

## Taenia Solium Sneezed out from Nose by an Asymptomatic Child

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### ABSTRACT

*Taenia solium* is an intestinal parasite and may be excreted in feces in infected patients but our case is unique, as an asymptomatic child sneezed out the proglottids of the parasite from his nose. After the full course of antihelminthic drug the patient excreted a whole worm in his stool.

**Keywords:** Antihelminthic drug; asymptomatic; *Taenia solium*; taeniasis.

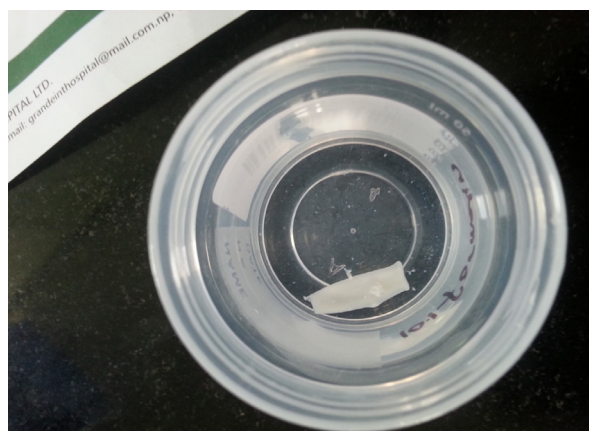
### INTRODUCTION

Taeniasis caused by *T. solium* is a zoonotic disease endemic in many underdeveloped countries. It is a neglected parasitic zoonosis associated with eating raw or undercooked pork.<sup>1</sup> In the life cycle of the parasite, humans are sole definitive hosts and pigs are main intermediate hosts. In most of the cases taeniasis is asymptomatic but in severe cases gastrointestinal disturbance, headache, weight loss, dizziness and loss of appetite are the common symptoms.<sup>2,3</sup> In Nepal, we are aware of very few researches done on the prevalence of the taeniasis. The country where the eating of pork is common among certain ethnic groups, the prevalence of taeniasis may be alarming. Here we report a case of taeniasis in which an asymptomatic child sneezed out the pieces of the worm. *T. solium* is an intestinal parasite and it is common to excrete the whole adult worm or the proglottids or the eggs of the worm in feces but sneezing out of the proglottids of the worm from the nose is a very rare event and makes the case interesting.

### CASE REPORT

A 5-year apparently healthy male was brought to a hospital in Kathmandu, Nepal in August 2015 with the complaint that the child sneezed out two white and flat pieces of worm. One piece of the worm was sent to the department of microbiology for identification. The patient was resident of Lalitpur district of Kathmandu valley and had no symptoms of the worm infestation. He

had the history of eating pork. The piece of the worm was 0.5 cm × 1.5 cm in size (Figure 1).



**Figure 1.** Proglottid of *T. solium* sneezed out from nose by the patient.

On squeezing the piece of the worm on the glass slide and on observing under microscope, spherical eggs with 31 to 43 micrometers in diameter with oncosphere of size 14 to 20 micrometers with three pairs of hooklets were seen. So on the basis of the ova seen and the morphology of the piece of the worm, it was identified as gravid proglottid of *Taenia* spp. To identify the *Taenia* spp. up to species level the segment was stained with hematoxylin and eosin stain and the branches of the uterus were counted. There was a central longitudinal stem of the uterus with less than 10 lateral branches (Figure 2).

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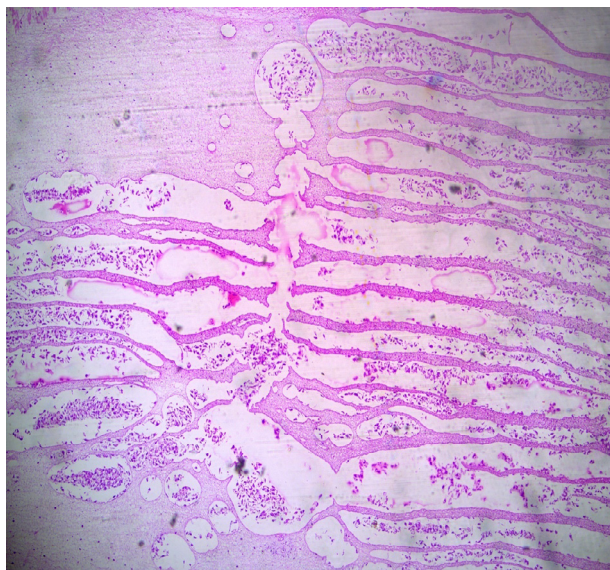


Figure 2. Hematoxylin and Eosin stain of the *T. solium* showing branched uterus.

So the proglottid was identified to be that of *T. solium*. To diagnose the presence of gastro intestinal infection by the *T. solium* the fresh stool samples from the patient and the other family members were examined for the ova or the worm but none were positive. After the patient was given a course of albendazole he excreted a white, flat, segmented worm of around 0.5 cm × 1 meter in his stool (Figure 3).



Figure3. *T. solium* excreted by the patient in feces.

The worm contained gravid proglottids. The scolex may have detached from the body of worm and was missing. The worm was stained with hematoxylin and eosin stain. On the basis of the morphology of the worm and the staining the worm was identified as *T. solium*.

## DISCUSSION

Taeniasis due to *T. solium* occurs after eating undercooked or raw pork that contains the larvae.<sup>4</sup> In this case also the patient had a history of eating pork. So the patient may have got the infection due to eating of raw or undercooked pork. The incidence of the taeniasis may be high in countries like Nepal where the eating of pork is common among certain ethnic groups.<sup>5</sup> The most of the cases of taeniasis are asymptomatic and it is diagnosed when the worm is passed in stool.<sup>3</sup> In present case also the patient was asymptomatic but it was interesting that the patient first sneezed the proglottids of the worm out from his nose rather than excreting them in feces and later after a complete course of albendazole he excreted the worm in his stool. The segments of *T. solium* might have reached the parts of digestive tract near to mouth due to reverse peristalsis and might have been expelled accidentally through nose instead of mouth.

The important strategies for control of taenia sis is avoiding eating of pork or eating it only after well cooking and mass deworming in endemic areas.<sup>3,6</sup> Further the campaign to educate the pig breeders for hygienic feeding of pigs (not letting the pigs to feed in human excreta or any other things from which it is high chance to get infection), butchers for hygienic slaughtering of pigs, cooks for proper cooking of pork, food stand workers for hygienic handling and the general population for eating only properly cooked pork may be very helpful in controlling of the taeniasis due to *T. solium*.<sup>7</sup>

## CONCLUSIONS

Most of the cases of taeniasis due to *T. solium* are asymptomatic and generally diagnosed when the worm is excreted in feces. But in rare event it may be sneezed out from nose. Even in case of the asymptomatic infection, antihelminthic drug should be taken to kill any worm presenting in the body to avoid any possible future illnesses.

## ACKNOWLEDGEMENTS

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## REFERENCES

1. Mwape KE, Phiri IK, Praet N, Muma JB, Zulu G, Van den Bossche P, et al. Taenia solium Infections in a rural area of Eastern Zambia-a community based study. PLoS Negl Trop

- Dis. 2012;6(3):e1594.
2. Coral-Almeida M, Rodríguez-Hidalgo R, Celi-Eraza M, García HH, Rodríguez S, Devleeschauwer B, et al. Incidence of human *Taenia solium* larval infections in an Ecuadorian endemic area: implications for disease burden assessment and control. *PLoS Negl Trop Dis*. 2014;8(5):e2887.
  3. García HH, Del Brutto OH. *Taenia solium*: biological characteristics and life cycle. *Cysticercosis of the Human Nervous System*. Berlin: Springer-Verlag Berlin and Heidelberg GmbH & Co. KG.; 2014. P. 11–21.
  4. Malik NP, Singh A, Sharma VK, Sharma VK. Role of fine needle aspiration cytology in diagnosis of subcutaneous cysticercosis: a report of 66 cases. *Int J Pharm Bio Sci*. 2013;4(4):(B)861–6.
  5. Sah RB, Pokharel PK, Paudel IS, Acharya A, Jha N, Bhattarai S. A study of prevalence of *Taenia infestation* and associated risk factors among the school children of Dharan. *Kathmandu Univ Med J*. 2012;10(39):14-7.
  6. García HH, Gonzalez AE, Evans CA, Gilman RH. Cysticercosis Working Group in Peru. *Taenia solium* cysticercosis. *The Lancet*. 2003;362(9383):547-56.
  7. Flisser A, Correa D. Neurocysticercosis may no longer be a public health problem in Mexico. *PLoS Negl Trop Dis*. 2010;4(12):e831.