

## Case Report

# Unusual clinical case: extraluminal manifestation of a tapeworm from the eviscerated midline incision in a post-surgery patient

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### Abstract

*Taenia saginata* infestation is one of the most common cestode infestations in humans, that may cause gastrointestinal tract related complications as a result of obstruction, perforation or anastomotic leakage.

A 55-year-old male patient who was receiving palliative chemotherapy for stage IV gastric cancer was admitted to the emergency department for abdominal pain. A hollow viscus organ perforation was diagnosed and an emergency surgery was performed. On postoperative day 5, the patient's midline incision eviscerated and a moving taenia emerged, with abundant particulated fluid from the incision line. The patient was admitted for abdominal surgery due to suspected bowel perforation. During the abdominal exploration, a relaxed purse stitch of the feeding tube was observed and no other bowel perforations were seen. The patient underwent two planned surgery for abdominal cavity lavage after the removal of cestode. Unfortunately, the patient died sixteen days after his admission to the intensive care unit.

This is the first case describing an extraluminal manifestation of a tapeworm in a midline incision from evisceration without intestinal perforation.

**Key words:** *Taenia saginata*; cysticercus; helminth.

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### Introduction

Parasitic infestations of the gastrointestinal system are still important health issues in the twenty first century. They are mostly encountered in underdeveloped or developing countries. *Taenia saginata* (4-12m long) and *Taenia solium* (3-7m long) are two common cestode species. *T. saginata* is the most frequently found genus in Turkey and cases occur particularly in the southeastern region.

For *T. saginata*, cattle are the intermediate hosts where larval development takes place, while humans are definitive hosts harboring the adult worm. *T. saginata* is transmitted to cattle through human faeces or contaminated fodder, and to humans through uncooked or improperly cooked beef.

Previously reported cases have described a number of taenia-related complications that are usually identified during surgery. These include: acute appendicitis, Meckel's diverticulitis, pancreatitis, cholecystitis, liver abscess, obstruction and perforation of the intestine and anastomotic leakage [1].

We report an interesting case of a vital 2.4m long tapeworm which emerged from the evisceration of a midline incision without any intestinal perforation, after emergency surgery in a patient with terminal gastric cancer.

### Case Report

A 55-year-old male patient was admitted to our emergency department with a two-day history of abdominal pain. He had a previous history of stage IV gastric cancer and was receiving palliative chemotherapy. The patient's medical condition was critical and his personal hygiene was poor. On physical examination, generalized abdominal tenderness, guarding and rebound tenderness were detected. His hemoglobin was 9.4 g per 100 ml, total leucocyte count was 5200 mm<sup>-3</sup>, with a differential count revealing 93.3 % neutrophils, 0.2 % eosinophils, 3.1 % lymphocytes and 3.2 % monocytes. The platelet count was 239000 mm<sup>-3</sup>. C-reactive protein was 21.3 mg per 100 ml and plasma albumin was 1.7 g per 100 ml. Other laboratory values were normal.

A plain chest X-ray revealed subdiaphragmatic free air (Figure 1). The patient underwent emergency laparotomy with an impression of a hollow viscus perforation. Operative findings showed gastric cancer in the antrum with a 6-7 cm perforation from the anterior gastric wall. The tumor had invaded into the adjacent organs. Multiple metastatic lesions and another mass leading to obstruction in the proximal rectum were identified. The abdomen was intensely contaminated by digested food residues.

A total gastrectomy without anastomoses was performed for organ removal instead of a primary repair according to the perforation's size. Esophagus and duodenum were sutured, and closed primarily. Damage control and diversion surgery including a feeding jejunostomy, end sigmoid colostomy and peritoneal lavage were done. The abdomen was closed primarily.

Enteral tube feeding was started on postoperative day (POD) one. On the fifth POD; the patient's midline incision eviscerated and a vital moving taenia emerged, with abundant particulated fluid from the incision line (Figure 2). The cestode was removed attentively in a single piece and thereafter an urgent second look laparotomy was performed. During exploration, there was no other perforation site in any intestinal loops, but a relaxation of the purse stitch was detected around the feeding tube's jejunal insertion. The patient received a single dose of niclosamide (4×500 mg) postoperatively.

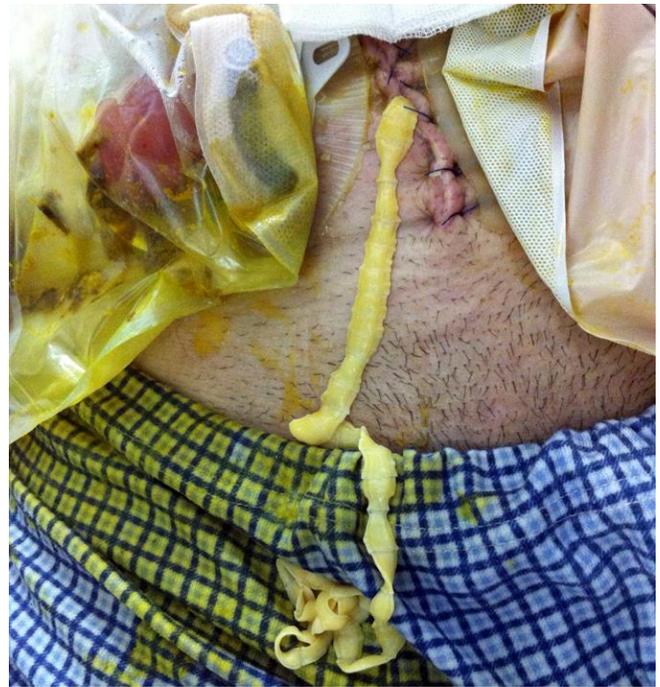
The surgical team who performed the first emergency operation declared no mobile cestode in the abdominal cavity during the procedure in postoperative investigation. Parasitological evaluation confirmed *T. saginata*, and histopathological examination revealed synchronous gastric and rectal cancer. The patient was intubated during the postoperative period, septic parameters did not improve. He underwent surgery twice for the lavage of abdominal cavity and died on POD 16 due to the underlying disease.

## Discussion And Conclusions

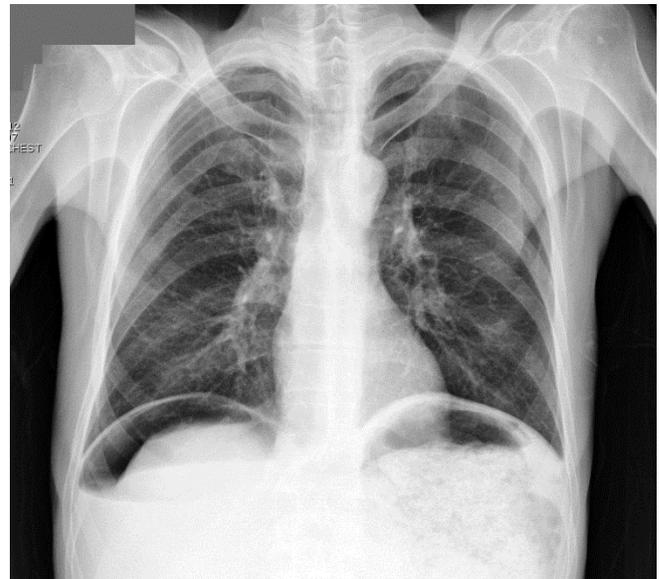
This case report is the first case describing an extraluminal manifestation of a tapeworm in a midline incision from evisceration without intestinal perforation. The cestode used an “open gate” such as relaxed purse stitch of the feeding – this has not been described in the medical literature before.

*T. saginata* infection can be asymptomatic for a long period. Symptoms like weight loss, pain in the abdomen, vomiting, nausea, constipation or diarrhea

**Figure 1.** Subdiaphragmatic free air on plain chest X-ray



**Figure 2.** Appearance of an alive *T. saginata* in a sudden abdominal evisceration



and rarely mechanical intestinal obstruction can occur [5]. Taeniasis is usually treated with praziquantel (10-20 mg/kg, single-administration) or niclosamide (2 gr single-administration). Surgery is recommended only for the treatment of complications [1].

The mortality rate in small intestinal perforation due to infection is mostly related to the primary disease of the patient and may reach up to 42 % [6].

On admission to the emergency unit, the patient was in a severe medical condition. He was in a terminal period of gastric cancer and an immunosuppressed state as a result of the chemotherapy treatment he was receiving. A fast and palliative procedure was performed with standardized steps. Unfortunately, after the removal of the tapeworm, the patients septic parameters did not resolve and his condition deteriorated.

There are a few distinct case presentations describing tapeworm infestations requiring surgery. Hakeem *et al.* [7] presented a case of gall bladder perforation in 2012. A case of colonic anastomotic leakage related to *T. saginata* infestation following a right hemicolectomy procedure was reported by Sozutek *et al.* [1] in 2011. Another report describing a rare case of *T. solium* peritonitis with multiple ileal perforations was presented by Faheem *et al* [8].

Perforation or anastomotic leakages are well known and previously described complications of taeniasis. The special feature of our case is that the only probable reason for extraluminal outflow was a “man-made orifice”, the relaxation of the purse stitch around the feeding jejunostomy, on account of no evidence for any other perforation site on bowels in secondary laparotomy.

This is an unusual clinical case of an extraluminal manifestation of a tapeworm in a midline incision from evisceration related to *T. saginata*, without prompting any intestinal perforation other than a relaxed purse stitch of the feeding tube. Although surgery is by any measure regarded as the definitive treatment for all kind of complications, more efforts focusing on preventive measures should be made.

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**Conflict of interests:** No conflict of interests is declared.