



## Document heading

## A rare case of hepatic cysticercosis

Vishwanath Sathyanarayanan<sup>1\*</sup>, Charudutt Sambhaji<sup>2</sup>, Kavitha Saravu<sup>1</sup>, Abdul Razak<sup>1</sup>, Ashwin Polnaya<sup>2</sup>, Rao SN<sup>3</sup><sup>1</sup>Department of Internal Medicine, Kasturba Medical College, Manipal, Manipal University, Karnataka, India<sup>2</sup>Department of Radiodiagnosis and Imaging, Kasturba Medical College, Manipal, Manipal University, Karnataka, India<sup>3</sup>Department of Neurology, Kasturba Medical College, Manipal, Manipal University, Karnataka, India

## ARTICLE INFO

## Article history:

Received 8 July 2011

Received in revised form 17 August 2011

Accepted 1 September 2011

Available online 10 September 2011

## Keywords:

Cysticercosis

Hepatic

Ultrasound

Scolices

## ABSTRACT

Human cysticercosis is an infection with the larval stage of *Taenia solium* and is commonly seen in developing countries. It usually involves the central nervous system but other organs like the heart, skeletal muscle and the orbit can also be involved. Rarely, the liver can also be the site of involvement. We report a case of a 25-year-old male with no premorbid illness but with a history of headache and vomiting. His physical and laboratory examinations suggested a diagnosis of tubercular meningitis. However, the high resolution ultrasound imaging of his abdomen showed that there were multiple cysticerci with scolices. IgG of cysticercosis detected by ELISA was also strongly positive, which supported the diagnosis of hepatic cysticercosis. He was managed with albendazole. This kind of cases has only been reported twice before in medical literature. It highlights the need to use high resolution ultrasonography in patients with a high index of suspicion of hepatic cysticercosis because of its occult presentation.

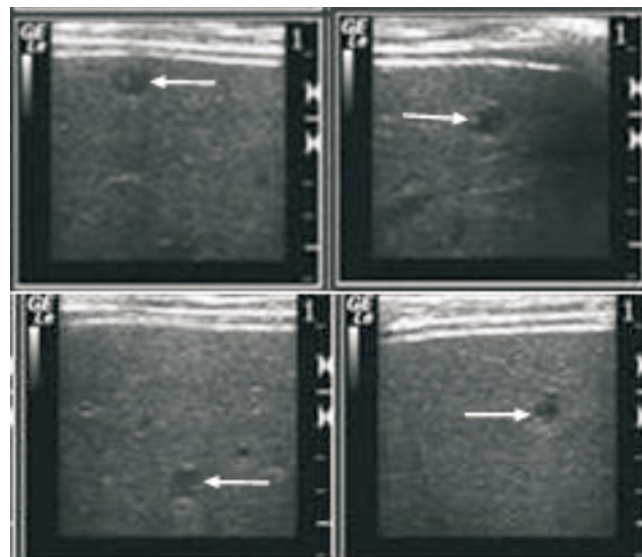
## 1. Introduction

Hepatic cysticercosis is rare and has been reported only twice before in medical literature. Hence we report this case which was incidentally diagnosed on a high resolution ultrasound of the right upper quadrant of the abdomen.

## 2. Case report

Hepatic cysticercosis is extremely rare and thus it is of clinical importance for us to report it. A 25-year-old male presented with headache and vomiting for 2 months. Physical examination showed that there were no remarkable symptoms except for hepatomegaly (liver span 16 cm) and neck stiffness. Laboratory examination revealed high ESR (57 mm at the end of one hour) and peripheral eosinophilia (800 cells/cumm). Renal function tests were normal and liver function tests showed elevated alkaline phosphatase (244 IU). CSF analysis showed elevated protein (229 mg/dL) and reduced glucose (35 mg/dL) with lymphocytosis and high CSF adenosine deaminase (ADA). A diagnosis of tubercular meningitis was firstly considered and

antitubercular therapy was carried out. In view of high alkaline phosphatase, a right upper quadrant ultrasound was performed, which incidentally revealed multiple cystic lesions with scolices inside the cysts (Figure 1 and 2). IgG of cysticercosis detected by ELISA was strongly positive, which also supported the diagnosis of hepatic cysticercosis. This patient was then managed with albendazole therapy.

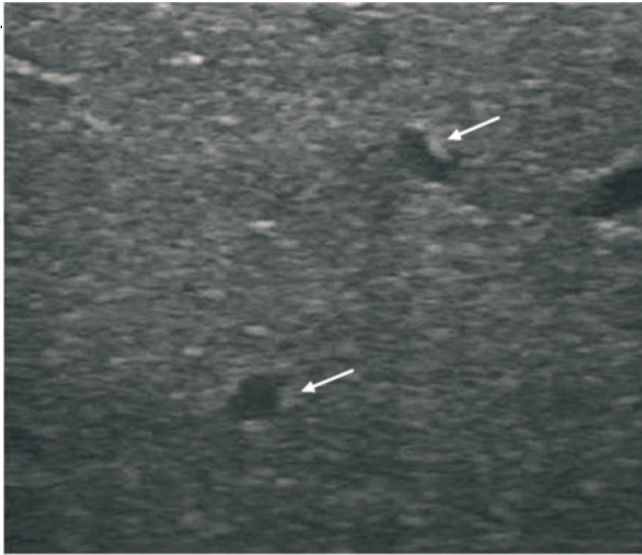


**Figure 1.** Ultrasonography of right upper quadrant of abdomen showing multiple cystic lesions with scolices (arrow) inside the cysts.

\*Corresponding author: Vishwanath Sathyanarayanan, #17, OPD Block, Department of Internal Medicine, Kasturba Medical College, Manipal, Manipal University, Karnataka, India.

Tel: +91-9008417949

Email: docvishu@gmail.com



**Figure 2.** Ultrasonography of right upper quadrant of abdomen showing multiple cystic lesions with eccentrically located scolices inside the cysts.

### 3. Discussion

Cysticercosis is an infection with the larval (cysticercus) stage of *Taenia solium*<sup>[1–4]</sup>. It is seen as cysts more commonly in the brain, muscle, heart and the orbit<sup>[1,5–7]</sup>. It is a major public health hazard in developing countries<sup>[1,8–11]</sup>. Hepatic cysticercosis has only been reported twice in medical literature. It was in a 62-year-old male with colonic adenocarcinoma and in a 9-year-old girl<sup>[12,13]</sup>. Our patient had a tubercular meningitis and the high resolution of right upper quadrant ultrasound of the abdomen incidentally showed multiple cystic lesions with hyperechoic scolices suggestive of cysticercosis<sup>[1,14,15]</sup>. High-resolution sonography, being noninvasive and nonionizing, plays an important role in establishing the diagnosis for patients with cysticercosis especially in the muscle and liver<sup>[1,14,16]</sup>. IgG ELISA for detection of cysticerci has a sensitivity of 80% and specificity of 94%<sup>[17]</sup>. Our patient had a positive ELISA test for cysticerci. The diagnosis of cysticercosis can be confirmed by fine-needle aspiration cytology (FNAC) or biopsy, which shows the detached hooklets, scolex, and fragments of the spiral wall of *Cysticercosis cellulosae*<sup>[16,18]</sup>. Medical treatment with praziquantel or albendazole which are anti-helminthic has been recommended for neurocysticercosis and subcutaneous cysticercosis<sup>[1,19,20]</sup>. Our patient also received albendazole therapy.

### Conflict of interest statement

We declare that we have no conflict of interest.

### References

- [1] Mittal A, Gupta S, Mehta V. Subcutaneous and intramuscular cysticercosis: high-resolution sonography. *Indian J Dermatol Venereol Leprol* 2009; **75**: 515–516.
- [2] Craig P, Ito A. Intestinal cestodes. *Curr Opin Infect Dis* 2007; **20**(5): 524–532.
- [3] Gonzalez AE, Evans CA, Gilman RH. *Taenia solium* cysticercosis. *Lancet* 2003; **362**: 547–556.
- [4] King CH. Cestodes (tapeworms). In: Mandell GL. (ed.) *Principles and practice of infectious diseases*. 6th ed. Philadelphia: Elsevier Churchill Livingstone; 2005, p. 3289.
- [5] Kraft R. Cysticercosis: an emerging parasitic disease. *Am Fam Physician* 2007; **76**: 91–96.
- [6] Smiti S, Sripathi H, Naik L. Unusual location of cysticercus lesions in soft tissue—report of three cases. *Indian J Radiol Imaging* 2003; **13**: 157–158.
- [7] Mamere AE, Muglia VF, Simão GN, Belucci AD, Carlos dos Santos A, Trad CS, et al. Disseminated cysticercosis with pulmonary involvement. *J Thorac Imaging* 2004; **19**: 109–111.
- [8] Bhalla A, Sood A, Sachdev A, Varma V. Disseminated cysticercosis: a case report and review of the literature. *J Med Case Reports* 2008; **2**: 137.
- [9] Smiti S, Sripathi H, Naik L. Unusual location of cysticercus lesions in soft tissue—report of three cases. *Indian J Radiol Imaging* 2003; **13**: 157–158.
- [10] Murray PR, Rosenthal KS, Pfaller MA. Cestodes. In: Murray PR. (ed.) *Medical microbiology*. 5th ed. USA: Elsevier Mosby; 2005, p. 908.
- [11] Mahmood SA, Thomas JA. Host parasite relationship in human cysticercosis. *Indian J Med Res* 1984; **80**: 532–540.
- [12] Figurnov VA, Churin AN, Lenshin AV, Grigorenko AA, Churina SA, Figurnova EV, et al. A case of isolated hepatic cysticercosis in a nine-year-old girl. *Med Parazitol (Mosk)* 2002; (1): 56–57.
- [13] Sickel JZ, Fultz PJ, Penwarden B, Laczin J. Hepatic cysticercosis. Report of an unusual case. *J Clin Gastroenterol* 1995; **20**(2): 160–163.
- [14] Vijayaraghvan SB. Sonographic appearances in cysticercosis. *J Ultrasound Med* 2004; **23**: 423–427.
- [15] Asrani A, Morani A. Primary sonographic diagnosis of disseminated muscular cysticercosis. *J Ultrasound Med* 2004; **23**: 1245–1248.
- [16] Deepti N, Srinath MG, Kumar A. Soft tissue cysticercosis—ultrasonographic spectrum of the disease. *Indian J Radiol Imaging* 2011; **21**: 60–62.
- [17] Prabhakaran V, Rajshekhar V, Murrell KD, Oommen A. *Taenia solium* metacystode glycoproteins as diagnostic antigens for solitary cysticercus granuloma in Indian patients. *Trans R Soc Trop Med Hyg* 2004; **98**: 478–484.
- [18] Arora VK, Gupta K, Singh N, Bhatia A. Cytomorphologic panorama of cysticercosis on fine needle aspiration. A review of 298 cases. *Acta Cytol* 1994; **38**: 377–380.
- [19] Garcia HH, Gonzalez AE, Gilman RH. Diagnosis, treatment and control of *Taenia solium* cysticercosis. *Curr Opin Infect Dis* 2003; **16**(5): 411–419.
- [20] Garcia L, Bruckner D. *Diagnostic medical parasitology*. 3rd ed. Washington DC: ASM Press; 1997.