



Enterobius vermicularis infection in congenital anorectal malformation

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Abstract

Introduction: *Enterobius vermicularis* (pinworm) infections are prevalent worldwide, particularly among children, and are sometimes associated with surgical conditions such as appendicitis. We present a case of pinworm infection in a child with a congenital anorectal malformation, discussing its association with other surgical conditions.

Case report: A 12-year-old boy was admitted with abdominal pain and chronic malnutrition. His history included crampy abdominal pain, peri-anal itching, and constipation for the past 10 years. Diagnosed with an anorectal malformation at birth, he had undergone a colostomy followed by anorectoplasty for a rectourethral fistula. Currently, he presented with an anal stricture, which was treated with stricturoplasty. During surgery, small worms were observed in the anal corrugations, identified as *E. vermicularis*. He was treated with albendazole and was free of pinworm infection at a six-week follow-up. His abdominal pain and constipation also resolved.

Conclusion: The overlapping symptoms of *E. vermicularis* infection with other surgical conditions may lead to a delayed diagnosis, adversely affecting growth and development of the patients. A high index of clinical suspicion of parasitic infections in presence of associated symptoms may lead to an early diagnosis and better patient outcomes.

Introduction

Enterobius vermicularis, commonly known as pinworm, is sometimes associated with surgical conditions such as acute appendicitis, although it is rare in other surgical contexts. Here, we report a case of *E. vermicularis* infection in a patient with congenital anorectal malformation (ARM).

Case Report

A 12-year-old boy was admitted with acute, crampy abdominal pain. He had a prior history of similar pain and peri-anal itching six months earlier, which had been temporarily relieved with over-the-counter medications. Diagnosed with ARM at birth, he underwent a colostomy on his second day of life, followed by an anorectoplasty for rectourethral fistula at seven months of age. At one year old, the colostomy was closed, and anal dilation therapy was continued. He presented to our centre eleven years later with ongoing constipation after being lost to follow-up. Physical examination showed pallor, with no icterus, cyanosis, clubbing, or lymphadenopathy. His vital signs were stable, with a pulse rate of 80 beats per minute,

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respiratory rate of 16 per minute, and blood pressure of 106/68 mm Hg, and he was afebrile. His anthropometric measurements (weight 27 kg, <15th percentile; height 135 cm, <3rd percentile) indicated chronic malnutrition. Haemoglobin was within the lower normal range at 12 g/dL. On per rectal examination, a stricture was identified one cm above the anal verge. During stricturoplasty, tiny whitish worms were observed in the anal folds, identified as *Enterobius vermicularis* based on morphology and the presence of eggs measuring 50–60 µm in length and 20–30 µm in width, planoconvex in shape, non-bile stained, and containing coiled larvae (figure 1). The child was treated with two doses of albendazole (400 mg initially and after two weeks), with a repeat dose advised in six months. At six-week follow-up, he was free from pinworm infection.

Figure 1: Eggs of *Enterobius vermicularis*—planoconvex in shape, non-bile stained and containing coiled larvae.



Conclusion

E. vermicularis is most associated with acute appendicitis, with a reported prevalence ranging from 0.2–41.8% globally. Other organ systems affected by pinworm include the genitourinary tract, where it has been linked with conditions such as endometritis, tubo-ovarian abscess, ovarian abscess, Bartholin's abscess, vaginal enterobiasis, vulvovaginitis, urinary tract infection, and even renal parenchyma infection. Pinworm infection has also been documented in the bile duct post-cholecystectomy, as well as in cases of infectious keratitis following keratoplasty, where eggs were likely introduced via contaminated hands. Live worms have been reported in the conjunctival sac and nasal passages. Thus, pinworm infection may present across a wide range of surgical conditions. In conclusion, gastrointestinal parasitic infections should be considered when relevant

symptoms are present, as pressing surgical conditions may delay the diagnosis and management of these infections.

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