

CASE REPORT

Colonic anastomosis leakage related to *taenia saginata* infestation

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INTRODUCTION

Helminth and protozoa infections remain an important public health problem in tropical and underdeveloped countries.¹ The adult stage of *Taenia saginata* is one of the most common pathogenic cestode in humans.² This tape-worm is transmitted by raw beef consumption.² Infected individuals may remain asymptomatic for years, and the only symptom may be the spontaneous passage of proglottids. However, nonspecific symptoms, such as vague abdominal pain, nausea, vomiting, diarrhea, and weight loss, can be present.³ Although the tapeworm seems to be a benign parasitic disease, it can lead to serious surgical gastrointestinal system (GIS) complications that are seldom reported in the medical literature.²⁻¹¹ However, according to our intensive literature search we believe that this report is the first case of colonic anastomotic leakage related to *T. saginata* infestation following a right hemicolectomy procedure.

Case Report

A 49-year-old male patient was admitted to our emergency service with a one-week history of abdominal pain. Despite using analgesics, abdominal discomfort progressed to generalized abdominal pain, nausea and vomiting. Upon physical examination, generalized abdominal tenderness and rebound tenderness were detected. Laboratory parameters revealed leukocytosis [$14.3 \times 10^3/\mu\text{l}$ (range 4.5-11)] and a high C-reactive protein level of 247.12 mg/l (range <5). No disorder was determined from other parameters. Plain x-ray abdominal radiography was unremarkable. Abdominal ultrasonography (US) and computerized tomography (CT) revealed dilated small intestines in the right lower abdominal quadrant with pericecal free fluid that was compatible with a possible perforated or plastron appendicitis (Fig. 1). Urgent surgery was planned after obtaining the patient's consent. On exploratory laparotomy, a complicated mass formation composed of the appendix, cecum and sigmoid colon was identified in the right lower abdominal quadrant. After separation of the sigmoid colon, a perforated cecal area of necrosis and the appendix were identified. A right hemicolectomy and a hand-sewn

ileotransversostomy were performed. On the third post-operative day, the patient's vital signs began to deteriorate and an enteric fistula was observed at the drainage tube. Therefore, a second-look laparotomy was performed. On exploration, an anastomotic leakage associated with a segment of the tapeworm was identified (Fig. 2). The anastomosis was ligated, and an end ileostomy was performed due to the generalized fecal peritonitis. The postoperative course was uneventful. The patient received a single dose of niclosamide (4×500 mg) 10 days after surgery. The histopathologic examination of the specimen was read



Figure 1 - Computed tomographic findings of a plastron or perforated appendicitis.



Figure 2 - Intraoperative view of the anastomotic leakage related to *T. saginata* infestation.

as infectious colitis, and the parasitological examination revealed *T. saginata*.

DISCUSSION

The adult stage of *T. saginata* is one of the most common pathogenic cestodes in humans.² Reasons including tourism, migration and military operations may lead to the spread of this parasitic infection to unaffected communities. Therefore, this should be considered a worldwide problem.¹ Humans are the definitive host for this tapeworm. Infection with *T. saginata* is transmitted by eating raw beef that contains cysticerci, which are larval forms of the parasite. Most infected individuals are asymptomatic, unless they become aware of the proglottids passing in their stool.³ Complaints from patients, such as feeling discomfort in the anal region while discharging the proglottidis and noticing a worm in their stool or underwear, should lead to a suspicion of taeniasis. However, no problems related to the tapeworm were mentioned by our patient.

The tapeworm attaches to the mucosal surface using four suckers on its anterior scolex. Migration of the proglottids to the GIS lumen can lead to rare serious acute surgical conditions, such as acute appendicitis, Meckel's diverticulitis, pancreatitis, cholecystitis, liver abscess, obstruction and perforation of the intestine and anastomotic leakage.²⁻¹¹ These complications are usually identified during surgery. Unfortunately, we were not able to observe the tapeworm during the first operation. The colonic perforation was suspected to be the result of a perforated plastron appendicitis. Repeat laparotomy incidentally identified the clinical explanation, and the cause of the colonic perforation was later explained by the pathology report.

Compared with small bowel perforations, colonic perforation due to *T. saginata* is a very rare complication that has been reported only once in the literature.⁴ Invasion of the small bowel by the parasite before reaching the large bowel may be a possible explanation. Surprisingly, colonic anastomotic leakage related to *T. saginata* is not reported in the medical literature, and to the best of our knowledge, this case is the first. Due to early dehiscence of the anastomosis and the parasite being extracted from the colonic side, we might speculate that the possible cause for leakage was related to an obstruction of the distal part of the anastomosis by the parasite. Therefore, taeniasis should be considered an

unusual and unexpected cause of colonic anastomotic leakage.

Identification of the tapeworm is based on stool examination for ova. The perianal region can be examined using a cellophane-tape swab to detect ova as well.^{3,7} Serologic tests are not helpful.^{3,4}

Taeniasis is preventable by improving sanitation and strict inspection of beef prior to sale. Beef should be cooked to 60 °C for over 5 min before consumption.^{2,3} Either praziquantel (5-10 mg/kg) or niclosamide (4×500 mg) can be used for medical treatment. Both are effective and free from side effects.² Surgery is recommended only for the treatment of complications.³

In conclusion, taeniasis is a very rare entity that should be considered in the differential diagnosis as the cause of an acute abdomen with unusual surgical complications. It should be kept in mind as a very rare possible cause of early colonic anastomosis leakage. Although surgery is indicated for complications, prevention is the best treatment method.

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