



## Rare gastrointestinal presentation of enterobius vermicularis: Anal abscess

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### ABSTRACT

*Enterobius vermicularis* (*E. vermicularis*) is a human roundworm that does not have an intermediate host. It is a common parasite worldwide, especially in temperate regions and in developing countries. It lives in the human large intestine, particularly in the cecum lumen, appendix, rectum area, and rarely in the last parts of the small intestine and causes enterobiasis (oxyuriasis). Likewise, it is usually transmitted by close contact between infected and non-infected individuals and swallowing or inhalation of eggs. Primary school children are the most likely to be affected. It is generally asymptomatic, the most common symptom is itching in the perianal area. Sometimes it can be complicated by extraintestinal involvement. In countries with high prevalence, such as our country, oxyuriasis should be kept in mind as a rare cause of gastrointestinal involvement including anal abscess. The aim of the case report was to present an extremely rare case of anal abscess caused by *E. vermicularis* as well as to review the literature.

**Keywords:** Anal abscess, enterobius vermicularis, oxyuriasis.

*Enterobius vermicularis* (*E. vermicularis*) is a human roundworm without a secondary host. It is a common parasite in the world, particularly in temperate climates and developing countries. It can live in the human colon, particularly in the lumen of the cecum, in the appendix, rectum and rarely in the last sections of the small intestine, and it can cause enterobiasis (oxyuriasis). Furthermore, it is usually transmitted through close contact between individuals and ingestion or inhalation of eggs. Likewise, it is detected most commonly in primary school children. The disease is usually asymptomatic, and the most common symptom is itching in the perianal area.<sup>[1,2]</sup> Extraintestinal involvement is present at times, complicating the disease.<sup>[3]</sup>

This case report aimed to present a very rare case of anal abscess caused by oxyuriasis and review the literature.

### CASE REPORT

A 16-year-old female patient without a history of chronic disease presented to our outpatient clinic with complaints of swelling and pain in the anus and chills, which had appeared four days ago. The patient had no history of chronic drug use or chronic disease. The patient's fever was 37.6°C with a fair-to-good condition. There were no findings in the systemic examination except rectal examination. During the rectal examination, performed in the knee-elbow position, a fluctuant and painful swelling of 3×3 cm was palpated in the perianal area at the 12 o'clock position. Laboratory results showed a leukocyte count of 6,900/mm<sup>3</sup>, 11.4% monocytes and 5.6% eosinophils. No pathology was detected in other laboratory tests. The patient was hospitalized for further examination and treatment. A 1 cm incision was made to the fluctuant area of the patient who

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was operated on under spinal anesthesia. Actively motile pinworms were observed in the drained material. The cytopathological examination of the material showed oxyuriasis. Mebendazole treatment was started for the patient and their family without waiting for the pathology report. No relapse or other problems were encountered at the end of 10 months in the regular follow-up of the patient. A written informed consent was obtained from the patient.

## DISCUSSION

Although anal or perianal abscess is common, particularly in childhood, information on its incidence is incomplete. Hill<sup>[4]</sup> reported that 0.5% of anal fistula patients with accompanying abscess were children. Mazier<sup>[5]</sup> reported this rate at 4.5% in a case series of 1,000 patients. The etiology and treatment of anorectal complaints in pediatric patients can differ significantly from adults. There may be variability among infants, children and adolescents according to their age, case management and the etiologic agent. For example, sedation, and sometimes even general anesthesia, may be required to conduct a comprehensive examination of infants and children. There is limited literature or evidence on the treatment and management of these patients.<sup>[6]</sup> In the presented case, the initial intervention was in the outpatient clinic, and when an abscess was suspected, its drainage was performed under general anesthesia.

*Enterobius vermicularis*, also known as Oxyuris or pinworm, is the cause of a widespread parasitic infection and an important public health problem. In Turkey, oxyuriasis is more common in communities with low socioeconomic status and high consumption of raw meat, particularly in crowded families. Although there are some differences according to regions, studies conducted in Turkey report that oxyuriasis is the most common nematode infection.<sup>[7,8]</sup> It has been reported that this disease is more common in rural areas of Turkey because of factors such as climate and income level.<sup>[9]</sup> Önlen Güneri et al.<sup>[8]</sup> detected *E. vermicularis* colonies in the stool samples of 45 individuals (26.8%) out of a total of 167 students in Hatay. Göz et al.<sup>[10]</sup> investigated the prevalence of *E. vermicularis* in children of

different socioeconomic statuses aged 5 to 10 years living in two different provinces (Istanbul and Diyarbakır) in different regions of Turkey, and they found the prevalence as 21.7% in Diyarbakır and 7.5% in Istanbul. They determined that 81.2% of the infected children were from families with a low socioeconomic status living in the slums of Kulp district in Diyarbakır. In addition, the prevalence of parasites was higher in the 6 to 7 and 7 to 8 age groups. Moreover, they argued that with the increase in compliance with general cleaning and hygiene rules in late childhood, the parasite prevalence decreases. Several studies support the fact that sex is not a risk factor for *E. vermicularis* and that it can affect both sexes.<sup>[11-13]</sup> The presented case was of a 16-year-old female with oxyuriasis despite their good hygiene, high socioeconomic status and negative family history. The fact that the patient lives in a region with a high prevalence of oxyuriasis was considered a risk factor.

Pinworms can cause complications in the gastrointestinal tract. It may even cause complications at times by extraintestinal involvement.<sup>[3]</sup> Uysal and Dokur<sup>[14]</sup> reported *E. vermicularis* to be the most common etiologic agent among the parasitic agents causing acute appendicitis. They also reported that *E. vermicularis* mimics Crohn's disease, that it causes intestinal stenosis, intestinal obstruction, subcutaneous abscess, hepatic granuloma, inflammatory polyp, ileal and colonic ulcers and that there are cases where it is detected in conjunction with colon tumor. There was no case similar to the one we presented. Sit et al.<sup>[15]</sup> evaluated the cases of 736 patients who had undergone lower GI endoscopy in Bolu and detected pinworms in 3.3% of the patients.

The most common symptoms in oxyuriasis are reported to be abdominal pain, weight loss and diarrhea. The pathophysiology of oxyuriasis induced ileocolitis is not well understood. The issue of whether this condition directly causes mucosal ulceration or overlaps with the pre-existing ulcer is controversial.<sup>[15]</sup> In our study, the patient presented to us with abscess-related symptoms such as swelling and pain in the anus and chills, and this was attributed to the complication of the case by the anal abscess.

In conclusion, *E. vermicularis* should be considered as a rare cause of gastrointestinal

conditions, including anal abscess, in developing countries such as Turkey.

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