and family with mebendazole to eradicate the parasitic infection.

In conclusion, the systematic review and histological study of the appendages is essential. The incidental finding of intestinal parasitism by EV permits to start anthelmintic treatment. Performing an exhaustive medical history will help to identify clinical and laboratory data indicative of parasitic infection.

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