



SERRATUS ANTERIOR MUSCLE AS A SITE FOR MYOCYSTICERCOSIS: A RARE CASE ENCOUNTER

General Medicine

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ABSTRACT

Cysticercosis is caused by the larval form of the pork tapeworm, *Taenia solium*. The central nervous system is commonly involved in this disease, but it may affect the eyes, subcutaneous tissues, liver, gastrointestinal system, skeletal muscle, and at times lung and heart [1]. Although muscular involvement is not that uncommon isolated involvement of serratus anterior muscle is a rare and unusual presentation.

KEYWORDS

Myocysticercosis, *taenia solium*, serratus anterior, cysticercosis

Case Presentation

A 30-year-old female patient came with a complaint of swelling of size about 2X1.5 cms lateral to the left breast region for 4-5 months

The patient's blood profile did not reveal any abnormalities. There is no history of fever and malaise. On clinical examination, the swelling was firm, non-tender, oval-shaped swelling of size approximately 2X1.5 cm separate from the skin and not separate from the underlying muscle. Clinically the differentials included lipoma, sebaceous cyst, abscess, hematoma, neurofibroma, pseudotumor, parasitic cyst, and enlarged lymph node. Using a 12 MHz transducer, the swelling was scanned which revealed a well defined thick-walled anechoic cystic lesion with adjacent mild soft tissue thickening of size 0.6X1.5X1.5cms (0.9 cc) present in the muscular plane of left serratus anterior muscle with evidence of tiny calcific speck with in the cystic structure likely suggestive of myocysticercosis (Figures 1)

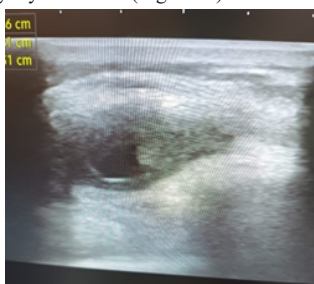


Fig 1: USG showing myocysticercosis

MRI left anterior chest wall suggestive of a well-defined encapsulated cystic lesion with an eccentric tiny nodule (scolex) is seen in the anterior portion of left serratus anterior muscle at D7-8 level, lateral to the 5th rib, just deep to inferior most portion of left pectoralis minor muscle. The lesion appears T1WI hypointense, T2WI hyperintense with T2WI hypointense scolex. There is peripheral enhancement. On gradient sequence, eccentric nodule shows blooming. Mild perilesional and inter-muscular edema is also present. It approximately measures 10 x 4 mm suggestive of myocysticercosis. The radiological study helped to rule out abscess, lipoma, hematoma (additionally there was no history of trauma) and other differentials as each of these conditions has a peculiar radiological appearance. CECT brain was done (to rule out neurocysticercosis) which didn't reveal any significant abnormality. Fundoscopy was done to rule out ocular cysticercosis which didn't reveal any abnormality. X-ray of the bilateral thigh to rule out other large muscle involvement of myocysticercosis. A preliminary diagnosis of isolated left serratus anterior myocysticercosis was made and the patient was referred for fine needle aspiration cytology (FNAC). The FNAC results showed polymorphonuclear infiltrate with occasional giant cells and palisading histiocytes with a part of the scolex. The patient was given albendazole for 4 weeks and a repeat scan was done which showed marked resolution of edema.

DISCUSSION

Cysticercosis is caused by the encysted (meta cestode) larvae of the tapeworm *T. solium*, which develops after ingestion of eggs in undercooked pork or faecal-oral transmission between humans and the dissemination is through a hematogenous route. Humans play the role of the definitive host, whereas pigs serve as intermediate hosts. The disease is prevalent in nearly all developing nations, as well as in Central and South America, Asia, and Africa. The perpetuation of this parasitic disease is related to poor hygiene and sanitation [2]. Cysticercosis is the most common parasitic infection of the soft tissues and muscles. It can affect various other organs including the brain, spinal cord, orbit, muscle, subcutaneous tissue, and heart [3]. Even people who don't consume pork, including vegetarians can also develop cysticercosis because if the eggs contaminate food sources upon ingestion they develop into larvae and result in cysticercosis. It may present clinically with myalgia, pseudotumor, mass, or pseudohypertrophy which may be misdiagnosed as lipoma, epidermoid cyst, abscess, pyomyositis, tubercular lymphadenitis, neuroma, neurofibroma, sarcoma, myxoma, ganglion or fat necrosis [4]. High-frequency ultrasonography is the initial and most reliable diagnostic modality for soft tissue swelling [5]. Although MRI and CT scans are equally useful for diagnosis, their cost makes them unaffordable for most individuals, particularly in developing nations.

Imaging methods CT and USG are equally effective in identifying the cyst and the scolex [6]. Three types of USG presentations can be there [7];

- Cyst with scolex without surrounding edema (most common).
- Cyst with scolex and surrounding edema (as in the present case).
- Irregular cyst with no scolex and with surrounding edema (least common).

medications, surgery, or watchful waiting are the therapeutic options available for this disease. The location, number, stage, and size of cysts as well as the symptoms all play a role in the treatment decision

Isolated skeletal muscle or subcutaneous cysticercosis requires no specific treatment unless it is symptomatic [8]. Corticosteroids can be given to slow down the inflammatory response caused by a cyst rupture, while antiparasitic medications like praziquantel and albendazole can be used to speed up the cysts' involution.

According to some authors, for cysts outside the central nervous system, surgical removal is the optimum management [9]. Surgery may be required in case of intramuscular cysticercosis if there is a neurovascular compromise due to the growth of the cyst

In the present case, as there was no abscess formation, antihelminthic was prescribed and follow-up USG was done at 4 weeks post-treatment wherein marked resolution of the edema was seen.

CONCLUSION

Even though single intramuscular cysticercosis is uncommon, individuals who arrive with an intramuscular or subcutaneous mass should be evaluated for this diagnosis, particularly in locations where

it is endemic. To confirm the diagnosis, non-invasive diagnostic techniques like MRI and USG are helpful. USG is a good modality, inexpensive, and easily available tool for diagnosis of myocysticercosis.

Treating only symptomatic cysts is necessary. Both surgery and medical management have been found to yield good results and thus the treatment may be individualized

Prevention

Making lifestyle adjustments, elevating socioeconomic status, enhancing sanitation, educating people about the disease, and administering anthelmintic therapy are crucial in decreasing the prevalence of *T. solium* larval diseases. Vaccinating pigs is a crucial step in breaking the life cycle and stopping the spread of *T. solium* in areas where it is common, ultimately lowering the occurrence of human cysticercosis. Recent studies have demonstrated the potential utility of various vaccines for use in pigs, but widespread use is not yet a reality.^{[10][11]}

Authorship Declaration

All authors listed meet the authorship criteria according to the latest guidelines of the International Committee of Medical Journal Editors, and all authors agree with the manuscript.

Informed Consent

Written informed consent was obtained from the patients for publication of this case report and any accompanying images.

Conflict Of Interest

The authors declared that there are no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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