Case Report

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A rare case of isolated cysticercosis of brachialis muscle

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ABSTRACT

Isolated muscular cysticercosis is very rare and poses a diagnostic challenge to treating doctor. It often presents as a case of muscle strain and you have to think out of the box to reach the diagnosis. We are presenting a case of isolated involvement of the brachialis muscle in a young male, who presented to us with complaints of pain of the lower arm. When patient could not get relief with conservative treatment a MRI of the arm was ordered which revealed the diagnosis of cysticercosis of brachialis muscle. In patients from endemic zone, who present with intractable muscular pain and not responding to conservative treatment, diagnosis of muscular cysticercosis should be kept in mind.

Keywords: Brachialis muscle, Muscular cysticercosis, Muscle strain

INTRODUCTION

Cysticercosis, caused by the Taenia solium larva is an important public health issue, especially in the developing world. It is also becoming more common in the developed world because of increased migration of people with the disease or Taenia solium carriers from the endemic countries. The most common manifestation is neurocysticecosis which is responsible for 26.3% to 53.8% active epilepsy cases in the developing world including India and Latin America. 1,2 Other common site of occurrence are vitreous humor of the eye, striated muscle and subcutaneous tissue.3 Muscular cysticercosis is usually associated with nervous system involvement.⁴ Isolated cases of muscular involvement are rare cysticercosis is more common in pork eating persons, but it can occur in vegetarians and in their isolated muscular cysticercosis present a tough diagnostic challenge.

CASE REPORT

We present a case of 30 year young male who presented to OPD with complaints of lower arm pain after his routine exercises in the gym. The guy was a vegetarian. There was no recent history of constitutional symptoms like fever, weight loss and arthralgia. His medical and family history was not significant. The pain was dull aching in nature and exacerbated with elbow flexion and extension.

On physical examination, there was no any obvious swelling around the elbow. Skin over the region was normal. No signs of acute inflammation were there. Deep palpation of lower arm was painful above the elbow joint. A diagnosis of biceps strain was made, albeit no tenderness of biceps tendon was noted. Initially, the patient was treated conservatively with nonsteroidal antiinflammatory drugs, ice application and interferential therapy (IFT). Patient got some relief in pain with the treatment. After one week of treatment isometric exercises were started. After 2 weeks, the patient returned to OPD with increased intensity of pain. On examination active elbow flexion and passive elbow extension was painful. The patient was advised to continue conservative treatment with an initial period of inactivity, but he did not get relief. The patient was thoroughly investigated

with X-ray of the arm including elbow AP and lateral views and routine blood investigations. All these investigations did not contribute to the diagnosis. An MRI of the involved arm was ordered which showed a lobular shaped irregular marginated lesion with a low signal intramural nodule in the brachialis muscle, exhibiting low signal peripheral rim on T2 weighted images with central hyper intensity (Figure 1 and 2). Diffuse STIR hyper intense signals in the brachialis muscle fibers surrounding lesion were noted. The size of the lesion was 26.8mm x 10.2mm x 14. 7 mm. No significant contrast enhancement of the lesion was noted. A diagnosis of degenerative intramuscular cysticercosis was made. The patient was put on oral albendazole 400 mg twice a day for 15 days. After 2 weeks of treatment, the patient completely relieved of his symptoms.

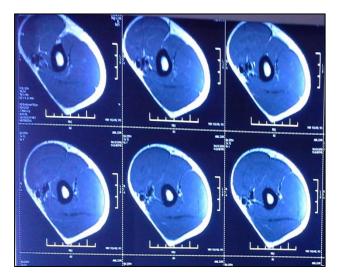


Figure 1: MRI of a low signal intramural nodule in the brachialis muscle with a low signal peripheral rim on T2 weighted images with central hyper intensity.

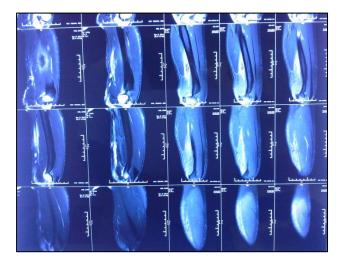


Figure 2: MRI of brachialis muscle showing hyper intensity suggestive of intramural nodule.

DISCUSSION

T. Salem infection is still endemic in many areas of the world including South East Asia, Africa and South America.⁵ In developed countries, it is mainly seen in immigrants from endemic areas.⁶ Taeniasis is the intestinal infection by *Taenia soleum*, which is usually caused by ingestion of contaminated pork. Humans are definitive host and infected with the larval stage, the cysticercus (Cysticercus cellulose), from eating infected pork. A cysticercus attaches to the intestinal wall by its scolex and it grows by forming new proglottids and becomes an adult worm. Adult tapeworm produces eggs (proglottids) which become mature and gravid proglottids are shed off in feces.

Pigs are the intermediate host and they get infected by ingesting the eggs from human feces or vegetation contaminated with human excreta. In the intestine, embryonated eggs hatch into motile oncospheres. The free oncospheres penetrate the intestinal mucosa to enter the blood and lymphatic vessels. Oncospheres migrate to striated muscles, brain, eyes, liver, and other tissues, where they settle as cysts called cysticerci. Humans may be accidental secondary hosts when they ingest embryonated eggs, either by autoinfection or ingestion of contaminated food. Like in pigs these eggs hatch into oncospheres which settle into various tissues, including brain, muscles, eyes, subcutaneous tissues as a cyst (cysticercosis).

Adult tapeworm (Taeniasis) usually doesn't cause any symptoms and it is cyst which causes clinical manifestations. Neurocysticercosis is the most common form of cysticercosis and it is the most common cause of acquired epilepsy in the world. Muscular cysticercosis is mostly associated with neurocysticercosis and isolated muscle involvement is rare. Only a few case reports of isolated muscular cysticercosis have been reported in the English literature.8-13 Probably it is the first case report of isolated brachialis muscle involvement by cysticercosis. Muscular cysticercosis often goes unnoticed because it remains asymptomatic in most individuals. Different presentations of symptomatic muscular cysticercosis have been reported as myalgic, myopathic, nodular pseudo hypertrophy type.^{3,12,13} Symptomatic muscular cysticercosis presents with pain, swelling and spasm of the involved muscle.

Diagnosis of isolated muscular cysticercosis poses a challenge to clinicians because of the rarity of the disease. Most of the time patients correlate the pain with trauma or intense exercise which further delays the diagnosis. Apart from immunochemical studies (including detection of anticysticercal antibodies), CT, MRI and USG are important diagnostic modalities. CT scan is very helpful in detecting neurocysticercosis but may not be helpful in muscular cysticercosis. X-ray rarely helps in diagnosis when calcification of the cyst occurs. The USG and MRI can reliably diagnose the

muscular cysticercosis.^{3,12,16,17} Neurofibroma, lipoma, tubercular lymphadenitis, pyomyositis and epidermoid cyst are the important differentials which need to be excluded bases on history, clinical and radiological examination. FNAC is needed to clinch the diagnosis in diagnostic dilemma.

Treatment of cysticercosis depends upon the site of involvement. Isolated muscular cysticercosis may require excision when it is painful and pressure symptoms appear. Many case reports of successful nonsurgical treatment of muscular cysticercosis with oral anthelmintic drugs albendazole or praziquantel have been published.^{3,14,15} In our case also patient got relieved of symptoms with oral albendazole.

CONCLUSION

Cysticercosis is one major parasitic infection in the developing world. Its major manifestation is neurocysticercosis. It can rarely present with isolated muscular involvement. Diagnosis of isolated muscular cysticercosis should be kept in mind while treating patients from endemic zone, when patients present with intractable muscular pain and not responding to conservative treatment.

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