Tapeworm infection identified on capsule endoscopy

Shao-Qi Yang, Rui Huang, Li-Na Zhang, Jian-Guo Hu, Li Yang

Department of Gastroenterology, the General Hospital of Ningxia Medical University, Yinchuan, China

Key words: tapeworm infection, capsule endoscopy, diarrhea

Abbreviations: CE, capsule endoscopy

Case report

A 59-year-old Chinese man was admitted because of worsening diarrhea. Physical examination was unremarkable, blood tests showed a low serum potassium of 2.8 mmol/L (normal 3.6-5.5 mmol/L), other laboratory tests were normal. Repeated stool tests and abdominal CT were normal. Upper endoscopy and colonoscopy were negative. Stool studies showed no ova or parasites. He was given oral Smectite Powder for two weeks without improvement. A capsule endoscopy (CE) (Pillcam SB, Given Imaging Ltd, Israel) was performed to further evaluate the cause of the diarrhea.

Findings at CE revealed a tapeworm in the small intestine (**Fig. 1**). Because of local customs where the patient does not consume any porcine products in his diet, it was presumed to be *Taenia saginata*. The patient was treated with a single dose of 400mg of albendazole¹ and potassium citrate granules. The tapeworm was noted to be discharged after 3 days. Unfortunately, further stool studies were not available to confirm final clearance of the infestation. The patient recovered after two weeks and the serum potassium returned to normal.

Discussion

An estimate of 50 million people worldwide are infested with either *Taenia saginatum*, the beef tapeworm, or *Taenia solium*, the pork tapeworm.² Certain parts of China including Xinjiang, Inner Mongolia, Tibet and Ningxia are endemic with the beef tapeworm infestation. The rate of beef tapeworm infection was as high as 70% because of consumption of undercooked beef which contained cysticerci.³ Multiple regression analysis showed that age, nationality, non compliance with medication, contaminated water and eating raw liver are the main risk factors for tapeworm infestation.⁴

The common clinical manifestations of taeniasis included mild abdominal pain, nausea, change in appetite⁵, and iron deficiency anemia⁶. Diarrhea is an uncommon manifestation of tapeworm

Figure 1. Capsule Endoscopy images showing typical strobila of *Taenia* species with proglottids within the small bowel lumen

infestation. Most patients remain asymptomatic. The diagnosis of tapeworm infestation is normally based on the microscopic examination of feces and identifying the eggs or proglottids of the tapeworm. In our case, stool microscopy failed to identify any eggs but Capsule Endoscopy provided the possible diagnosis but the mechanism remains unclear. Possible explanation may include intestinal damage and abnormal gut motility. Taeniasis should be considered a possible cause of diarrhea in endemic areas.

References

1. Keiser J, Utzinger J. Efficacy of current drugs against soil transmitted helminth infections: systematic review and meta analysis. *JAMA* 2008; 299:1937-48.
2. Schantz PM. Tapeworms (cestodiasis). *Gastroenterol Clin North Am* 1996; 25:637-53.
3. Guo J, Zhang H, Guo JJ. A case report of taenia infestation by having raw beef. *J Qiqihar Med College*, 2002, 23:240.
4. Sun XD, ZhangZX, DU ZW. Analysis on risk factors of taeniasis in inhabited areas of pumi minority. *Chin J Public Health* 2005; 21:316-7.
5. White AC Jr, Weller PE, Braunwald E, et al. *Harrison's principles of internal medicine*. 16th ed. NewYork: McGraw Hill; 2005. 1272-7.
6. Barnett K, Emden P, Day AS, Selby WS. Tapeworm infestation: a cause of iron deficiency anemia shown by capsule endoscopy. *Gastrointest Endosc* 2007; 66:625-7.

*Correspondence to: Shao-Qi Yang; Email: shaoqinyh@163.com
Submitted: Nov/19/2011; Revised: Nov/26/2011; Accepted: Dec/27/2011
Previously published online: www.landesbioscience.com/journals/jig
DOI: 10.4161/jig.20129