

Enterobius vermicularis Infestation Mimicking Rectal Malignancy

Rektal Maligniteyi Taklit Eden Enterobius vermicularis Enfestasyonu

© Ozan Akıncı¹, © Nuray Kepil², © Yusuf Ziya Erzin³, © Abdullah Kağan Zengin⁴

¹Hakkari State Hospital, Clinic of General Surgery, Hakkari, Turkey

²İstanbul University-Cerrahpaşa, Cerrahpaşa Faculty of Medicine, Department of Pathology, İstanbul, Turkey

³İstanbul University-Cerrahpaşa, Cerrahpaşa Faculty of Medicine, Department of Gastroenterology, İstanbul, Turkey

⁴İstanbul University-Cerrahpaşa, Cerrahpaşa Faculty of Medicine, Department of General Surgery, İstanbul, Turkey

Cite this article as: Akıncı A, Kepil N, Erzin YZ, Zengin AK. Enterobius vermicularis Infestation Mimicking Rectal Malignancy. Turkiye Parazit Derg 2020;44(1):58-60.

ABSTRACT

Enterobius vermicularis is a common intestinal nematode of humans that can be considered relatively harmless. A polypoid lesion mimicking malignancy was detected in the rectum of a 66-year-old female patient who had been operated for sigmoid colon adenocarcinoma in the past. Histopathological examination of the lesion revealed no malignancy but there was adult *E. vermicularis* nematodes and eggs. In this case report, we aimed to present an enterobiasis infestation that produces non-necrotizing granuloma tissue in the rectum.

Keywords: *Enterobius vermicularis*, rectal polyp, malignancy

ÖZ

Enterobius vermicularis insan barsağında yaygın bulunan nispeten zararsız kabul edilebilen bir nematoddur. Altmış altı yaşında sigmoid kolon adenokarsinomu nedeniyle daha önce opere edilmiş olan bir kadın hastanın rektumunda maligniteyi taklit eden bir polipoid lezyon saptandı. Lezyonun histopatolojik incelemesi sonucunda erişkin *E. vermicularis* nematodları ve yumurtaları görüldü, maligniteye rastlanmadı. Bu olgu sunumunda rektumda non-nekrotizan granülom dokusu oluşturan bir enterobiasis enfestasyonunu sunmayı amaçladık.

Anahtar Kelimeler: *Enterobius vermicularis*, rektal polip, malignite

INTRODUCTION

Enterobius vermicularis is a common intestinal nematode that is common all over the world, especially in temperate regions, where fecal sanitation is poor, and rarely leads to symptomatic diseases. The most typical symptom of *E. vermicularis* infestation is pruritus ani which particularly exacerbates at nights. It is not zoonotic, its life cycle is simple and human is its only natural host. It is spread through the fecal-oral route and is transmitted by inhalation or ingestion of the helminth egg. The female helminths migrate to the

anus and empty their eggs into the perianal region, leading to pruritus ani. An adult female helminth can live in the bowel for about six weeks. If the infection becomes chronic, the inflammatory reaction process may progress up to polyp development in the colon mucosa. In the literature, this infestation has been reported to have the potential to cause acute appendicitis, salpingitis, ileocolitis, mesenteric abscess and urinary tract infection (1). It has been further reported to create granuloma in the cecum, sigmoid colon, anal canal and extraintestinal tissues such as liver and ovary (2-7).



Received/Geliş Tarihi: 07.10.2019 Accepted/Kabul Tarihi: 04.12.2019

Address for Correspondence/Yazar Adresi: Ozan Akıncı MD, Hakkari State Hospital, Clinic of General Surgery, Hakkari, Turkey
Phone/Tel: +90 537 749 06 41 E-mail/E-Posta: ozanakinci1987@hotmail.com ORCID ID: orcid.org/0000-0002-7149-6854

There are only a few case reports in the literature that *E. vermicularis* mimics malignancy (4,6-8). Similarly, other helminths such as *Schistosoma* species, *Fasciola hepatica*, *Echinococcus* species and *Ascaris* species have been shown to cause lesions mimicking malignancy (9,10).

In this case report we aimed to present a case of rectal polyp physical appearance of which met the criteria for malignancy but whose etiology was, in fact, found to be inflammatory and infective.

CASE REPORT

A 66-year-old female patient, who had been operated for sigmoid colon adenocarcinoma six months ago in İstanbul University-Cerrahpaşa, Cerrahpaşa Medical Faculty, Department of General Surgery, applied for a follow-up examination after adjuvant chemotherapy. During the digital rectal examination, a palpable lesion was detected on the posterior wall of the rectum approximately 2 cm proximal to the rectal exit. Positron emission tomography-computed tomography showed high fluorodeoxyglucose levels in the rectum ($SUV_{max}=6.1$). Colonoscopy revealed that the anastomosis line at 20 cm was natural, but there was a collapsed and ulcerated polypoid lesion of 1 cm in diameter which was located 1 cm proximal to the linea dentata in the rectum (Figure 1). Multiple biopsies were obtained from the lesion which was considered as possible second primary tumor (T2N0Mx) on the endoscopic ultrasound examination. No tumor finding was observed in the histological examination and endoscopic mucosal resection was performed. Histopathological examination of resection material showed dense lymphoplasmacytic cells in and around the ulcer in the rectum, neutrophil infiltration, concomitant eosinophils, and granulation tissue (Figure 2). Fragments, which were thought to belong to the parasite, were seen in the serial sections (Figure 3). No malignancy was observed. In the microbiology consultation, the morphological features of the parasite were reported to be compatible with *Enterobius vermicularis*. No recurrence was observed in the control colonoscopy performed following



Figure 1. A collapsed and ulcerated polypoid lesion which was located 1 cm proximal to the linea dentata in the rectum

the albendazole treatment. Written informed consent was obtained from the patient who participated in this study. Ethical approval was obtained for this study (approval date and number: 10.09.2019/303098).

DISCUSSION

Gastrointestinal infection due to *Enterobius vermicularis* occurs worldwide and is considered to be the most common helminthic infection. Although seen in all ages and socioeconomic levels, there is a distinct predilection for the pediatric population and women (11). As previously mentioned, the mature worm of *E. vermicularis* lives in the proximal part of the ascending colon, caecum, appendix and the terminal ileum. If it is not diagnosed and treated appropriately, it can cause granulation tissue development as a result of chronic inflammation in the organs. This granulation tissue is sometimes similar to malignant lesions and may lead to unnecessary investigations and invasive

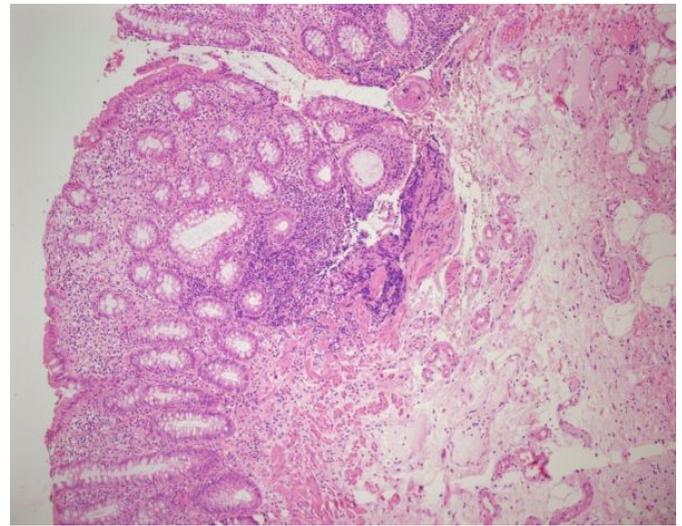


Figure 2. Dense lymphoplasmacytic cells, neutrophil infiltration, concomitant eosinophils in and around the ulcer in the rectum (X40 H&E)

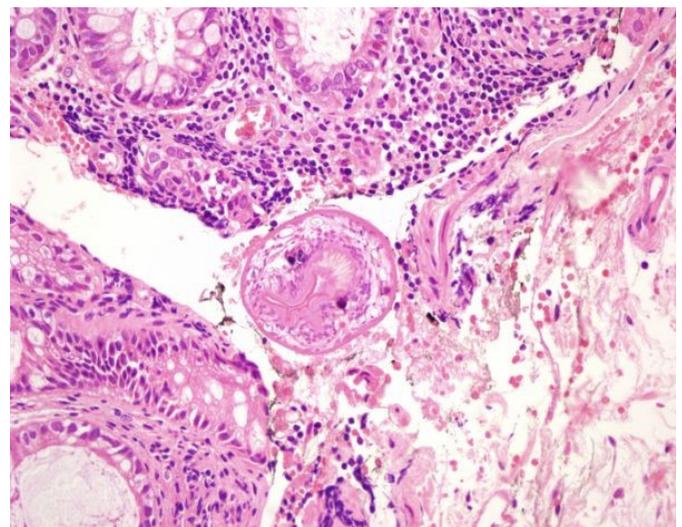


Figure 3. Nematode fragments in the ulcerated area of mucosa (X400 H&E)

treatments.

Elsaid et al. (7) reported that *E. vermicularis* infestation was the etiology of a malignant polypoid lesion localized in the cecum. In addition, Bharathi et al. (4) presented a case of *E. vermicularis* mimicking a pseudo-tumor located in the anal canal. In the present case, an ulcerated polypoid lesion detected in the distal rectum of the patient who had undergone surgery for sigmoid colon adenocarcinoma 6 months ago, caused suspicion of second primary malignancy and the definitive diagnosis could be made as a result of histological examination performed following the endoscopic mucosal resection.

In the literature, several cases have been reported too that chronic infestation of *E. vermicularis* in the liver parenchyma as well as in the digestive tract leads to mass lesions mimicking malignancy (6,12,13).

While eradication of *E. vermicularis* can be achieved with oral anthelmintic agents such as albendazole or pyrantel pamoate, in some case reports, radical treatment methods that can reach up to surgical resection are seen (6,8,12). Since our patient was suitable for endoscopic mucosal resection, there was no need for radical surgical resection.

Not only *E. vermicularis*, but also some other nematode, cestode and trematode species have been reported to cause lesions mimicking malignancy (9,10,14,15). The most commonly reported are *Schistosoma* and *Echinococcus* species, respectively (9).

The differential diagnosis of malignancy and the parasitic infestation cannot be made based on laboratory tests or radiological imaging methods. As in our case, biopsy and histological examination are mandatory and of critical importance for the definitive diagnosis in patients with suspected colorectal malignancy. Therefore, it is important to recognize that the various modalities used for diagnosis in medicine do not offer a definitive diagnosis in all cases. Findings should be interpreted judiciously, taking into account the sensitivity and specificity of the technique used.

It should be kept in mind that *Enterobius vermicularis* may cause lesions that are difficult to differentiate from malignancy as a result of chronic infestation in gastrointestinal tract.

* Ethics

Informed Consent: Written informed consent was obtained from the patient who participated in this study.

Peer-review: Internally peer-reviewed.

* Authorship Contributions

Surgical and Medical Practices: Y.Z.E., A.K.Z., O.A., Concept:

O.A., N.K., Design: O.A., N.K., Data Collection or Processing: O.A., N.K., Analysis or Interpretation: Y.Z.E., A.K.Z., Literature Search: O.A., N.K., Writing: O.A.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

REFERENCES

- Sodergren MH, Jethwa P, Wilkinson S, Kerwat R. Presenting features of *Enterobius vermicularis* in the vermiform appendix. *Scand J Gastroenterol* 2009;44:457-61.
- Podgajski M, Kukura V, Duic Z, Gasparov S, Madzarac M. Ascites, high CA-125 and chronic pelvic pain in an unusual clinical manifestation of *Enterobius vermicularis* ovarian and sigmoid colon granuloma. *Eur J Gynaecol Oncol* 2007;28:513-5.
- Avolio L, Avoltini V, Ceffa F, Bragheri R. Perianal granuloma caused by *Enterobius vermicularis*: report of a new observation and review of the literature. *J Pediatr* 1998;132:1055-6.
- Bharathi K, Anuradha S, Chandrasekar VA, Thirunaryanan R. *Enterobius vermicularis* worm granuloma mimicking like a pseudo tumor in the anal canal: An unusual clinical presentation. *Trop Parasitol* 2012;2:124-6.
- Vafai M, Mohit P. Granuloma of the anal canal due to *Enterobius vermicularis*. Report of a case. *Dis Colon Rectum* 1983;26:349-50.
- Arkoulis N, Zerbini H, Simatos G, Nisiotis A. *Enterobius vermicularis* (pinworm) infection of the liver mimicking malignancy: Presentation of a new case and review of current literature. *Int J Surg Case Rep* 2012;3:6-9.
- Elsaid N, Mahmood H, Tekkis P, Tan E. Enterobiasis-related inflammatory caecal polyp masquerading as a malignancy. *BMJ Case Rep* 2014.
- Furnée EJ, Spoto C, de Graaf MJ, Smakman N. *Enterobius vermicularis* infection of the liver in a patient with colorectal carcinoma with suspected liver metastasis. *BMJ Case Rep* 2015;5:2015.
- Pilszczek FH. Helminthic infections mimicking malignancy: a review of published case reports. *J Infect Dev Ctries* 2010;4:425-9.
- Kim YH, Kang KJ, Kwon JH. Four cases of hepatic fascioliasis mimicking cholangiocarcinoma. *Korean J Hepatol* 2005;11:169-75.
- Aydin O. Incidental parasitic infestations in surgically removed appendices: a retrospective analysis. *Diagnost Pathol* 2007;2:16.
- Ng W.S., Gallagher J., McCaughan G. "Pinworm" infection of the liver: unusual CT appearance leading to hepatic resection. *Dig Dis Sci* 2004;49:466-8.
- Mondou E.N., Gnepp D.R. Hepatic granuloma resulting from *Enterobius vermicularis*. *Am J Clin Pathol* 1989;91:97-100.
- Galán-Puchades MT, Fuentes MV. On Taeniasis/Cysticercosis Mimicking Lymphoma on PET/CT Imaging. *Clin Nucl Med* 2015;40:614.
- Omonisi AE, Odujoko OO, Aluko JA, Akinyemi HA, Alatishe OI, Omoniyi-Esan GO. Human cysticercosis of the breast mimicking breast cancer: a report of a case from Ile-Ife, Nigeria. *Niger J Med* 2014;23:351-4.