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Case Report on Attack of Gastrointestinal Tracts of Children

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Abstract

Enterobius vermicularis is a threadlike parasite commonly referred to as "pinworms." It is the most common helminth infection, affecting children's gastrointestinal tracts worldwide, albeit it seldom causes mortality. Infections with *Enterobius vermicularis* are typically asymptomatic and cause solely anal pruritis, with adult pinworms occasionally migrating into the appendix or female genital tract. We present the case of a 15-year-old girl who went to the ER with a high-grade fever, vomiting, and vague abdominal pain that had been persistent for three days. She underwent an emergency ileocecectomy after being diagnosed with acute abdominal pain, but she died the next day. The intraluminal and intramural *Enterobius vermicularis* discovered during the pathological examination of the ileocecal junction was concluded to be the cause of death in the absence of any other diseases. Death from *Enterobius vermicularis* is uncommon; however, this case highlights the need of doctors investigating *Enterobius vermicularis* infections in patients with unexplained severe abdominal discomfort, since it could be a cause of death.

Keywords: Pinworms • Abdominal pain • Enterobiasis

Introduction

Enterobius vermicularis, popularly known as "pinworms," is the most common helminth infection (but the least harmful), infecting children's gastrointestinal tracts worldwide [1]. It is responsible for 4-28% of such infections [2,3] and has been known for hundreds of years. Fabricus Hildanus described appendicitis pinworms for the first time in 1634 [4]. There are few case reports of pinworms found in surgical or histologic autopsy specimens, particularly in the appendix. These pinworm eggs spread via the fecal-oral pathway [5]. Pinworms can be found in many different areas of the body, including the ileum, caecum, colon, and appendix. The female nematode migrates to the anus, lays eggs, and is typically detected by the host at night. This infection typically manifests as perianal, perineal, or vulvar irritations, with secondary sleep problems, restlessness, and appetite loss. Because the eggs are deposited outside the colon, standard stool microscopy is ineffective; however, infection can be easily diagnosed using Graham's scotch tape approach. There have been very few reports of *Enterobius vermicularis* infection in the urinary tract, kidney, biliary tree, fallopian tube, and eye.

Case Presentation

A 15-year-old girl presented to the emergency room of a tertiary care hospital in Riyadh, Saudi Arabia, with a high grade fever, vomiting, and unexplained stomach pain for three days. She had no prior relevant medical history, according to what was known. She also did not have perianal pruritus, rectal bleeding, frequent diarrhoea, or weight loss. None of her family members experienced any strange symptoms. She was evaluated in the same emergency department on two consecutive times and was discharged after analgesics and antiemetics were administered on each occasions. She returned a third time since her abdominal ache was getting worse. She appeared sick on physical examination, with a fever of 38.9 °C, pulse rate of 122 bpm, blood pressure of 90/72 mmHg, and respiration rate of 22 bpm. Abdominal examination revealed diffuse abdominal discomfort and guarding in the absence of bowel movement.

Three sets of blood cultures after five days revealed no bacterial development. Her HIV serology was negative. An abdominal X-ray revealed slight dilated splenic flexure, typical bowel loop gas distribution, but no free air or air fluid level. Her blood pressure plummeted to 70/55 mmHg while being evaluated for a CT scan in the emergency department, and her abdomen exhibited significant distention. She was then brought to the operating room for an emergency exploratory laparotomy. A huge necrotic patch above the caecum was revealed. Following an ileocecectomy, the patient was started on piperacillin/tazobactam intravenously and continued post-operatively. Her condition deteriorated significantly on Day 1 post-surgery, with continuing high-grade fever and a decline in her blood pressure despite vasopressors. The patient passed away on the same day.

Surgical specimens taken before death, including the caecum and a portion of the ileum, were examined grossly and microscopically in the pathology laboratory. The appendix measured 7.5 1 cm in total. Its outside surface was tan pink, unimpressive, and enclosed by a 0.5 cm mesoappendix portion. The serial sectioning revealed the presence of fecalith material in the lumen. The circumference of the ileum was 6 6 cm. When the ileum was opened, the mucosa was discovered to be nodular, with nodules ranging in size from 0.1 to 0.5 cm. The circumference of the caecum was 12 8 cm. The exterior surface included dispersed white patches, the largest of which was 2 cm in maximum diameter. When the caecum was opened, the mucosa was focally flat, with hemorrhagic foci visible. The appendix was not inflamed and exhibited healthy tissue under the microscope [6].

Discussion

Infection with *Enterobius vermicularis* is frequently asymptomatic or manifests as mild symptoms such as vomiting and perianal itching. This case describes the death of a 15-year-old girl who appeared with abdominal pain but no perianal pruritus and no family members with infection-like symptoms. Following pathological evaluation of surgical specimens, the case was reviewed and assigned to *Enterobius vermicularis*. Histopathological examination revealed intraluminal and intramural *Enterobius vermicularis* eggs in the ileocecal segment. Although appendicitis caused by pinworms is still debated, *Enterobius vermicularis* has been linked to appendicitis, with young females being the most vulnerable population. The negative blood cultures

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and lack of other diseases in this young child point to pinworm as the cause of death.

This is consistent with another report of enterobiasis-related death, in which the diagnosis was discovered only after an autopsy revealed the presence of *Enterobius vermicularis* in the duodenum and proximal ileum, along with intestinal haemorrhage. *Enterobius vermicularis* infections can occur asymptomatically in one-third of infected patients, making early detection and treatments difficult. This was the situation with the patient in the current investigation, who did not exhibit any of the classic clinical signs of *Enterobius vermicularis*, such as perianal pruritus. This naturally creates a difficulty to medical teams, as a presumptive diagnosis of *Enterobius vermicularis* cannot be made without the presence of traditional symptoms of the disease. Because the eggs are deposited outside the large intestines, symptoms of perianal irritation could have led to the collection of perianal swabs in the early morning for microscopy. The cellophane tape method on perianal skin in the early morning can be used to detect *Enterobius vermicularis* eggs.

Conclusion

We present evidence of intraluminal and intramural *Enterobius vermicularis* eggs in a 15-year-old female patient who died. Every life-saving procedures were taken to preserve her life, but it was too late due to intestinal gangrene. Because the colon was already gangrenous, all of the air in it enlarged the abdomen. Shock and mortality resulted from gangrene caused by vascular thrombosis and vasculitis. There have been reports of cases demonstrating the diversity of the pathophysiology and mechanism of infestation of *Enterobius vermicularis*, which can lead to serious consequences with significant morbidity and mortality, and patients can present with atypical signs and symptoms. As a result, clinicians should not rule out pinworm infection in patients who have stomach pain or are suspected of having appendicitis. Our capacity to differentiate *Enterobius vermicularis* in the absence of its characteristic clinical manifestations will help us avoid such tragedies.

Acknowledgment

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Conflicts of Interest

None.

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