Case Report

Enterobius vermicularis appendicitis –An unexpected guest

Priyatharsini Pari1,*, Bharathi U1, Priyadharsini J1, Pammy Sinha1

1 Dept. of Pathology, Sri Lakshmi Narayana Institute of Medical Sciences, Kudapakkam, 009, Puducherry, India

A R T I C L E   I N F O

Article history:
Received 08-03-2021
Accepted 11-03-2021
Available online 03-04-2021

Keywords:
Enterobius vermicularis
Appendicitis
Pinworm
Diagnosis

A B S T R A C T

Background: Enterobius vermicularis appendicitis is one of the rare finding in the appendectomy specimens. It is most often an incidental finding and its role in the causation of acute appendicitis is the topic of controversy.

Case Report: An Indian 27-year-old male presented with symptoms of acute appendicitis. His physical examination and laboratory investigations point towards the diagnosis of acute appendicitis following which open appendectomy was performed. Histopathological evaluation suggests Enterobius vermicularis appendicitis. Patient was given antihelminthic medications and his post-operative course was uneventful.

Conclusion: All appendectomy specimens must be searched for the parasite since it has varied histopathological spectrum, and its presence helps in the initiation of appropriate medications.

1. Introduction

The Vermiform appendix is a rudimentary organ in human beings. It originates from the medial caecal wall and measures about 6-7 cm in length and 0.7 cm in greatest diameter. The position of the appendix varies and its most common location is posterior to the caecum or ascending colon. The function of the appendix is debatable.1 Enterobius vermicularis also known as Oxyuris vermicularis is one of the most common nematode infection in the world. The infection is common in temperate climate. Enterobius vermicularis causing acute appendicitis is the topic of debate.2

Enterobius vermicularis commonly known as pinworm affect the children and adolescents. Its mode of transmission is feco-oral route. Fomites can also aid in transmission. Following ingestion the, eggs hatch in the intestine and the adult worm resides in the caecum, appendix and colorectum. Extraintestinal presentations are rare.3,4 Pinworm infestation in appendix is mostly asymptomatic and is encountered as an incidental finding in appendectomy specimens.4 Hereby we report a case of Acute appendicitis with Enterobius vermicularis infection in a resected appendectomy specimen.

2. Case Report

A 27 year old Indian male admitted in casualty with complaints of lower abdominal pain, fever and vomiting. On examination tenderness was present at McBurney’s point. Rovsing’s sign was positive. Patient had tachycardia with low grade fever. Blood count revealed leucocytosis with total WBC count of 14,000 cells/cu.mm. ESR and CRP was elevated. USG findings were directed towards the diagnosis of appendicitis. Following which an open appendectomy was performed. The resected specimen measured 8x2.3 cm with an average luminal wall thickness of 0.4 cm. Serosa was congested and lumen was filled with fecolith. Histopathological examination showed surface epithelial ulceration with dense acute and chronic inflammatory cell infiltrate comprising of lymphocytes, eosinophils, neutrophils and plasma cells involving entire thickness of appendix. Lymphoid hyperplasia is also noted. Lumen of the appendix showed enterobius vermicularis.
to various inflammatory patterns. In this case there was dense acute and chronic inflammatory infiltrate. Lumen of the appendix showed pinworms. The cross section of the worm shows the characteristic lateral projections (alae) from its wall. Within the wall numerous annular structures are seen which corresponds to its bowel. Adult male genitals are round and finely granular while gravid female have many oval eggs.

4. Conclusion
The clinical picture and histopathological findings of Enterobius Vermicularis appendicitis is highly variable. Hence, all appendectomy specimen must be carefully examined for the presence of the parasite, so that appropriate anti-helminthic medication is initiated.

5. Conflicts of Interest
All contributing authors declare no conflicts of interest.

6. Source of Funding
None.

References
1. Deshmukh S, Verde F, Johnson PT, Fishman EK, Macura KJ. Anatomical variants and pathologies of the vermiform appendix. Emerg Radiol. 2014;21(5):543–52.
2. Gatti S, Lopes R, Cevini C, Ijouba B, Bruno A, Bernuzzi AM, et al. Intestinal parasitic infections in an institution for the mentally retarded. Ann Trop Med Parasitol. 2000;94(5):453–60.
3. Ash LR, Orihel TC. Enterobius vermicularis. In: Ash and Orihel's Atlas of Human Parasitology, 5th Edn. Chicago: ASCP Press; 2007. p. 191–5.
4. Sodergren MH, Jethwa P, Wilkinson S, Kerwat R. Presenting features of Enterobius vermicularis in the vermiform appendix. Scandinavian J Gastroenterol. 2009;44(4):457–61.
5. Ahmed MU, Bilal M, Anis K. The Frequency of Enterobius Vermicularis Infections in Patients Diagnosed With Acute Appendicitis in Pakistan. Glob J Health Sci. 2015;7(5):196–201.
6. Burkhart CN, Burkhart CG. Assessment of frequency, transmission, and genitourinary complications of enterobiasis (pinworms). Int J Dermatol. 2005;44(10):837–40.
7. Fan CK, Chuang TW, Huang YC. Enterobius vermicularis infection: prevalence and risk factors among preschool children in kindergarten in the capital area, Republic of the Marshall Islands. BMC Infect Dis. 2019;19:536.
8. Arityarathenam AV, Nachimuthu S, Tang TY, Courtney ED, Harris SA, Harris AM, et al. Enterobius vermicularis infestation of the appendix and management at the time of laparoscopic appendicectomy: Case series and literature review. Int J Surg. 2010;8(6):466–9.
9. Sinha RT, Dey A. A Retrospective Study of Histopathological Features of Appendectomy Specimens – What All can Expect? J Med Sci Health. 2016;02(02):6–12.
10. Panidis S, Paramythiotis D, Panagiotou D, Batis G, Salonikidis S, Kaloutsis V, et al. Acute appendicitis secondary to Enterobius vermicularis infection in a middle-aged man: a case report. J Med Case Rep. 2011;5(1):559.
11. Lauwers G, Mino-Kenudson M, Kradin RL. Infections of the gastrointestinal tract. In: Kradin R, editor. Diagnostic pathology of infectious disease. Philadelphia: Elsevier; 2010. p. 246–7.

**Author biography**

Priyatharsini Pari, Assistant Professor

Priyadharsini J, Associate Professor

Pammy Sinha, Professor

**Cite this article:** Pari P, Bharathi U, Priyadharsini J, Sinha P. Enterobius vermicularis appendicitis –An unexpected guest. *IP Arch Cytol Histopathology Res* 2021;6(1):57-59.