

Rare Encounter of Intramuscular Solitary Cysticercosis of Extremity

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Abstract

The patient was diagnosed with cysticercosis which is caused by a larval form of the tapeworm *Taenia Solium*, or *cysticercus*. This case presented with solitary muscular involvement without any neurological or systemic symptoms. Typically diagnosed via histopathology or MRI, this was identified using CT scanning. Treatment involved successful surgical excision followed by traditional medications such as anthelmintics and steroids.

Keywords: Albendazole, Cysticercosis, Solitary Intramuscular, *Taenia Solium*.

Introduction

Life cycle of *Taenia*

Movement of emigration of population is the root cause of spread of *Taenia Solium* worldwide. Cysticercosis affects low to middle-income countries like Asia and Africa (e.g. China, India, Nepal) [1, 2, 3].

1. The parasite needs two hosts for its life cycle to be completed.
2. Definitive host being the man, and intermediate host pig, but man occasionally being an intermediate host [4].
3. Adult worms reside in the small intestine of humans and gravid segments come out with faeces.
4. The eggs are ingested by the pig.
5. After reaching the duodenum, eggs rupture with release of oncospheres.
6. They use their hooklets to rupture the intestinal wall and enter portal vessel and mesenteric lymph system once inside the general circulation they reach the left side of the heart via liver, Right side of heart through lungs.
7. They are separated in muscles within 7 weeks to 9 weeks and develop into bladder worms also known as *cysticercus*.

8. The body of mature *cysticercus* has scolex, 2 sets of suckers and rostellum with two limbs of large and small hooklets.
9. Humans get infected by eating fully or partially cooked pork containing enclosed larva [5].
10. The larvae come out in the small bowel attaches to the inner surface of intestine with suckers to form full grown.
11. Segments pass out in faeces as chains of five to six and the cycle is repeated.
12. *Cysticercus* also develops in humans by ingesting eggs which are contaminated by water and food.
13. Poor sanitation which causes faecal contamination being a major factor in transmission.
14. A Human having mature worms can self-infect himself by unclean personal habits or by overturning peristalsis in the intestine. After that the segments are moved into the stomach which is equal to consuming 1000 eggs. In humans the formation of *cysticercus* is very similar to that in pigs.
15. Human *cysticercosis* is caused by ingesting *T.solium* eggs which is shed in the faeces of a human cystode (e.g. infected food) and therefore occurs in population that don't eat pork or share the same space

with animals like pigs where a carrier is active.

Case Report

1. A 29-year-old male is an engineer by profession with non-vegetarian dietary habits. He complained of pain and swelling for two months on the posterior medial side of left leg.
2. Swelling was initially smaller and slowly increasing in size. With a vague dull aching type of pain which persisted throughout the day. Pain was more on walking.
3. On Examination- There was no swelling in that area but there was localized pain on the posteromedial side of the left leg. The skin over the swelling was normal.
4. On deep palpation a 2 cm X 2 cm soft or firm in consistency circular, swelling which was non pulsating and with ill-defined margins and was non-adherent to the surrounding skin [Figure 1].
5. General physical examination of patients was normal with a slight increase in eosinophil count on hemogram.



Figure 1. Pre-operative picture of posterior aspect of left leg swelling (black arrow)

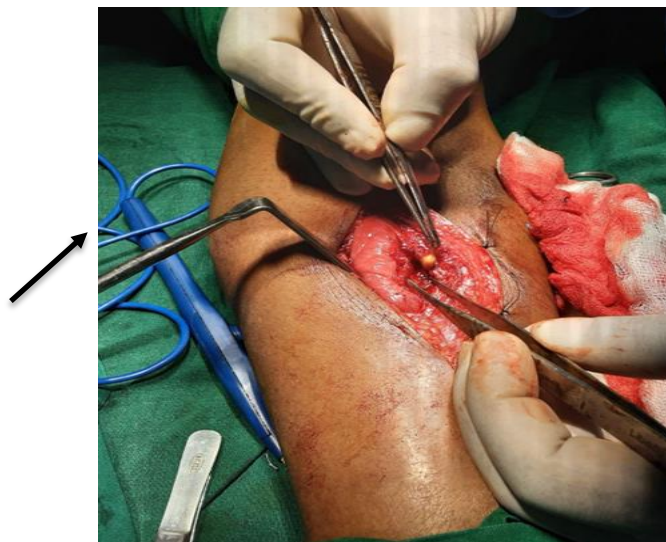


Figure 2. Intra-Operative picture showing cyst intraoperative. (Black Arrow)



Figure 3. Post-operative picture after closure of skin



Figure 4. Specimen picture post excision

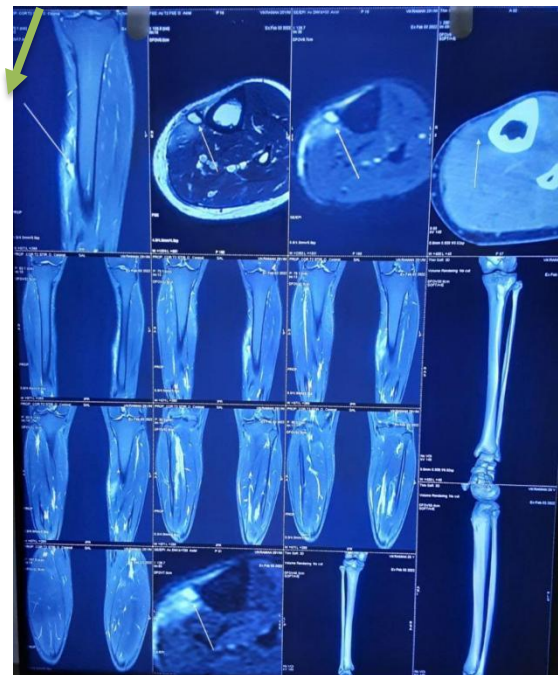


Figure 5. CT Axial plane [Green arrow] showing intramuscular cysticercus

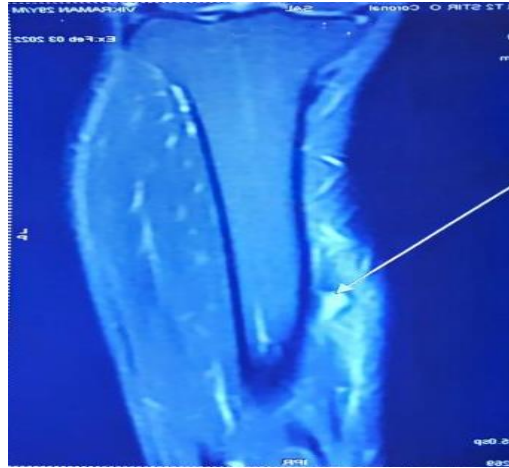


Figure 6. CT Coronal plane [white arrow] showing cysticercus

CT scan was done- Well Defined thin walled cystic lesion with surrounding edema visualized in the posteromedial aspect of middle 3rd of left leg probably involving the flexor digitorum longus muscle suspicious isodense mural nodules within the cystic lesion Cysticercosis [Figure 5; Figure 6].

Patient was taken for Excision and biopsy where a linear incision was made and deepened, swelling was identified [Figure 2] and removed totally [Figure 4] and sent for Histopathology after achieving perfect hemostasis skin was closed using 2-0 Ethylon and sterile dressing was done [Figure 3]. Histopathology showed cysticercosis.

Medical treatment with Praziquantel or Albendazole which are Anti-helminthic was also given [6].

Discussion

It has been noted that muscular cysticercosis is asymptomatic, but the patient came in complaining of pain. Intramuscular surgery with only one cyst is very rare. A diagnosis has to be made to rule out conditions like:

1. Lipoma (round or oval shaped lump of tissue fat that grows beneath the skin) [7].
2. Neurofibromas (consisting of overgrowth of the nerve tissue along the blood vessels and other types of cells and also fibres).
3. Epidermoid cyst (also called sebaceous cysts which are encapsulated sub-

epidermal nodules that are filled with keratin)

4. Polymyositis (It's a type of inflammatory myopathy in which a group of muscles are characterized by chronic muscle inflammation and also weakness) [8].
5. Tubercular lymphadenitis results from the reactivation of tuberculosis at a site where the infection was initially spread through the bloodstream during primary tuberculosis infection.

There was no history of cough, fever, or TB in the patient or among his family members.

There are three different types of muscular cysticercosis that includes:

1. Myalgic or myopathic type
2. Nodular or mass like
3. Pseudohypertrophic type [6].

Blood tests are not useful for diagnosing cysticercosis, as the complete blood count typically shows normal results with an increase in eosinophil count. Ultrasonography can reveal the presence of an eccentric echogenic scolex within the cysticercus. Plain radiographs rarely indicate cysticercosis unless the cysticerci has undergone degeneration and calcification. MRI is effective in detecting live cysts.

Conclusion

The significance of this report lies in ensuring accurate diagnosis for patient welfare, and also optimizing the time and public

expenditure, preventing errors, and implementing suitable treatment strategies for the benefit of the patients.

Conflict of Interest

There is no conflict of interest.

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