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Worm within worm: An unusual cause of Acute Appendicitis due to Pinworm infestation

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ABSTRACT
Introduction- Appendicitis is one of the abdominal surgical emergency. Acute appendicitis is often related to direct infiltration or obstruction of its lumen with multifactorial causes including fecolith,lymphoid hyperplasia, tumors and intestinal parasites.Although rare , the presence of pinworms in the appendix has been shown to cause symptoms mimicking appendicitis or appendiceal 'colic'.
Materials & Methods- A 45-year-old man was referred to our Emergency Department with acute abdominal pain in his right lower quadrant. The physical and laboratory examination revealed right iliac fossa tenderness and leukocytosis with neutro-eosinophilia(supported by sonologic evidence). An open appendectomy was performed and specimen was sent for histopathological examination.
Results- The pathological examination showed the lumen containing pinworms. Two oral doses of mebendazole were administered postoperatively. The follow-up to date was without incident and he was free of symptoms one year after the operation.
Discussion- The finding of E. vermicularis in appendectomy histopathological specimens is a rare incident. Parasitic infections rarely cause a clinical image of acute appendicitis, especially in adults. The surgeon must be aware of parasite infection with appendicitis-like symptoms. Careful examination and symptomatology awareness, such as pruritus ani or eosinophilia in the blood examination, and a high level of suspicion might help in proper management.

I. INTRODUCTION –

Enterobius vermicularis, commonly known as pinworm or threadworm, is responsible for a widespread parasitic infection . Around 4% to 28% of children worldwide are reported to be infected . Pinworms measure approximately 8-10 mm in length and live with their heads embedded in the right hemicolon and adjacent bowel . Infection via the fecal-oral route is the most common route of human transfer, while eggs may remain viable for two to three weeks on clothing and bedding. E. vermicularis infection is usually asymptomatic. The most common symptom is pruritus in the perianal region, but infestation may also present with ileocolitis,enterocutaneous fistula, urinary tract infection, mesenteric abscesses, salpingitis and appendicitis . The presence of pinworms in the appendix has been shown to cause symptoms mimicking appendicitis or appendiceal 'colic' but frequently without any histological evidence of acute inflammation. The presence of E. vermicularis is associated with chronic inflammatory infiltrates and eosinophilia . This is a case of a 45-year-old man with right iliac fossa pain, who underwent appendectomy and the pathology revealed E. vermicularis.

II. CASE PRESENTATION –

A 45-year-old man was referred to Emergency Department with acute abdominal pain in his right lower quadrant, mild fever, anorexia and nausea. A physical examination revealed right iliac fossa tenderness (McBurney's sign) and a positive Rovsing's sign. A laboratory examination

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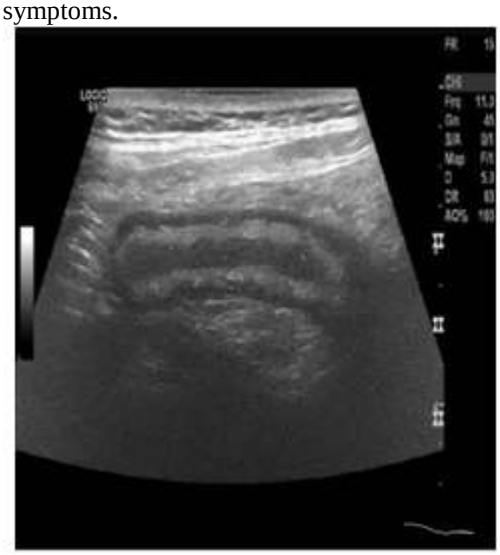
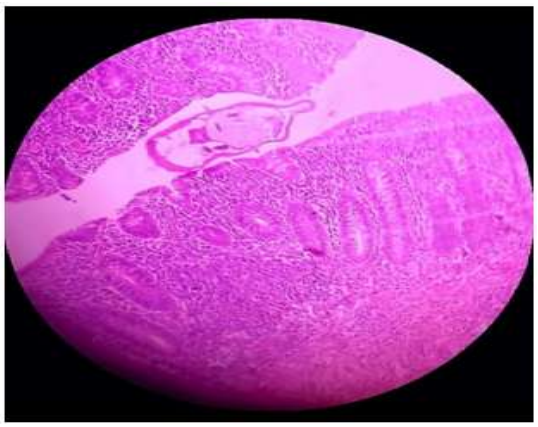
showed an elevated white blood cell (WBC) count at 14,500/μL with neutrophilia (85.5% neutrophils) . Abdominal ultrasound reported acute appendicitis with few intraluminal and intramural artefacts ; . An open appendectomy was performed. The macroscopic appearance was suggestive of acute appendicitis . The pathological examination revealed the lumen to contain E. vermicularis without inflammatory infiltrations in the underlying mucosa (Fig). Postoperatively, one oral dose of 100 mg of mebendazole was administered to the patient and his family members and was repeated after 15 days. One year after the operation, patient was free of symptoms.



III. DISCUSSION

Gastrointestinal infection due to E. vermicularis occurs in all ages and socioeconomic levels, but it is most common in children aged five to fourteen years . Yildirim et al. reported a mean age of 38 years in patients who were operated on for acute appendicitis with the pathological examination revealing E. vermicularis. After ingestion, the eggs hatch in the stomach and then the coiled larvae appear. Larvae travel to the cecum, where they mature to adult pinworms measuring 1 cm in length. Gravid adult female worms migrate during the night to the perianal region, where they deposit up to 10,000 eggs. Eggs are infective within six hours of ovi deposition. Globally, the reported incidence of E. vermicularis in patients with symptoms of appendicitis ranges from 0.2% to 41.8% .E. vermicularis infestation may cause a clinical picture resembling acute appendicitis by obstructing the lumen or causing a hypersensitivity reaction in the tissue . The reported rates of inflammation in specimens from appendices infested with E. vermicularis range from 13% to 37% .



IV. CONCLUSIONS

The finding of E. vermicularis in appendectomy histopathological specimens is a rare incident. Parasitic infections rarely cause a clinical image of acute appendicitis, especially in adults. The surgeon must be aware of parasite infection with appendicitis-like symptoms. Careful examination and symptomatology awareness, such as pruritus ani or eosinophilia in the blood examination, and a high level of suspicion might prevent unnecessary appendectomies.

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