Case study

Acute Appendicitis due to Enterobius vermicularis : three case reports and literature review

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ABSTRACT

Pinworm infection is highly contagious considered to be the most common helminth infection, The association of this parasitic infestation with pathogenesis of acute appendicitis had been studied for many years, and is still unclear. We present three cases of enterobiasis of appendix presented as acute appendicitis in whom emergency appendectomy was performed. The finding of E. vermicularis in appendectomy pathological specimens is a rare incident, parasitic infections rarely cause acute appendicitis.

Keywords: Appendix, acute inflammation, Appendectomy, Enterobius vermicularis

1. INTRODUCTION

E. vermicularis (pinworm) is a small, white obligate nematode that affects 1000 million individuals worldwide and is considered to be the most common helminth infection.(1) The association of this parasitic infestation with acute appendicitis varies from 0.2%–41.8% worldwide.(2) We present three cases of enterobiasis of appendix presented as acute appendicitis

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2. CASE PRASENTATION

CASE 1 : A 39-year-old man presented with a 48-hour history of abdominal pain located in the right lower quadrant. His physical examination revealed tenderness in the right iliac fossa, local guarding and rebound tendernessat the McBurney point, consistent with signs of acute appendicitis. His body temperature was 39,3°C. Laboratory investigations showed a moderately elevated white cell count (12,000/mm3). The ultrasound showed a swollen appendix is identified, reaching a diameter of 12 mm, an appendectomy was performed, Macroscopic examination showed multiple worms visible adherent to the mucosa, The patient was discharged from hospital one day after the surgery and has been treated with albendazole.

CASE 2 : A 32-year-old woman walked into the emergency room due to abdominal pain. Physical examination revealed fever of 39°C blood pressure (12/70 mmHg) and heart rate (75 beats/min) tenderness in the right iliac fossa. Laboratory data on admission showed white blood cell count of 14340/mm3.An abdominal ultrasound revealed showed a non-compressible and inflamed appendix. An appendectomy was performed ,The examination of spicemen showed multiple intraluminal worms The patient was discharged from hospital on the first postoperative day and has been treated with albendazole.

CASE 3 : A 17 years-old man Admitted to surgical emergency due to right iliac fossa pain, abdominal examination reveald a muscular defense in the right lower quadrant of the abdomen. Laboratory data on admission showed white blood cell count of 15350/mm3. The abdominal ultrasound showed acute appendicitis measuring 10 mm in diameter. An appendectomy was performed

The examination of spicemen showed multiple intraluminal worms. The patient recovered well and was discharged one day after surgery and has been treated with anti-helminthic.

Figure 1. Multiple worms of Enterobius vermicularis after opening of the resected appendix.

3. RESULTS AND DISCUSSION

E. vermicularis (pinworm), formerly known as Occiyur vermicularis or oxyurides, is a small, white obligate nematode that affects 1000 million individuals worldwide. It has also been referenced in the ancient writings of Hippocrates, as far back as 430 BC, However, it was Fabrius in 1634 who first described involvement of the worm in appendicitis. (1)

Pinworm infection is highly contagious and spreads through human-to-human transmission, by swallowing infectious pinworm eggs , these eggs are usually deposited onto a surface or object by a person who's been infected. The cycle of infection begins with the ingestion of these microscopic eggs.(3) Once the eggs enter the body, they remain in the intestine until they hatch and mature, as adults, the female pinworms move into the colon and exit the body through the anus at night, Female pinworms lay eggs in the folds of skin around the anus and then return to the colon. The most common clinical presentation of pinworm infection is perianal itching, predominantly occurring at night-time.(4)

When a person scratches the affected area, the pinworm eggs transfer to the fingers. The eggs can survive for several hours on the hands, the eggs can transfer from contaminated fingers directly to food or liquids, also Children transfer pinworm eggs easily because they may put infected toys or other objects directly into their mouths.(4)

Despite that the relationship between E. vermicularis and pathogenesis of appendicitis had been studied for many years, the influence of the parasite to induce inflammation is still

unclear.(5) Although pinworm may have a role in causing appendiceal disconfort or appendiceal chronic inflammation due to obstruction of the lumen of appendix, or they may elicit hypersensitivity reaction in the tissues causing clinical picture of acute appendicitis, The majority of cases have no acute inflammation .(6,7)

The laparoscopic appendectomy is safe and effient operative procedure over open method , it provides clinically beneficial advantages, However, in this cases it runs the risk of contamination of the peritoneal cavity with worms. (8)

Pharmacological eradication with antihelminthics such as mebendazole is also required and Education about hand hygiene should also be provided (5)

In the case of chronic recurrent infection, simultaneously treating all (including asymptomatic) members of a household (parents, siblings, grandparents, fellow occupants) has proved a successful approach.(4)

4. CONCLUSION

The finding of E. vermicularis in appendectomy pathological specimens is a rare incident, parasitic infections rarely cause acute appendicitis. (3) The treatment of choice is surgical resection of the appendix and Pharmacological eradication with antihelminthics. (6)

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