



Case Report

## Appendicular Taeniasis Presenting as Acute Appendicitis a Report of Two Cases with Review of Literature

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### ABSTRACT

Occurrence of taeniasis species in cecal appendix is rare. There have been only isolated clinical case reports during past thirty years. Here we report two cases of acute appendicitis due to appendicular taeniasis.

**Key words:** Appendicitis, Taenia, Histopathology

### INTRODUCTION

Parasitic infestations are still important health problems in developing countries like India.<sup>[1]</sup> Sometimes appendix may be involved in worm infestations, however taenia infestation of appendix is rare.<sup>[1]</sup> The present report reinforces the importance to recognize parasitic infestations in the differential diagnosis of acute distress, because the clinical management of these infestations is different from that for appendicitis.<sup>[1]</sup>

Taenia saginata and solium are cyclophyllidean tape worms, which spend their adult stage in human intestine. Cattle and pigs are intermediate hosts respectively and contain cysticercus larvae.<sup>[2,4]</sup> The gravid proglottidis or their eggs lodge in the appendiceal lumen.<sup>[2]</sup> They may initiate appendicitis.<sup>[2]</sup> Human infestation occurs when raw or undercooked beef or pork is eaten.<sup>[2]</sup> Irritation in intestine, abdominal

pain, diarrhea sometimes accompanied by fever and eosinophilia are the most common findings.<sup>[3]</sup> We report two cases of appendicitis caused by taenia species in this article. Histological data and description of eggs of taenia found in the appendicular lumen and wall are presented.

### CASE REPORT

**Case -1:** A 44 year old male presented with vomiting and pain in abdomen since three days.

Per -abdominal examination: Revealed tenderness and guarding in right iliac fossa. Ultrasound examination of abdomen and pelvis: Suggestive of inflamed appendix. Intra-operative findings: showed swollen inflamed appendix. Appendectomy was performed and the appendix was sent for histopathological examination.

**Histopathological Findings: Gross-** We received appendix of length seven

centimeter, swollen, congested with lumen blocked and tip intact. (Figure 1)

**Microscopic examination:** showed ulcerated mucosa. Lumen, mucosa

submucosa, muscle coat and serosa showed plenty of eggs of taenia, along with inflammatory exudates comprising of eosinophils and few polymorphs. (Figure 3)

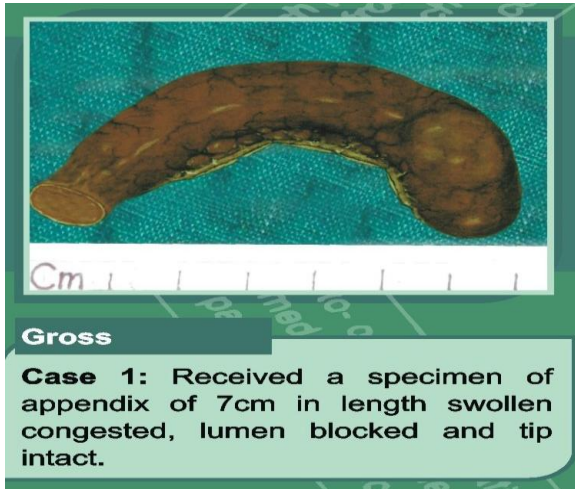


Figure. 1. Case 1.

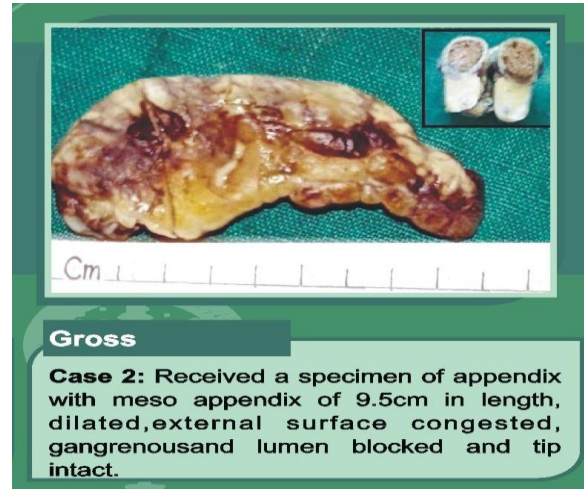


Figure. 2. Case 2.

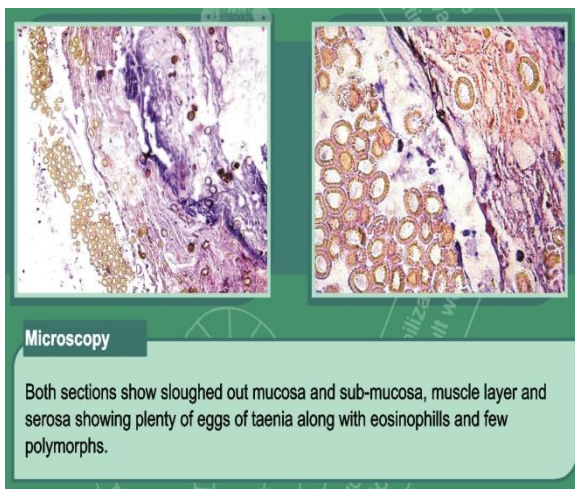


Figure. 3.

**Case 2:** 30 years old female presented with severe colicky, continuous pain in peri-umbilical region shifted to right iliac fossa since two days. She also had high grade fever for 4 days.

Per –abdominal examination: Revealed tenderness and guarding in right iliac fossa. Ultrasound examination of abdomen and pelvis: Suggestive of inflamed appendix

Intraoperative findings –showed evidence of gangrenous appendicitis with serropurulent collection of 20 ml in the appendicular bed. Appendectomy was performed and the appendix was sent for histopathological examination.

**Histopathological examination: Gross-** We received appendix of nine and half centimeter in length with mesoappendix. External surface congested, gangrenous. Lumen blocked and tip intact. (Figure 2)

**Microscopic examination:** Showed sloughed out mucosa. Lumen, mucosa submucosa, muscle coat and serosa showed plenty of eggs of taenia, along with inflammatory exudates comprising of eosinophils and few polymorphs.(Figure 3)

Eggs found in both the appendices were subspherical with radially striated shell. Inside each shell there was an embryonated oncospere with six hooks. These characteristics allowed us to conclude that the helminthes were the species of genus taenia. Eggs of taenia species are indistinguishable morphologically, so it was

not possible to determine if the species infesting appendix was taenia saginata or solium. Specific species identification is not required for the treatment.

Follow up- Both the cases received praziquantal and discharged after 7 days postoperatively. And postoperative recovery was uneventful.

## DISCUSSION

Parasitosis is common public health problem in developing countries like India.<sup>[5]</sup> Intraluminal parasite within the resected specimen of appendix is generally an incidental finding.

In our set up we reported two cases of appendicular taeniasis presenting as acute appendicitis which is very rare.

Taeniasis is very rare and interesting cause of acute appendicitis. In the study of S.C.Gupta et al over a period of 25 years, 75(2.5%) out of 2921 appendicectomy specimens were found to have parasitic infestation of appendix. Enterobius vermicularis was found in 41(55%) cases, Ascaris lumbricoides was found in 13(17%) cases, Ascaris with trichura in 2(3%) cases, Entamoeba histolytica in 17(23%) cases and Taenia in 2(3%) cases.<sup>[4]</sup>

In the study of Danielle Fernandes da Silva et al: 24(1.5%) out of 1600 appendicectomy specimens were found to have helminthes within appendix. Enterobius vermicularis was observed in 23 of 24 specimens (95.8%) and Taenia species was detected in only one (4.2%) case. All these patients presented with clinical manifestations of acute appendicitis.<sup>[5]</sup>

Similarly, in the study of Ozgur Aydin, over a period of 6 years, out of 190 appendicectomy 6 specimens had parasitic infestations, 4 had Enterobius vermicularis and 2 had Taenia. All these appendices showed both macroscopic and microscopic evidence of acute inflammation.<sup>[6]</sup>

In the study, among 2,379 surgically resected appendices in Isfahan Medical University Teaching Hospital, between 1993-2002, two cases of appendicular taeniasis were found. Both patients were appendicular taeniasis were found. Both patients were inhabitants of Isfahan where *T.saginata* is endemic. In one case, both eggs and proglottids were present in the lumen of a perforated appendix and the tissue reaction was acute gangrenous appendicitis. In the second case was an appendix with normal reactive follicular hyperplasia, with the lumen of the appendix infested with the eggs of Taenia.<sup>[2]</sup>

Sarratorelli et al reported one case and Lejbkowicz et al reported 2 cases of appendicular taeniasis presenting as acute appendicitis.

Amongst all these studies it was observed that Enterobius vermicularis is the commonest worm found in appendix and Taenia is very rare cause of acute appendicitis as compared to other worms associated with appendicitis as reported in literature which are Ascaris lumbricoides, Entamoeba histolytica, Trichuris spp.<sup>[5,6]</sup>

Taeniasis is well known worm infestation, characterized by the presence of helminthes in the human intestine, Infection occurs frequently in the individuals who eat undercooked beef and pork. Most cases of infection do not cause any symptoms, while others may produce abdominal pain, weight loss, and digestive disturbances. Infection is generally recognized when the segments of the parasite appear in the stool or exit through the anus. The occurrence of taenia species in cecal appendix is so rare that situation invites case report.<sup>[6]</sup>

We have seen invasion of the mucosa by eggs of taenia in both cases. This morphological feature may be a key factor triggering the inflammatory process.<sup>[5]</sup>

An appendiceal colic caused by parasitic infestation cannot be differentiated from the right lower quadrant pain of of

usual acute appendicitis.<sup>[5]</sup> There routine histopathological examination of resected appendix is essential to diagnose important and treatable condition.<sup>[6]</sup>

Taenia is rarely found in the appendix and the exact frequency of this atypical presentation of parasite is not known.<sup>[5]</sup> Timely appropriate therapy would prevent invasive procedure to solve the problem, because pharmacological eradication with anthelmintic drug is necessary to solve basic pathologic process.<sup>[5]</sup>

### CONCLUSION

The present report reinforces the importance to recognize parasitic infestation in the differential diagnosis of acute abdominal distress because clinical management of these infestations is different from that of for appendicitis.

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