

vermicular enterobius: incidental intraoperative finding during laparoscopic appendectomy

Bensardi Fatimazahra, Bouali Ichrak, Kamal Khadija, Majd Abdessamad, Bouali Mounir, El Bakouri Abdelilah, El Hattabi Khalid

Department of general surgery, hospital center Ibn Rochd, Casablanca, Morocco
University of Hassan II, Casablanca, Morocco

*Correspondence: Bouali Ichrak

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Abstract

Acute appendicitis is the most common intra-abdominal pathology requiring emergency surgery. The etiology of acute appendicitis includes both infectious and non-infectious causes. Although parasitic diseases are rare in developed countries, they are more common in developing countries. Pinworm is a highly contagious infection, considered to be the most common helminthic infection. The association of this parasitic infestation with the pathogenesis of acute appendicitis has been studied for many years and is still unclear. We report the case of a patient with symptoms of acute appendicitis in whom intramural parasites were discovered during laparoscopic surgery.

key words: Appendicitis, vermicular enterobius, treatment

Introduction

pendicitis varies from 0.2% to 41.8% worldwide. *E. vermicularis* (pinworm) is a small, obligate white nematode that affects 1,000 million people worldwide and is considered the most common hel-

minthic infection [1]. *Enterobius vermicularis* is an important and often unexpected finding in appendectomy specimens. most often in pediatric cases [2, 3]. However, the most widely reported phenomenon is appendicular colic due to the presence of pinworm in the appendicular lumen [4, 5]. The association of this parasitic infestation with acute ap-

Case report

An 18-year-old woman was admitted to the surgical emergency department with right iliac fossa pain, which had been present for 3 days and was accompanied by a feverish sensation. On general clinical examination, the patient was hemodynamically and respiratorily stable. Abdominal examination revealed tenderness in the right iliac fossa, and

rectal examination was unremarkable. The CBC showed a leukocytosis of 15,000 cells/mm³. The operation consisted of retrograde appendectomy under laparoscopy, with exploration of an inflamed latero-caecal appendix with a healthy base and the presence of white worms in the appendicular section trench (figure 1), suggestive a priori of oxyuriasis of the appendix. The postoperative course was straightforward, and the patient was discharged on postoperative day 1 with oral antihelminthic treatment.

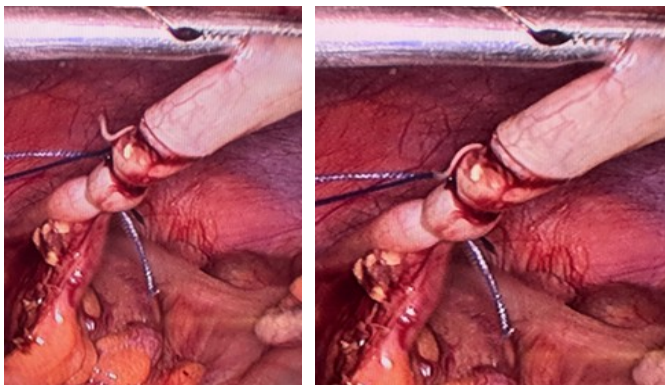


figure1: image showing grubs on the appendicular section trench

Discussion

Enterobius vermicularis is known by many names (breach worm, pin worm, oxyuriasis, thread worm) and the first description of human infestation dates back almost 10,000 years. However, it was Fabrius, in 1634, who first described the worm's involvement in appendicitis. Once *E. vermicularis* has reached maturity, it remains and reproduces in the terminal ileum, cecum, appendix and ascending colon. The male worm's life cycle ends after fertilization and dies, while the female must migrate to the anal canal to lay her eggs [11]. The life span of *Enterobius vermicularis* (pinworm) is between 2 and 5 weeks. Although the relationship between *E. vermicularis* and the pathogenesis of appendicitis has been studied for many years, the parasite's influence on the induction of inflammation remains

unclear. Although *E. vermicularis* (pinworm) may play a role in appendicular discomfort or chronic inflammation of the appendix due to obstruction, the majority of cases do not present with acute inflammation [11]. Nevertheless, there are cases of totally asymptomatic patients [12]. The reported incidence of appendicitis caused by *E. vermicularis* varies widely from 0.2 to 41.8%, and young girls are most often affected [13, 14]. It is unclear why women predominate in cases of appendicitis caused by *E. vermicularis*. The predominance of women in cases of appendicitis caused by *E. vermicularis* ranges from 74% to 76% [15,16]. However, it has also been noted to present as mesenteric abscess, urinary tract infection, salpingitis and appendicitis [16,17]. Before sanitary conditions improved, Still reported in 1899 that 19% of acute appendicitis cases were linked to the presence of *E. vermicularis*. The pathophysiology underlying the association between *E. vermicularis* and clinically suspected appendicitis is similar to that associated with fecolith or luminal lymphoid hyperplasia of the appendix [18]. By obstructing the appendicular canal, it causes pain in the right iliac fossa (RIF) (appendicular colic), but it is unusual for it to lead to appendicular inflammation [18, 19]. It can therefore lead to a clinical scenario mimicking acute appendicitis, not necessarily causing it. This is important when deciding on the approach to patient management, as this is an infection that can be treated with standard oral antihelminthic therapy (recommendation for mebendazole) [20]. When diagnosed intraoperatively, *E. vermicularis* should be treated according to several principles. If pinworms are detected, they should be controlled by thermal ablation or endoscopic aspiration [20]. a specimen bag should be placed for appendix removal [21]. After removal of the appendix, the port sites, abdominal cavity and pelvis should be

cleaned, prior to resealing [21]. These measures must be taken to protect against potential intraperitoneal contamination, which can be complicated by omentitis, pelvic inflammatory disease and peritoneal granulomas [21]. Alongside surgical treatment, patients should be treated with one dose of mebendazole, pyrantel pamoate or albendazole at the time of diagnosis, and another dose two weeks after treatment [22]. Pyrantel pamoate is the drug of choice for the treatment of *Enterobius vermicularis*. It is an agent that blocks neuromuscular depolarization, causing spasmodic paralysis of the worm through continuous nicotinic activation, eventually detaching the worm from its host and expelling it by defecation [23]. Household contacts need not be treated for *E. vermicularis*, unless more than one member of the household is affected or the infection recurs [22].

Conclusion

Enterobius Vermicularis is a colonic parasite. Infection is often asymptomatic and rarely discovered by chance. The treatment of choice is surgical resection of the appendix and pharmacological eradication with antihelminthic drugs. Therefore, in the event of digestive disorders suggestive of appendicitis, a complete parasite examination with repeated scotch tests is recommended. If these tests are positive, the number of unnecessary appendectomies can be reduced. In this case, a simple antiparasitic treatment is indicated.

Conflicts of interest: None to declare.

Author contributions: All authors have contributed to the conduct of this work. All authors also declare that they have read and approved the final version of the manuscript.

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