

Ectopic Ascariasis: Overview, Sites, Diagnosis, and Management

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ABSTRACT

When the adult of *Ascaris lumbricoides* migrates outside the gut, it can cause ectopic ascariasis, which can lead to significant consequences such as pancreatitis, peritonitis, or biliary blockage. Our article aimed to inform you how the adult of *Ascaris lumbricoides* causes ectopic ascariasis.

Keywords: Ascariasis, Ectopic, Migration, Adult

To cite this article: Ismael SS, FB Mikaeel, AJ Sadiq & BH Abdullah. Ectopic Ascariasis: Overview, Sites, Diagnosis, and Management. *Biological Times*. 2026. February 5(2): 26.

Introduction

One of the most prevalent helminthic infections in humans globally is *Ascaris lumbricoides*, the biggest intestinal nematode (roundworm) that parasitizes the human intestine. Ectopic ascariasis refers to migration of *Ascaris lumbricoides* outside the intestinal lumen into other organs, where it may cause acute, sometimes life-threatening disease [1,2]. Adult female worms lay a lot of eggs that leave the body; these eggs need to be embryonated in order to spread to another definitive host [3].

Epidemiology and Pathogenesis

Ascaris infects an estimated 700–800 million people worldwide, with the highest prevalence in children and in low-income, humid tropical regions [4]. Most worms reside in the small intestine, but adult worms may actively migrate into ectopic sites (“surgical type” ascariasis) and cause acute symptoms requiring urgent intervention. Ectopic migration is favored by heavy worm load, fever, anesthesia, or drugs that alter gut motility [5,6].

Case reports highlight unusual locations:

- Biliary ascariasis presenting as obstructive jaundice or mimicking a biliary stent on MRCP; ERCP can reveal and extract a live worm [6,7].
- Nasal ascariasis in a child with unilateral nasal discharge and a history of pica; a live worm was removed from the nasal cavity [8].
- Urinary ascariasis in an 88-year-old woman with dysuria, diagnosed by routine urine microscopy, with <50 such cases reported worldwide [8].

Diagnosis

In endemic settings, any acute abdomen, obstructive jaundice, pancreatitis, or atypical respiratory/urinary symptoms should raise suspicion of ascariasis [6,8].

- Stool microscopy for eggs is the standard test for intestinal infection but may be negative in isolated ectopic disease [5].
- Ultrasound, CT, and MRCP can show characteristic linear or tubular intraluminal filling defects in the biliary and intestinal tracts [10,11].
- Endoscopy/ERCP can directly visualize and remove worms in biliary/pancreatic ducts [5,11].
- Routine microscopy of site-specific samples (e.g., urine, nasal discharge) is critical in rare ectopic presentations, especially in low-resource settings [11].

Management

Most uncomplicated intestinal and biliary infections are treated with anthelmintic drugs (e.g., albendazole, mebendazole); many biliary cases can

be managed conservatively with close monitoring. When complications occur [5].

ERCP for extraction of worms from the common bile duct or intrahepatic ducts [6,7].

Surgery for intestinal obstruction, perforation, peritonitis, or complex abdominal “surgical-type” ascariasis [5,10,12].

Prevention

Ectopic ascariasis is ultimately prevented by reducing overall transmission: Improved sanitation, clean water, and hygiene to limit ingestion of eggs [5,13].

Mass drug administration and targeted deworming programs, especially in high-prevalence regions and schoolchildren [4].

References

- [1] Jourdan PM, Lambert PHL, Fenwick A, Addiss DG. Soil-transmitted helminth infections. *Lancet*. 2018;391(10117):252-265. doi:10.1016/S0140-6736(17)31930-X
- [2] Pullan RL, Smith JL, Jasrasaria R, Brooker SJ. Global numbers of infection and disease burden of soil transmitted helminth infections in 2010. *Parasit Vectors*. 2014;7:37. Published 2014 Jan 21. doi:10.1186/1756-3305-7-37
- [3] Else KJ, Keiser J, Holland CV, et al. Whipworm and roundworm infections. *Nat Rev Dis Primers*. 2020;6(1):44. Published 2020 May 28. doi:10.1038/s41572-020-0171
- [4] Yanagisawa, T. (2009). SOME CONSIDERATIONS ON THE PATHOGENESIS OF HUMAN ASC • @ ARIS AND HOOKWORM INFECTIONS : A REVIEW YOSHITAKA KOMIYA AND.
- [5] C. Holland et al. "Global prevalence of *Ascaris* infection in humans (2010–2021): a systematic review and meta-analysis." *Infectious Diseases of Poverty*, 11 (2022). <https://doi.org/10.1186/s40249-022-01038-z>.
- [6] Ebenezer Fanta et al. "Successful management of biliary ascariasis: Case of obstructive jaundice in endemic region – Case report." *IDCases*, 41 (2025). <https://doi.org/10.1016/j.idcr.2025.e02320>.
- [7] Hochang Chae et al. "Biliary ascariasis misidentified as a biliary stent in a patient undergoing liver resection." *Parasites, Hosts and Diseases*, 61 (2023): 194 - 197. <https://doi.org/10.3347/phd.23012>.
- [8] Mihirkumar J Bhalodia et al. "Ascaris lumbricoides in the right nasal cavity: An unusual presentation in a paediatric patient." *IP International Journal of Medical Microbiology and Tropical Diseases* (2025). <https://doi.org/10.18231/ij.jimtd.13281.1763010090>.
- [9] Rayana Shrestha et al. "Worm in the Water: Diagnosing Urinary Ascariasis in an Elderly Patient Through Routine Microscopy." *Cureus*, 17 (2025). <https://doi.org/10.7759/cureus.89317>.
- [10] Kelvin Kay Nguan Koh et al. "Pictorial review of ascariasis in acute abdomen." *Singapore Medical Journal*, 66 (2025): 462 - 467. <https://doi.org/10.4103/singaporemedj.smj-2022-181>.
- [11] Hochang Chae et al. "Biliary ascariasis misidentified as a biliary stent in a patient undergoing liver resection." *Parasites, Hosts and Diseases*, 61 (2023): 194 - 197. <https://doi.org/10.3347/phd.23012>.
- [12] Sajid MS, Rizwan HM, editors. *Omic approaches in veterinary parasitology: diagnosis, biomarkers, and drug development*. CRC Press; 2024 Nov 28.
- [13] Ismael SS, Abdullah BH, Sadiq AJ, Ajaj JS, Ali NS, Omer DM, Nori NY. Prevalence of Intestinal Protozoan Parasites among Children Attending the Hevi Pediatric Hospital in Duhok Province, Kurdistan Region, Iraq. *Archives of Razi Institute Journal*. 2024;79(3):507-12.