ISOLATED CYSTICERCOSIS OF INTERNAL OBLIQUE MUSCLE: A RARE CAUSE OF ABDOMINAL WALL PSEUDOTUMOR

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ABSTRACT

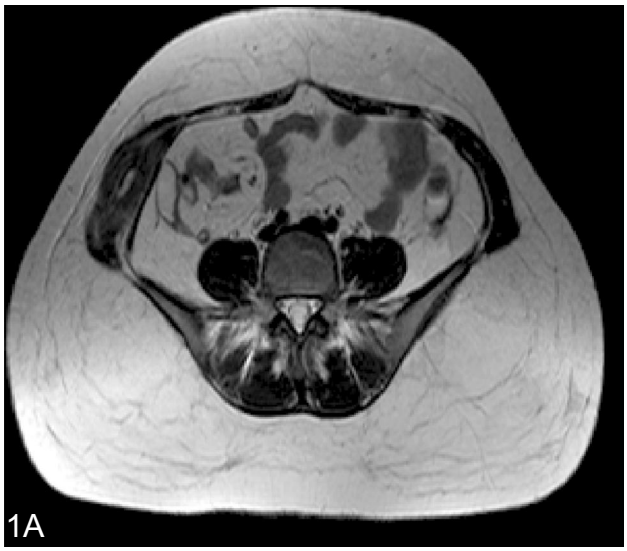
Isolated cysticercosis of muscle is very rare and may mimic a tumour due to its non-specific clinical presentation. We report a case of 25 year old female presenting with gradually enlarging lump in abdominal wall. Clinically the diagnosis of abdominal wall desmoids was strongly considered. MRI and ultrasound, however demonstrated fusiform enlargement of muscle with a small cystic lesion in it. High resolution ultrasound revealed an echogenic scolex, a characteristic feature of cysticercosis and the patient had excellent clinical response to albendazole.
Keywords: Cysticercosis; ultrasound; MRI; pseudotumor.

Introduction

Cysticercosis is a disease caused by *cysticercus cellulosae*, the larval form of tapeworm, *Taenia solium*. Cysticercosis is endemic in most of the developing countries like Brazil, Mexico, Korea and South Asian countries.[1] The parasite has a strong predilection to involve central nervous system (CNS). Solitary muscular and soft tissue involvement without central nervous system involvement is rare and often presents a diagnostic challenge. Imaging plays an important role in establishing the diagnosis by demonstrating a scolex on MRI and/or ultrasound. Herein we report a case of an isolated intramuscular cysticercosis of anterior abdominal wall diagnosed by MRI and high resolution ultrasound (HRUS).

Case Report

25-year-old female presented with a history of gradually progressive lump in the right lumbar region for 4 month. On physical examination, an oval 5 cm mass was palpable which was firm, slightly tender and fixed to the abdominal wall. The skin overlying the swelling was normal. There was no history of fever or trauma. MRI was performed and revealed a fusiform enlargement with increase signal intensity of right internal oblique muscle with a small cystic lesion centrally located within it on T2W axial and coronal image (Fig. 1A and 1B). Post contrast image shows mild enhancement of muscle (Fig. 1C).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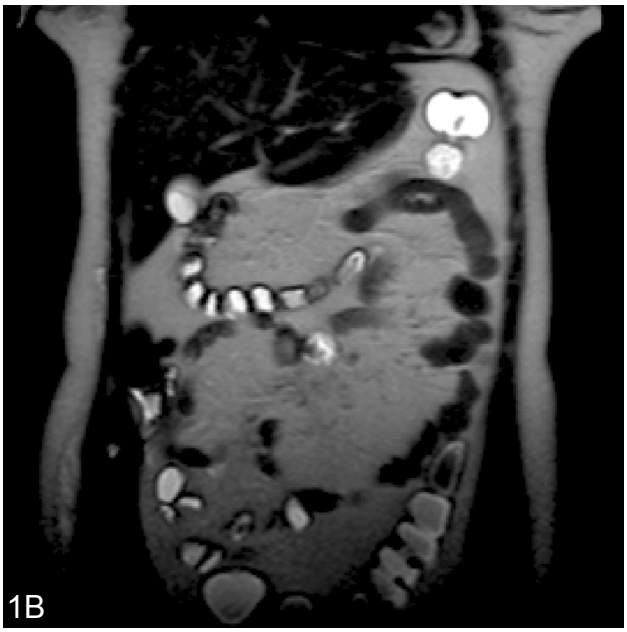

Figure 1A and 1B: T2-weighted axial and coronal MRI of anterior abdominal wall shows a well defined oval hyperintense lesion within right internal oblique muscle. Surrounding edema is noted as hyperintensity and fusiform enlargement of muscle.

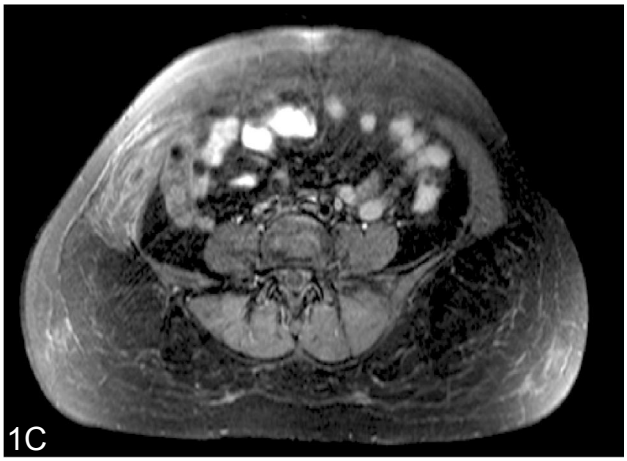

Figure 1C: Post contrast T1-weighted fat-saturated MRI shows hypointense lesion with inflammation in internal oblique muscle.

On HRUS, a small cyst of size 6.5 mm containing an echogenic nidus was seen in the right internal oblique muscle (Fig. 2). Based on ultrasound and MRI findings, a diagnosis of intramuscular cysticercosis was made. Extensive search was made to exclude disease at other site. Further investigation with screening cerebral MRI did not revealed any evidence of cysticercosis. None of her family member had any history of cysticercal infection.

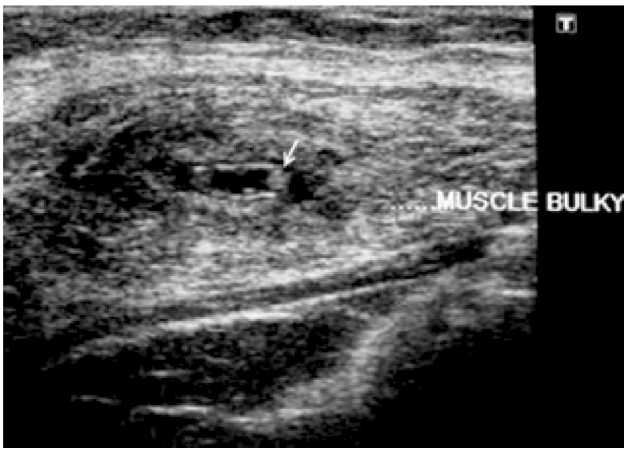

Figure 2: High resolution ultrasound shows a cystic lesion containing a scolex (arrow). Note adjacent bulky muscle.

FNAC or biopsy was not performed and empirical treatment with albendazole along with steroids was started. Marked clinical improvement with decrease in size of swelling was noted on regular follow up. She was completely asymptomatic at follow-up after 5 months.

Discussion

Taenia solium is a common parasite of human and endemic in most tropical and subtropical developing countries.[1] Man is the definitive host and acquires the infection from eating raw pork that has been infected with the larvae. Pigs act as an intermediate hosts and ingest eggs in human feces. It is commonly transmitted by consumption of raw or undercooked beef or pork, water or vegetables contaminated with *Taenia* eggs.[2] The parasite has a strong predilection to involve central nervous system. However, less frequently cysticerci may localize in the soft tissue, muscles and orbit. Muscle infestation is usually associated with CNS involvement or with multiple cysts or both.[3] However, sporadic cases of isolated muscle mass have been reported in literature without involvement of central nervous system.[4,5] A solitary cysticercus lesion is usually clinically confused with other intramuscular tumors like lipoma, neuroma, neurofibroma, sarcomas, and soft tissue myxoma. In addition, abdominal wall involvement mimics hernia, tumour like desmoids and endometriosis. Patient presenting with a solitary intramuscular lesion without CNS involvement, like in our case often pose with diagnostic difficulties owing to lack of specific clinical features.

Serological test for the detection of specific anticysticercal antibodies in serum has low sensitivity for solitary cyst. FNAC or excisional biopsy provides most definitive diagnosis by demonstrating scolex.[4]

Imaging plays a crucial role in establishing the diagnosis and the appearance of cysticercosis correlates with the stage of maturation of the disease. USG and MRI are quite helpful in establishing accurate diagnosis due to characteristic imaging appearances of intramuscular cysticercal lesions. Computed tomography (CT) is good for depicting small calci-fication. However, MRI is better than CT in detecting and evaluating the stage of cysticercosis due to superior contrast resolution.

Viable cysticerci compress the adjacent structure but do not produce inflammatory response and appear as a fluid-filled cyst without peripheral enhancement on MRI. When they degenerate, leakage of fluid cause inflammatory response and manifest as peripherally enhancing cystic lesions associated with varying degree edema on post contrast image.[5,6] On high resolution sonography, the lesion is seen as a well-defined round or oval cystic lesion with an eccentric echogenic nidus representing scolex.[7] Plain radiograph does not show the live cysticerci in muscle, but shows final calcified stage as multiple elongated foci of calcification along the direction of muscle fibres.

Scolices, one of the characteristic features of cysticercal cysts are more easily appreciated on ultrasound than on MR images.[7] However, MRI is more useful for demonstrating anatomical relationship with important structures, especially before excisional biopsy. A combination of MRI and ultrasound is useful in establishing the diagnosis of solitary cysticercosis due to its characteristics imaging appearance. In our patient MRI showed a cystic lesion with edema and inflammatory changes in internal oblique muscle. High resolution ultrasound revealed scolex which was not appreciated on MRI. Biopsy was not done and patient has good clinical response with medical treatment.

Due to nonspecific manifestations in muscular lesions like pain and swelling, clinical diagnosis is often difficult. However, cysticercosis should be considered in differential diagnosis of muscular swelling, especially in endemic regions. Imaging allows diagnosis to be made with confidence and thus avoiding unnecessary FNAC or biopsies. In our case HRUS demonstrated scolex which was not appreciated by MRI. Hence HRUS, being a cheaper investigation should be performed before MRI. These patients, like in our case can be managed conservatively and diagnosis can be confirmed by therapeutic response.[8]

References

1. Alsina GA, Johnson JP, McBride DQ, et al. Spinal neurocysticercosis. Neurosurg Focus 2002; **12:** 1-7.

2. González AE, Lopez Urbina T, Tsang B et al. Transmission dynamics of Taenia solium and potential for pig-to-pig transmission. Parasitol Int. 2006; **55:** 131-5.

3. Venkataraman S, and Vijayan G.P, Uncommon manifestation of human cysticercosis with muscular pseudohypertrophy,Trop Geogr Med 1983; **35:** 75-7.

4. Abdelwahab I.F., Klein M.J., Hermann G. and Quader M.A. Solitary cysticercosis of the biceps brachii in a vegetarian: a rare and unusual pseudotumor, Skeletal Radiol 2003; **32:** 424-8.

5. Ogilvie CM, Kasten P, Rovinsky D, Workman K.L, Johnston J.O. Cysticercosis of the triceps: an unusual pseudotumor. Case report and review. Clin Orthop 2001; **1:** 217-21.

6. Salgado P, Rojas R, Sotelo J. Cysticercosis: clinical classification based on imaging studies. Arch Intern Med 1997; **157:** 1991-7.

7. Bhavin G. Jankharia, Govind B. Chavhan, Pradeep Krishnan, Bijal Jankharia. MRI and ultrasound in solitary muscular and soft tissue cysticercosis. Skeletal Radiol 2005; **34:** 722-6.

8. Gupta S, Jain VK, Sen J et al. subcutaneous cysticercosis involving the eyelid:sonographic diagnosis. J Dermatol 2000; **27:** 35-9.