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Case Report

Isolated myocysticercosis of sternothyroid: a rare case

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ABSTRACT

Human cysticercosis is caused by larval stage of *Taenia solium* manifesting clinically either as neural or extraneural cysticercosis. Neurocysticercosis along with its extraneural counterpart is the usual dictum of disease. Isolated myocysticercosis in absence of neural involvement usually goes undetected or is diagnosed differently due to its rarity. Hence, high suspicion becomes necessary in cases of cystic neck swelling and cysticercosis should always be considered as a probable diagnosis in evaluation of cystic neck lesion.

Keywords: Isolated myocysticercosis, Sternothyroid, Tapeworm

INTRODUCTION

Cysticercus cellulosae, the larval form of pork tapeworm, *Taenia solium* causes cysticercosis. This parasitic infection is common in regions of poor sanitation facilities, close human and animal interaction. Type of infection in humans depends on whether they are infected with adult tapeworms in intestine or larval forms in tissues. Ingestion of encysted pork causes intestinal infestation of adult tapeworm leading to a carrier state for parasite eggs making humans definite hosts of parasite.[1,2] Whereas humans act as intermediate hosts in feco-oral transmission of parasite eggs. These eggs are thick shelled, the outer wall of which is broken by gastric secretions releasing oncospheres containing suckers and hooks on surface which attach and penetrate the intestinal wall. These enter mesenteric venules and via bloodstream lodge in various tissues, and develop into cysts. Brain, eyes, subcutaneous tissue and muscles are common sites. The neck region is the uncommon site for cysticercosis and isolated muscle cysticercosis is rare.[3,4] These present with diagnostic dilemma with no specific manifestations.[5]

CASE REPORT

A 35 year old female presented to our OPD with swelling in the anterior aspect of neck noticed 1 year ago. The swelling gradually increased in size and was not associated with pain until 1 month.

Figure 1: Clinical picture of swelling in anterior aspect of neck.

On clinical examination, there was a solitary, spherical, cystic, non-tender swelling of 3×1.5 cm in anterior aspect of right side of neck which moved with deglutition and

not fixed to overlying skin. There were no other palpable swelling in neck. Ultrasonography revealed a well-defined anechoic cystic lesion of 28×13mm with hyperechoic intracystic foci representing scolex with surrounding oedema.

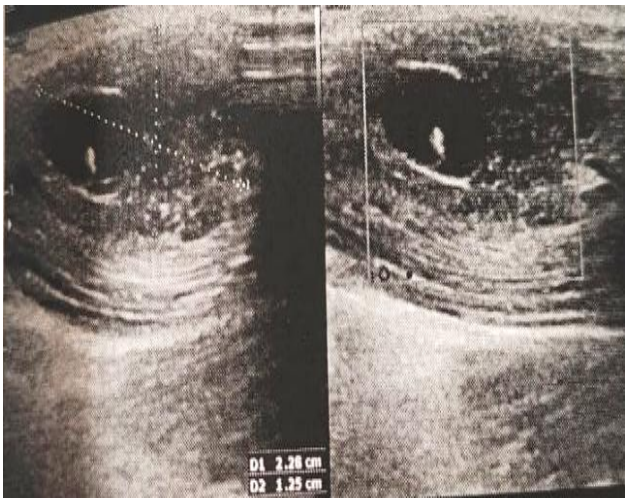

Figure 2: Ultrasonography of neck showing cystic lesion with hyperechoic intra-cystic foci.

Fine needle aspiration cytology revealed sheets of eosinophils, histiocytes, fragments of parasite (tri-lamellar membrane), refractile hook-lets against a background of proteinaceous material admixed with necrosis.

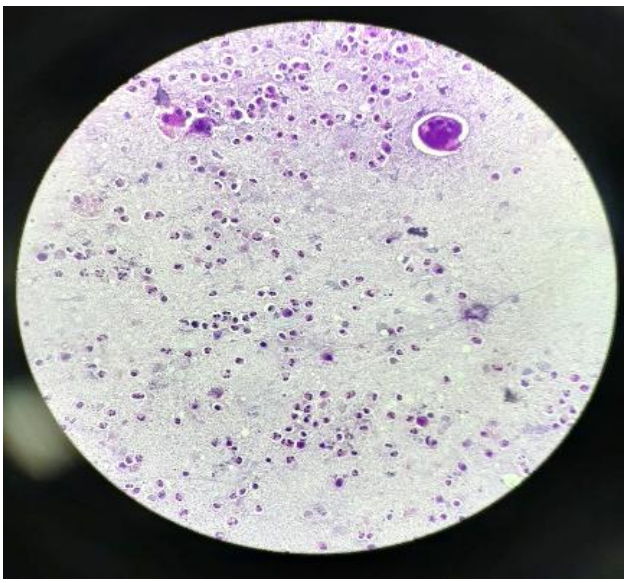

Figure 3: Fine needle aspiration cytology showing hook lets and parasite fragments.

The patient underwent surgical excision of cyst. Intraoperatively, the cyst was found to be adhered to right sternothyroid muscle. A gross specimen of 3×3×1.5 cm containing cyst and some muscle fibres was sent for histopathology.

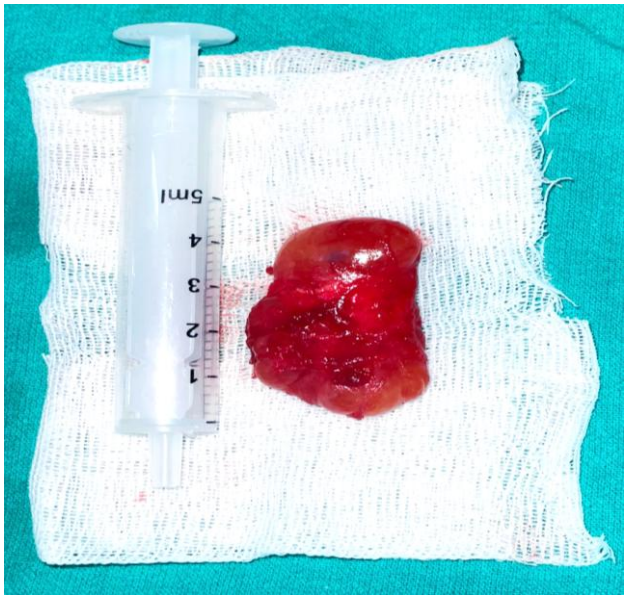

Figure 4: Gross specimen of excised cyst.

Post-operative period was uneventful. Microscopy showed skeletal muscle densely infiltrated by chronic inflammatory cells with granulation tissue and fibroblasts suggestive of parasitic lesion. No cyst was found in the brain on CT scan, liver on ultrasound, lungs on chest X-ray and retina on ophthalmic examination. The patient was advised tablet albendazole 400 mg twice daily for 2 weeks.

DISCUSSION

Clinical features of cysticercosis depend on the location, cyst burden and the associated inflammation.[6,7] In contrast to neurocysticercosis, isolated muscle involvement is not fatal. Three types of clinical manifestations occur in muscular form: the myalgic type in acute inflammation; the mass-like, pseudotumor or abscess-like type in chronic inflammation due to leakage of fluid; and the rare pseudo-hypertrophic type where cyst burden is more.[8]

Four different sonographic appearance of muscular cysticercosis which are: Cysticercosis cyst surrounded by inflammatory mass, irregular cyst with minimal fluid on one side, eccentric scolex in the cyst with collection in muscle fibres and calcified cysticercosis.[9]

Haematological investigations show raised ESR and eosinophil counts due to leakage of parasitic antigen, indicating a helminthic infection. On fine needle aspiration cytology there are eosinophils, neutrophils, palisading histocytes and epithelioid cell granulomas with giant cells. Appearance of a scolex with four suckers and double row of hooklets is diagnostic, however smears with no larval parts but large number of eosinophils and palisading histiocytes due to inflammatory reaction suggests a parasitic cyst.[10] Invasive diagnostic method

can be avoided with ease after the advancement in the imaging techniques with salient features.[11]

The treatment decision is based on multiple factors, including symptoms and the location, number, stage, and size of cysts. Isolated skeletal muscle or subcutaneous cysticercosis requires no specific treatment unless it is symptomatic or cause cosmetic deformity. Surgical removal may be associated with rupture of the cyst wall causing leakage of antigens and evoking an inflammatory response. Praziquantel (50 mg/kg/day for 2 weeks) is considered the preferred treatment. However, albendazole (10-15 mg/kg/day for 4 weeks) can be effective as well.

Lifestyle changes, socioeconomic improvement, sanitary improvement, education to people about the disease and anthelminthic therapy. Decreasing pork tapeworm carriers through meat inspection and preparation, eliminating exposure of pigs to human faeces, and developing a vaccine against *T. solium*. Vaccination of pigs to interrupt the life cycle and to prevent the transmission of *T. solium* in endemic areas.

CONCLUSION

Though solitary intramuscular cysticercosis is rare, the diagnosis should be kept in mind in patients presenting with an intramuscular or a subcutaneous mass, especially in endemic areas. USG should be considered as an initial investigation to rule out intramuscular cysticercosis and in doubtful cases invasive techniques such as FNAC or FNAB could be performed for establishing the diagnosis.

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