

**A CASE REPORT: TAENIA SAGINATA PRESENTING WITH INTESTINAL
OBSTRUCTION**Digvijay Singh Tanwar¹ and Ravi Verma^{2*}¹M.S Gen. Surgery, CH Kandaghat, Solan (H.P.).²M.D Paediatrics, CH Kandaghat, Solan (H.P.).***Corresponding Author: Ravi Verma**

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ABSTRACT

Small bowel obstruction (SBO) is a common gastrointestinal condition often requiring acute surgical intervention. In humans, tapeworm species can cause a parasitic infection by ingestion of raw or under cooked beef (*T. saginata*) or pork (*T. solium* and *T. asiatica*). Taeniasis usually presents with vague symptoms or mild abdominal pain and discomfort. *Taenia saginata* infection is caused by the bovine tapeworm and it can be the cause of many emergencies. We report a case of small bowel obstruction leading to due to an impacted tapeworm. The diagnosis of these rare circumstances is usually made intraoperatively.

KEYWORDS: Small Bowel Obstruction (SBO), *Taenia saginata*, bovine tapeworm.**INTRODUCTION**

Helminth infections are an important public health problem in tropical and underdeveloped countries.^[1] The adult stage of *Taenia saginata* (*T. saginata*) is one of the most common pathogenic cestode in human. This tapeworm is transmitted by eating raw beef.^[2] Infected individuals might remain asymptomatic for years, and just the symptom may be only the impulsive passage of proglottids. However, nonspecific symptoms, such as vague abdominal pain, nausea, vomiting, diarrhea, and weight loss, may be present.^[3] Although *Taenia saginata* can be found in many areas worldwide however, it is more prominent in tropical and underdeveloped countries.^[4] It is associated with poverty, poor hygiene, and poor sanitations, therefore, health education, improvement in sanitation and hygiene play important part in prevention of such condition. Taeniasis usually presents with vague symptoms or mild abdominal pain or discomfort. Symptoms can vary from less common symptoms like nausea, change in appetite, weakness or weight loss to more serious rare complications of intestinal obstruction and perforation of the gut.^[5] We are presenting a case of a male patient who presented with acute mechanical small bowel obstruction caused by *Taenia saginata* infection as one of the rare causes of bowel obstruction.

CASE REPORT

A 57-year-old male patient presented to us with complaints of pain involving the whole abdomen for 4 days with non-passage of flatus and stools for 3 days. Pain was insidious in onset, mild to moderate in intensity, generalized, continuous and gradually

progressive. He also had complaints of non-passage of flatus and stools for 3 days associated with abdominal distension and multiple episodes of bilious vomiting. There were no associated aggravating or relieving factors. There was no history of melena or previous abdominal surgery. He had no associated comorbidity. His vital parameters were within normal limits. On per abdomen examination, patient was found to be having generalized tenderness all over the abdomen along with guarding, rigidity and rebound tenderness. There was no organomegaly or palpable lump. Hyper tympanic note was present on percussion with obliterated liver dullness. Bowel sounds were absent.

Blood investigations were as follows: Hb -11.3g/dl, TLC - 9,900 mcg/L, Urea - 41 mg/dl, Creatinine - 1.16 mg/dl, Na -131 mmol/L, K - 4.3 mmol/L, Bil (T) - 1.03 mg/dl, Bil (D) - 0.51 mg/dl, ALT/AST/ALP - 67/54/86 U/L, Lipase/Amylase - 43/64 U/L.

His abdominal X-ray revealed dilated loops of small intestine with multiple air-fluid levels. CT scan of the abdomen showed large, segmental, mildly enhancing, circumferential thickening involving the distal jejunum causing moderate narrowing of lumen and dilatation of proximal small bowel, features suggestive acute small bowel obstruction secondary to foreign body.

A diagnosis of acute intestinal obstruction due to an impacted foreign body in the small bowel was made and the patient was taken to the operation theatre for exploratory laparotomy and further management.

Intraoperative findings

Lower midline laparotomy incision was given. On making an enterotomy on the distal jejunum, a large, live tapeworm was seen impacted in the distal jejunum completely obliterating the lumen, distal loops were

collapsed. Segmental resection of affected small bowel was performed with primary anastomosis after complete extraction of the parasite. Abdomen was closed after careful inspection of rest of the gut.



Post-operatively, the patient was treated with a single, oral dose of 10 mg/kg of Praziquantel.

Histopathological examination showed acute inflammation and luminal exudates accompanied by an elongated and flattened segment of the helminth. Using parasitological examinations, a large number of eggs within the mature gravid proglottids were observed. These characteristics identified that the helminth was related to the genus *Taenia* spp. Nevertheless, the eggs of both *Taenia (saginata and solium)*, are morphologically equal, but based on the number of lateral uterine branches of gravid proglottids, which *T. saginata* with 12–30, while *T. solium* with 7–13 lateral uterine branches, the species was identified as *T. saginata*.

DISCUSSION

Taenia is a tapeworm acquired by ingesting undercooked beef or pork. Taeniasis is more common in Africa,

Eastern Europe, Latin America and the Middle East. Most people with taeniasis will have no initial symptoms, however, as times goes, they will be aware of the infection as they pass proglottids in stool. Such gastric obstructive presentations are very uncommon in tapeworm infection, although enteric obstruction with subsequent gastric blockage has been previously reported. In contrast, bowel obstruction is a well-recognized complication of ascariasis.^[4]

Taenia species are common parasites that can infect humans. The two important species include the pork tapeworm or *Taenia solium* and the beef tapeworm or *Taenia saginata*. *Taenia* species found in Asia is a subspecies of *Taenia saginata* and it has been renamed as *Taenia saginata asiatica*. Taeniasis is endemic in Southeast Asia.^[5] Humans are the definitive host. Adult tapeworms live in the human small intestine. Humans pass gravid eggs in faeces; these mature eggs

contaminate pastures and barnyards, where cattle and pigs ingest them. Upon reaching the alimentary canal of infected animals, the embryos are released, penetrate the gut wall, and enter the circulation. The embryos filter from the circulation and encyst in muscular tissue. Larvae (i.e., cysticerci) become infectious within 2 – 3 months. Humans develop a tapeworm infection by eating raw or undercooked beef or pork containing cysticerci. The cysticercus becomes activated, attaches to the wall of the small intestine by the scolex, and becomes a mature tapeworm. This maturation process takes 10 - 12 weeks for *T. saginata* and 5 - 12 weeks for *T. solium*. A single tapeworm produces an average of 50,000 eggs per day and may live up to 25 years.^[6]

Examining the gravid proglottids helps identify the species; count the main uterine branches (7 - 16 branches for *T. solium*, 14 - 32 branches for *T. saginata* and 11 - 32 branches for *T. asiatica*).^[7] Examining the scolex helps differentiate the species because a *T. solium* scolex has 4 suckers and an armed rostellum and hooks but *T. saginata* scolex does not have rostellum and hook. *T. asiatica* has rostellum without a hook.^[7]

Taenia saginata causes intestinal taeniasis, manifesting as abdominal discomfort, nausea, vomiting and weight loss. Some patients complain of passage of proglottids in the stool. Adult parasite may rarely be present in the stomach and the gastric secretions.^[6] However, migrating proglottids have the tendency of causing bile duct inflammation, cholecystitis and appendicitis. Cases of intestinal small bowel perforation secondary to taeniasis have been reported in the literature. Cysticercus attaches to the wall of the small intestine by means of scoleces and becomes a mature tapeworm. Intestinal taeniasis manifests as abdominal discomfort, indigestion, nausea, diarrhea, and weight loss.^[7] Other complications include obstruction of bile ducts or pancreatic ducts, leading to cholecystitis, acute pancreatitis and granulomatous gastritis.

The diagnosis of intestinal taeniasis depends on demonstration of the typical taenia eggs in the stool.^[8,9] Mechanical obstruction of small bowel is a very rare especially in unaffected communities. This indicates that taeniasis of the gastrointestinal tract can be the cause of the most unusual complications. The diagnosis of these rare circumstances is usually made intraoperatively, and surgery is recommended only for the treatment of complications.^[9] Individuals with intestinal *Taenia* infection might be asymptomatic or present with some symptoms. Once tapeworms are detected in faeces of infected individuals, anthelmintic therapy with praziquantel or niclosamide is usually sufficient. Such treatment could prevent cases of cysticercosis.^[10] Asymptomatic cysticercosis requires no treatment.

Cases with infection might be asymptomatic due to the long incubation period which could extend up to 16 years prior to symptoms become evident.^[11]

Asymptomatic cases with cysticercosis that are undiagnosed can have adverse outcomes if they were given albendazole or praziquantel as a treatment for other conditions. This is mainly caused by an inflammatory response from the dying parasite.^[10]

CONCLUSION

Taeniasis should be considered in the differential diagnosis as the cause of an acute abdomen with unusual surgical complications. The diagnosis of these rare circumstances is usually made intraoperatively, and surgery is recommended only for the treatment of complications. The possibility of parasitic infection should be kept in mind as a very rare possible cause of bowel obstruction even in non-endemic country and a detailed history could be helpful. Medical treatment of taeniasis includes oral medicine such as praziquantel or niclosamide, although prevention is the best to avoid serious complications of infection. However, in some cases endoscopic or surgical interventions might be needed.

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