Long-term *Taenia saginata* Infection Successfully Treated with Meglumine/Diatrizoate Sodium

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**Abstract**

A 46-year-old Japanese man visited our hospital for chronic abdominal pain, persistent diarrhea and discharge of proglottids for 7 years. He had been living in Lao People’s Democratic Republic. Ileography using meglumine/diatrizoate sodium (Gastrografin) revealed a long tapeworm. A *Taenia saginata* including the scolex was excreted through the intestinal tract by the administration of total 780 ml of Gastrografin. Taeniasis is an important disease in the differential diagnosis of imported diseases in Japan. Parasite infection should be suspected in patients with chronic abdominal pain or persistent diarrhea regardless of the findings for small bowel obstruction when there is a history of overseas travel.

**Key words:** Gastrografin, imported diseases, persistent parasitic infection

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**Introduction**

*Taenia saginata* (*T. saginata*) is a tapeworm which induces human infections through cattle as intermediate hosts. Recent most Japanese patients with *Taeniasis* tend to suffer from parasite infection in an infected area in a foreign country (1). If the result of the treatment was incomplete, persistent infection can occur (2). This case report describes a patient with taeniasis who had never eaten uncooked pig viscera, suffered from persistent parasite infection, had uncomfortable symptoms for a long time and was successfully treated with meglumine/diatrizoate sodium (Gastrografin).

**Case Report**

A 46-year-old Japanese man visited our hospital for chronic abdominal pain, persistent diarrhea and discharge of proglottids (Fig. 1) for 7 years. He did not have any remarkable past history of illness and looked healthy. His body temperature was 35.6°C, blood pressure was 120/78 mmHg, and radial pulse rate was 70 beats/min and regular. He had neither anemia nor jaundice. Neurological examination revealed no abnormal findings. Abdominal palpation revealed tenderness in the right lower quadrant. Routine hematological examination and biochemical tests were within normal limits. Eosinophilia was not found in his clinical course. Examination of the stool detected no parasite ova. He had been living in Lao People’s Democratic Republic (PDR) and eating native beef. He had never eaten uncooked pig viscera including the liver. He had had treatment for parasite infection using pyrantel pamoate in times past, but this therapy had failed, since it does not work against tapeworms but rather it works against nematodes, such as *Ascaris*, etc. Plain abdominal radiography on admission showed no abnormal intestinal gas or fluid levels suggestive of bowel obstruction (Fig. 2). Ileography using 280 ml of meglumine/diatrizoate sodium (Gastrografin) revealed a long tapeworm (Fig. 3). He was treated with an additional 500 ml of Gastrografin through the duodenal tube and then the parasite was dislodged and moved into the colon (Fig. 4). After that, a *T. saginata* including the scolex was excreted through the intestinal tract (Fig. 5). His symptoms (abdominal pain, diarrhea and discharge of proglottids) were resolved after the Gastrografin administration therapy.

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Discussion

*T. saginata* infection is a common infection of both humans and cattle throughout the world, particularly in areas wherever beef is eaten. Areas of high prevalence are sub-Saharan African, southeast Asia, and the Middle East (3). Infection is associated with eating raw beef and allowing cattle on pastures fertilized by sewage sludge contaminated with human feces (4, 5). *T. saginata* infection should be distinguished from *T. asiatica* infection, because it is difficult to differentiate the two species morphologically (1, 5). In the present case, *T. asiatica* infection could be ruled out since the patient had never eaten uncooked pig viscera including the liver in Lao PDR.

Mature tapeworms have been known to live in the human gastrointestinal tract for up to 25 years (2). In the present case, the tapeworm had lived in his body for over 7 years. Symptoms are absent in most patients who carry an adult *T. saginata*. But a small number of patients have some symptoms. The main clinical feature is abdominal cramps or malaise. The proglottids of *T. saginata* are motile and very often migrate out of the anus (5) as in the present case. Nonspecific symptoms such as abdominal discomfort, epigastric pain, nausea, vomiting, diarrhea, and weight loss are known to occur (2), but these symptoms rarely occur (3).

Mature tapeworms living in the human gastrointestinal tract may lead to severe clinical problems such as obstruction of the pancreatic duct (6) or common bile duct (7, 8) by proglottid segments, bowel obstruction (9, 10) or Meckel’s diverticulitis (11). Thus, tapeworms in the human gastrointestinal tract should be removed as soon as possible.

The treatment of choice in intestinal taeniasis is praziquantel, a synthetic heterocyclic isoquinolone-pyrazine derivative (3). For successful treatment, the scolex must be de-
stroyed, and eliminated because residual scolex can result in regrowth. In the present case, jejuno-ileography using Gastrografin was performed at first to confirm parasite infection. The subsequent additional 500 ml of Gastrografin through the duodenal tube rendered the tapeworm including the scolex to be expelled. Oral Gastrografin administration is known to be a safe, convenient and useful method in resolving adhesive or partial small-bowel obstruction (including obstruction caused by parasites) (12). Gastrografin administration may be worth trying as the first therapy for treating patients with \textit{T. saginata} infection.

In recent years, tapeworm infections are not common in Japan. However, taeniasis is an important disease in the differential diagnosis of imported diseases. These observations suggest that parasite infection should be suspected in patients with chronic abdominal pain or persistent diarrhea regardless of the findings for small bowel obstruction when there is a history of overseas travel.

The authors state that they have no Conflict of Interest (COI).

References