

Disseminated Peritoneal Cysticercosis in Humans

K. Rampal¹, M. Sharma², P.S. Sandhu¹, H. Singh¹

¹Guru Gobind Singh Medical College and Hospital, India

²District Hospital Amritsar, India

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Introduction

Taeniasis is an infection of the intestines by adult tapeworms of the genus *Taenia*. Taeniasis in humans is caused by *Taenia solium*, *T. saginata* or *Taenia asiatica*. Tapeworm disease results from ingestion of pork or beef (called measly pork/beef) contaminated with larval stage of these parasites known as metacestodes. *T. solium* produces a life threatening condition called neurocysticercosis and is a potential threat to general population by ingestion of eggs released from asymptomatic *T. solium* carriers. The 2003 World Health Assembly formally announced *T. solium* to be of cosmopolitan potentially eradicable public-health importance (1). The World Health Organization (WHO) has proclaimed taeniasis/cysticercosis as one of the neglected tropical diseases (NTDs) impacting the impoverished populations worldwide (2). *Taenia saginata* that by and large causes minimal impact on health is a purely intestinal helminth. Patients housing adult *Taenia saginata* tapeworms are primarily asymptomatic and discharge fecal proglottids. (3). In south east Asia (SEA), taeniasis/cysticercosis is relatively endemic and has been listed as one of the major NTDs prevalent in the region (4). *Taenia asiatica* too has been known to be limited to the intestines. Considering the clinical importance of *Taenia solium* over other species, *Taenia solium* is the index species of clinical interest.

We discuss a case of disseminated cysticercosis in the peritoneal cavity of a young female patient.

Case Presentation

A 17 year young, vegetarian female from low socioeconomic strata presented to outpatient department with symptomatic cholelithiasis. Clinical examination was unremarkable except for the presence of pallor. Ultrasound abdomen was suggestive of uncomplicated cholelithiasis. The patient had

hemoglobin of 7.5 gm%, rest of the biochemical and hematological parameters were within normal limits. Following hemoglobin build up with iron formulations, patient was taken up for elective open cholecystectomy as per patient choice. Intraoperatively findings of the ultrasound were confirmed. In addition we observed the surface of liver, the anterior wall of stomach and the greater omentum, colon and the parietal peritoneum (the part visible through the incision) were covered with multiple fine black nodules. These nodules were interconnected with fine white fibrous tissue as is depicted in Figure 1. Biopsy of the nodules was taken sent for histopathological examination separate from the main specimen of gall bladder. Post-operative period was uneventful. Patient followed up in outpatient department with histopathological report of nodules that was suggestive of cysticercosis [Figure 2]. Patients's stool sample was examined for the evidence of adult tape worms but were reported negative. The patient was administered a single dose of tablet Praziquantel at 15mg/kg. Parasitological control protocol of two series with three fecal samples each were performed two months later. All were negative for *Taenia* eggs.

Discussion

Taeniasis in humans is an intestinal infection caused by 3 species of tapeworm: *Taenia solium*, *Taenia saginata* and *Taenia asiatica*. Taeniasis due to *T. saginata* or *T. asiatica* has

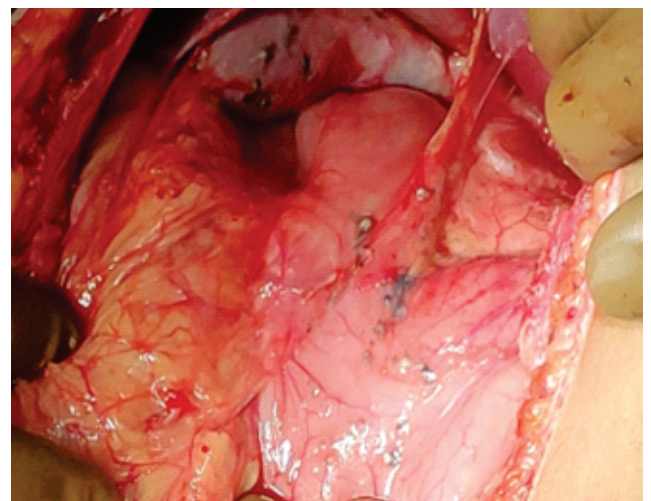


Figure 1. Intra operative picture showing disseminated cysticercosis

Correspondence: K. Rampal

E-mail: balkarankapil@gmail.com

 <https://orcid.org/0000-0003-3533-8805>

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no major deleterious effect on human health. *Taenia saginata* infection has a cosmopolitan distribution and is endemic in our part of the world. Wani et al in their study based in the rural Kashmir, reported the prevalence of this taenia to be 7.69% (5). This is attributable to consumption of undercooked beef as a prevalent dietary tradition.. *Taenia solium* larvae however can enter circulation and produce systemic cysticercosis. The larvae (cysticerci) can reach and develop in end organs like the muscles, skin, eyes and nervous system.

Ectopic locations of *Taenia saginata* cysticerci have been reported in animals. These were discovered to house cysticerci on the liver surface, enmeshed with delicate, white fiber connecting to other locations over the surface of liver. Julie Brunet et al reported peritoneal deposits of *Taenia martis* in monkeys (6).

Our intra operative findings were of similar nodules on liver surface and these nodules were interconnected with thin whitish fibers. Only one case of single lesion peritoneal cysticercosis has ever been reported and the authors too reported *Taenia martis* species through DNA studies (7). We do not have the facilities for DNA studies at our institute. *Taenia martis* species commonly infests wild rodents in the American subcontinent and few cases affecting humans have been reported. This is an extremely rare case (probably the first one) of disseminated peritoneal taeniasis.

Conclusion: Cysticercosis is a WHO recognized health issue worldwide and the disease is endemic to the Indian subcontinent. Ectopic locations for cysticercosis are being increasingly recognized. We have reviewed the disease and highlighted a case of disseminated peritoneal cysticercosis. The condition should be kept in consideration in cases with finding of these lesions during laparotomy and laparoscopic procedures, and biopsy should be obtained.

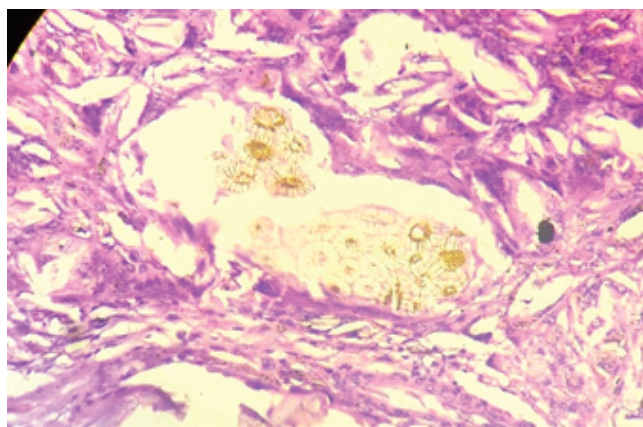


Figure 2. Microscopic view of the cysticerci

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Learning Points:

- Teanisis is a WHO recognized neglected tropical disease.
- Ectopic locations of cysticerci are being increasingly diagnosed.
- While performing laparotomy and laparoscopy keep an eye for abnormal morphological findings.
- Abnormal unrecognized lesions incidentally discovered during laparotomy/ laparoscopy, need to be biopsied.