



A Common Worm in a Rare Place

Mohammad Reza SHEIKHIAN

Gastrointestinal and Liver Disease Section, Department of Internal Medicine, Imam Reza Hospital, Mashhad University of Medical Science, Mashhad, IRAN

*Corresponding Author: Tel: 0098 511 8588818 Email: Sheikhanmr2@mums.ac.ir

(Received 18 July 2013; accepted 14 Sep 2013)

Abstract

A case of a 40-year-old female, in whom a 6-meter long worm (*Taenia saginata*) was found in stomach, is reported here. In this patient, *T. saginata* upward migration of the worm to the stomach, its rare phenomenon, worm mostly seen in the small intestine. This is mainly because of the high gastric acidity. In this patient, we believe proton pump inhibitor (PPI) use caused hypochlorhydria and coexistence *H. pylori* infection caused chronic atrophic gastritis, which resulted in the retrograde migration of the tapeworm to the stomach in our patient.

Keywords: *Taenia saginata*, Stomach, Proton pump inhibitor, Iran

Introduction

The beef tapeworm (*Taenia saginata*) is a common infection of both humans and cattle around the world, especially in areas where beef is eaten. Areas where the infection has high prevalence include Sub-Saharan Africa, Southeast Asia and the Middle East. It does occur in the United States, but it is not common due to high sanitation standards. Humans are the only host and are usually infested with a single worm.

Case History

A 47-year-old woman was admitted to our outpatient clinic with a 2-month history of intermittent epigastric pain. Her physical examination and the results of routine blood tests were unremarkable. This patient had treated by proton pump inhibitor for long time. Her abdominal X-ray and abdominal ultrasonography was normal. On upper gastroduodenal endoscopy, a live tapeworm was found (Fig.1), extending from the proximal corpus

to the third portion of the duodenum, during the endoscopy worm curls around the endoscope as it supposes the scope is the same of its kind. But after the scope hits and pursues the worm, it escapes.

In the upper gastroduodenal endoscopy; there was pale antral mucosa with a shiny surface and mild nodularity, which gastric biopsy revealed antral atrophic gastritis with *H. pylori* infection. The patient was treated with single dose (600 mg) of praziquantel for *T. saginata* infestation and we decided to follow up the patient for her chronic atrophic gastritis. After 1 month, she was symptom free and specific exams showed no trace of the parasite.

The patient was given a single dose of praziquantel: 15 mg/kg body weight. The patient got instant relief of her symptoms. Parasitological controls (two series of three fecal samples each), performed two months later, were negative for proglottides in stool specimens.

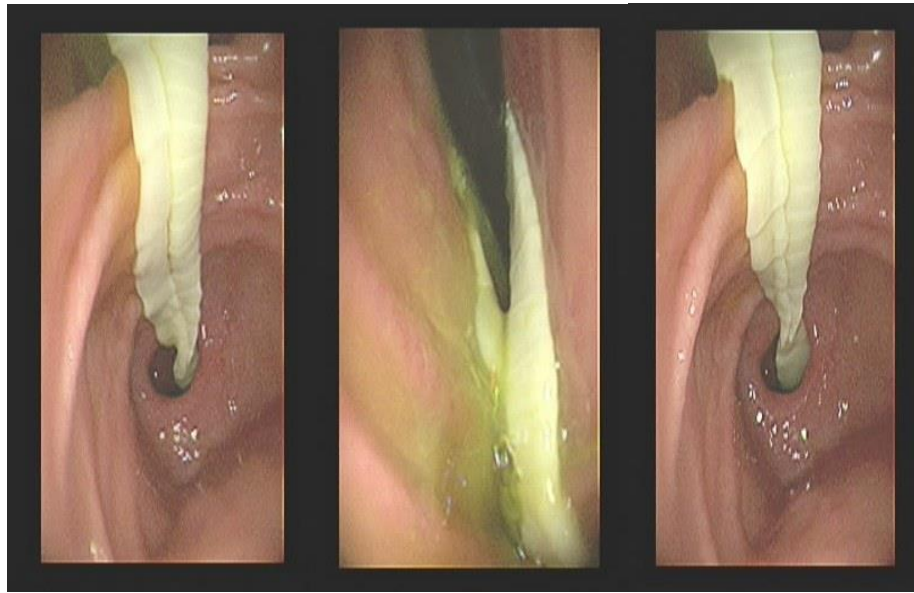


Fig.1: Upper endoscopy showing *Taenia saginata*

Discussion

Taenia saginata, or the beef tapeworm, is a parasite of both cattle and humans, which can only reproduce in humans. Adult worms residing in the small intestine of a human will lay eggs in the proglottids, which are then released in feces. Once proglottids eaten by cattle, the eggs released in the stomach, the digestive enzymes will break down the eggs, allowing the development of oncospheres, or zygotes. The zygotes penetrate through the mucous lining of the digestive tract and circulate through the blood stream, where they develop into small larvae. Larva will develop into cysts with the muscle tissue and have been found in the liver and the lungs of the intermediate host. In humans, a beef tapeworm infection occurs when undercooked meat is consumed. Once the stomach acids break down the cysticercus (cyst containing larva), the worm will move into the intestine to evolution. The worm after about two months, reaches an average size of about sixteen feet. The beef tapeworm can reach an average body length between thirteen and thirty-two feet, although some individuals can grow to be thirty-nine feet in length. It can live to be twenty-five years of age within a host (1,2)

Most taeniasis infections are asymptomatic. When symptoms occur, hosts may experience abdominal pain, headaches, dizziness, weight loss, diarrhea, nausea, constipation, and chronic indigestion. In humans, the tapeworm may cause a blockage in the intestine or cause an allergic reaction when it releases antigens.

Taeniasis due to *T. saginata* is relatively common in Africa, some parts of Eastern Europe, the Philippines, Russia, and Latin America. It is rare in the United States, except in places where cattle and people are concentrated and sanitation is poor. In Iran, taeniasis is common particularly on western and central regions of the Caspian Sea (3).

The most common serious complication of taeniasis is appendicitis. Other reported complications include intestinal obstruction (2), obstruction of bile ducts or pancreatic duct (4), abnormal vaginal bleeding (5) and rarely anastomotic leak (6) or granulomatous gastritis (7). Taeniasis invades the upper small bowel in humans. It is very unusual to see this parasite in the stomach (8).

Taeniasis can be treated using medicines including praziquantel (1•mg/kg) (9) which paralyzes the worm and allows the host to flush it out of the intestines. In order to prevent an infection in humans, it is important to exactly cook beef

products. Salting or freezing the beef products will also kills the infective larvae within the meat, but other measures, like sanitary disposal of human waste, should be taken.

In this patient, *T. saginata* upward migrated from small intestine to the stomach. Because of the high gastric acidity, worm skedaddled but in this case because of PPI use and coexistence *H. pylori* infection, acidity of stomach was decreased, then retrograde migration of the tapeworm to the stomach.

Ethical considerations

Ethical issues (Including plagiarism, Informed Consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

Acknowledgements

The authors declare that there is no conflict of interest.

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