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CASE REPORT

A RARE CASE OF ISOLATED MUSCULAR CYSTICERCOSIS

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ABSTRACT

Cysticercosis is an infection caused by larval form of pork tapeworm Taenia solium. Cysticercosis affects variety of tissues-rare being isolated intramuscular involvement. Involvement of the biceps brachii muscle is rarer with only three such cases reported. We present a case of isolated cysticercosis of biceps brachii in a 30 year old female who presented with swelling over the left arm lateral aspect above the elbow.

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INTRODUCTION

Human Cysticercosis is caused by the *"Cysticercus cellulosae"* larval form of pork tapeworm Taenia solium. In order of frequency, the occurrence of cysts in humans is the central nervous system, the eye, striated muscle, subcutaneous tissue, and rarely, other tissues (Garcia *et al*., 2003). Most muscular cases are associated with central nervous system involvement, presence of multiple muscular cysts or both (Ogilvie *et al*., 2001). Isolated muscular involvement is rare (Abdelwahab *et al*., 2003), with involvement of the biceps being even rarer (Abdelwahab *et al*., 2003; Nagaraj *et al*., 2008). We report a case of isolated cysticercosis of the biceps brachii muscle with no other no systemic or neurological features making it a diagnostic challenge.

Case Report

30 year old female presented with gradually increasing swelling over the lateral aspect of the left arm since 1 year. Patient had complaints of intermittent pain over the swelling. No other constitutional symptoms were present during this period.

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On physical examination, the swelling was not visible on naked eye examination. On palpation, there was a 1 x 1 cm size swelling over lateral aspect of the left arm, tender but soft in consistency. It was non-pulsatile and non-adherent to skin. Blood Investigations were normal with no anemia. ESR was elevated (60 mm/hr). X ray of left arm showed no abnormality. Ultrasound examination showed a single anechoic cystic lesion with echogenic focus and few septae within the muscular plane of the left arm above the level of elbow at site of visualized swelling measuring approximately 1.6 x 0.5 cm giving an impression of cysticercosis. On further evaluation, stool examination was normal with no evidence of ova or cyst. Magnetic Resonance Imaging of the brain revealed no intracranial abnormality.

After preanaesthetic fitness, patient underwent excision of the swelling. Intra-operatively, the intramuscular cyst was identified and excised. There were no adhesions. Specimen was sent for histopathology examination. Histopathology examination showed fragments of fibro collagenous tissues lined by histiocytes, mononuclear cells and occasional foreign body giant cells. Gross section of cysticercosis worm is also noted. Final impression was given as Cysticercosis of the left arm.

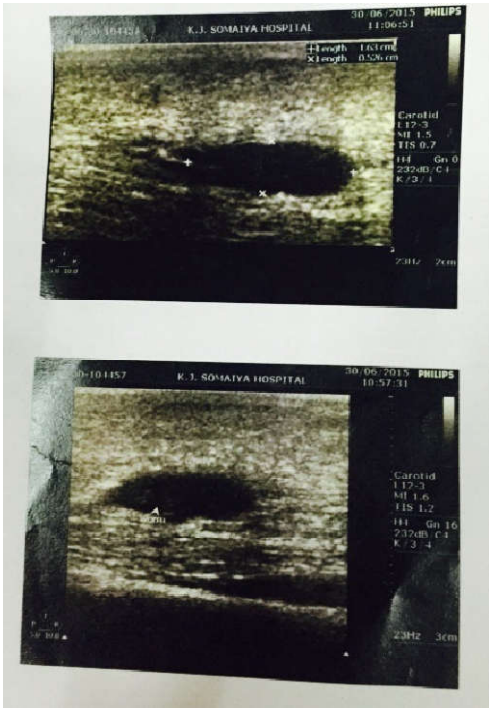

Fig. 1. Ultrasonographic appearance of intramuscular cyticercosis

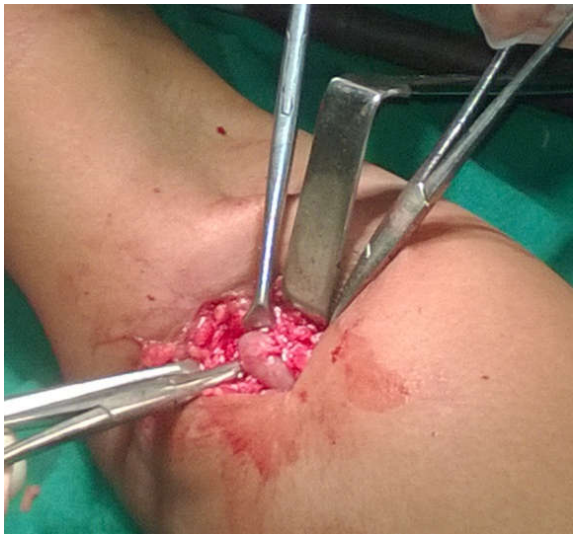

Fig. 2. Intramuscular Cystic swelling

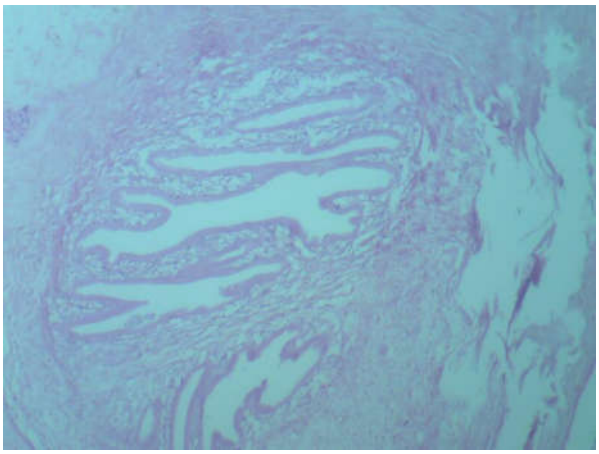

Fig. 3. Histopathological section showing cysticercus cellulosae

(H&E stain, 40 x). Patient is on oral Albendazole (15mg/kg) for 4 weeks.

DISCUSSION

Parasitic infestation is a serious health problem in developing countries. Some parasitic infestations do not present with any other symptoms except single or multiple superficial palpable nodules. Subcutaneous or intramuscular palpable parasitic nodules are most commonly due to cysticercosis (Suchitha *et al*., 2012). The clinical presentation of cysticercosis depends on the anatomical location of the cysts and the extent of associated inflammatory response (Case Reports in Infectious Diseases, 2012; Bangal *et al*., 2010). It may manifest as neuro, ocular, muscular and subcutaneous cycticercosis (Case Reports in Infectious Diseases, 2012). It is endemic in Southeast Asia, Mexico, Central and South America, and Africa (Evans *et al*., 2000). It is transmitted to humans by ingestion of eggs from contaminated water or food, such as vegetables (Lancet, 1996), ingestion of inadequately cooked infected pork, or by internal regurgitation of eggs into the stomach due to reverse peristalsis, when the intestine harbors a gravid worm (Del Brutto *et al*., 1988). The encysted larval form of Taenia solium can remain viable in this stage for as long as 10 years in humans (Despommier *et al*., 1992). Most muscular cysticercosis is asymptomatic and goes unnoticed for the life of the patient. Rarely, after the death of a worm in the cyst or trauma to the cyst there is release of antigens from the cyst, which excites the inflammatory response.

Three different clinical manifestations of muscular cysticercosis are described: myalgic myopathic type; the nodular or mass like type; and the pseudohypertrophy type in which multilocular cyst formation occurs in group of muscle (Lancet , 1996 and Despommier *et al*., 1992). The myalgic type results from death of the cyst and leakage of fluid leading to inflammation. The nodular type or pseudotumor type both result from degeneration of the cyst and slow intermittent leakage of fluid over time, leading to a chronic inflammatory response with collection of fluid around the cyst producing a mass.

'Disseminated muscular cysticercosis syndrome (Asrani *et al*., 2004), results when muscular pseudohypertrophy is often present with palpable subcutaneous nodules and seizures with abnormal mentation. Muscle hypertrophy is usually asymptomatic in this pseudohypertrophic type and the affected muscles are generally nontender. They must be differentiated from pseudohypertrophy, muscular dystrophy, myotonia congenita, trichinosis, hypothyroidism, amyloidosis and glycogenesis of Type1 (Pompe's disease) (Lana-Peixoto *et al*., 1985). Diagnosis of cysticercosis involving the muscles is difficult clinically. Cysts which reside in the muscles are difficult to palpate, as they are often deep seated and numerous cysts lying side by side intramuscularly impart a smooth, shiny and tense appearance to the muscles. Ultrasonography is important in diagnosing the presence of cysticerci in these hypertrophied muscles, through revealing cystic lesions with or without calcification. Electromyography can be a useful tool in the diagnosis of muscle cysticercosis. Short duration, low amplitude motor unit potentials are the usual findings

(Sawhney *et al*., 1976). Symmetric painless enlargement of muscles, with seizures and subcutaneous nodules, in a case of generalized cysticercosis, can also be confirmed by muscle biopsy, which usually shows densely packed cysticerci in the muscles (Venkataraman *et al*., 1983). Isolated muscular or subcutaneous cysticercosis require no specific treatment unless it is painful, which may necessitate excision.

Conclusion

Isolated muscular cysticercosis is a diagnostic dilemma for treating physicians and may present in a variety of forms. Muscular cysticercosis should always be kept in mind as a differential diagnosis of small lump within muscle presenting with pain and fever especially in the tropics. Solitary cysticercosis of muscle without involvement of the central nervous system is a rare entity and a few case reports have been reported in the literature. These solitary presentations of cysticerci are confusing as they present with vague misleading symptoms and there are no pathognomonic clinical symptoms. In such difficult clinical scenarios, radiology-based investigations such as ultrasound and MRI play a pivotal role in diagnosis.

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