Myocysticercosis of hand - A case report on a rare presentation

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ABSTRACT

Isolated Thenar muscle involvement of Taenia solium larva causing myocysticercosis is rarely reported in literature. A high degree of suspicion has to be kept in the people of endemic regions in developing county with an ethical background of pork consumption in regular diet. Ultrasound is the first investigation to look for, however, MRI can further aid to the diagnosis. Different treatment options including observation, surgical excision, anti-helminthic and anti-inflammatory medication

Keywords: **myocysticercosis, anti-helminthic, taenia solium**

Introduction

Myocysticercosis is infection of skeletal muscles by the cysts formed by the larvae of the parasits[1]. The hand, though less commonly affected, can be involved in cases of disseminated or localized cysticercosis. When the larvae form cysts in the muscles of the hand, this condition can lead to symptoms such as pain and swelling, lumps or nodules**.** It is a diagnostic challenge to differentiate isolated symptomatic hand swelling due to Taenia. We present a case of myocystecercosis of hand.

Case report

A 46 years old Nepalese female (Bagmati province) without prior trauma presented with a 3 months history of pain and swelling in her right hand which had emerged subtly and progressed gradually. Her hand movements were painful. There were no significant medical or family history. Notably, the pain and swelling had intensified in the past one and half months

On examination, there was a 2x3 cms swelling over the First dorsal web space of the Right hand with normal overlying skin. The swelling was soft, with mild tenderness and increased local temperature. The margins were ill-defined, and fluid thrill was absent (Figure 1). Preliminary laboratory investigations revealed high sedimentation (ESR 32), C-reactive protein (CRP 48), and leukocytosis. Other systemic examinations were unremarkable.

Fig 1: Clinical photograph showing the swelling over the first dorsal webspace of the right hand.

USG of the Right Hand suggests well well-defined cystic lesion with an eccentric dot (11.4*10*6.5mm) in the adductor pollicis muscle with adjacent inflammatory changes suggesting features of Myocysticercosis. No vascularity was noted (Figure 2).

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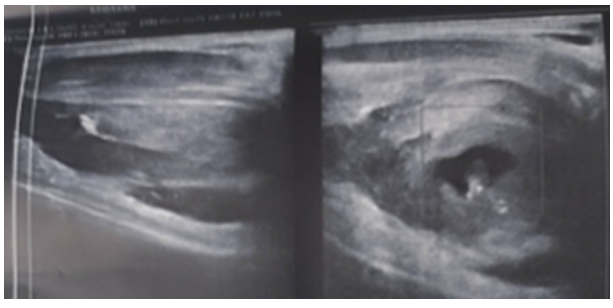

Fig 2: Ultrasound image showing cysticercosis with peripheral collection, edema in adductor pollicis muscles of right hand.

MRI reveals cystic lesion with enhancing walls, small non-enhancing mural nodule and surrounding edematous changes in adductor pollicis longus muscle in thenar region suggestive of myocysticercosis (Figure 3).

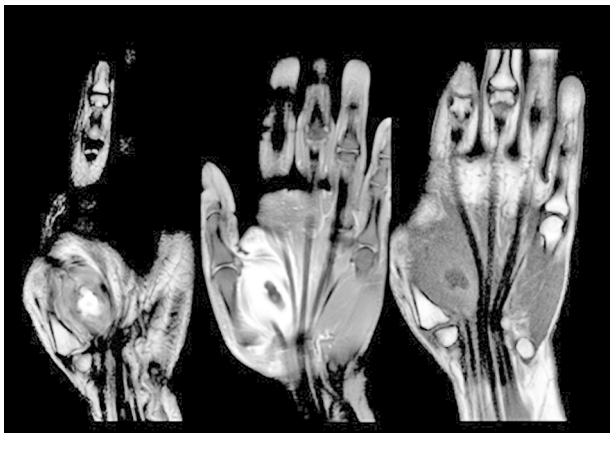

Fig 3: MRI image showing cysticercosis

Screening MRI of her brain and spine were done to rule out the presence of cysticercosis larvae in other parts. An ophthalmic examination was also done to look for any ocular involvement. No involvement of any other part else then right hand documented.

Provisional diagnosis

Based on clinical and imaging findings, a provisional clinical diagnosis of Myocysticercosis was made and surgical excision and biopsy was planned.

Treatment

Surgical excision of the lesion was done under GA. A direct longitudinal incision was made in Zone VI of the extensor tendon at the base of the first dorsal web space. After soft tissue separation, the larva was visualized along the muscular margin of the adductor pollicis longus muscle. The larva was extracted (Figures 4 & 5) and the wound surface was debrided and thoroughly irrigated with a cocktail solution of betadine, hydrogen peroxide, and Normal saline. The tissue extracted was sent for Histopathological examination (HPE).

The patient was kept on Anti-helminthic protocol (Tab Albendazole 400mg Bd for 2 weeks).

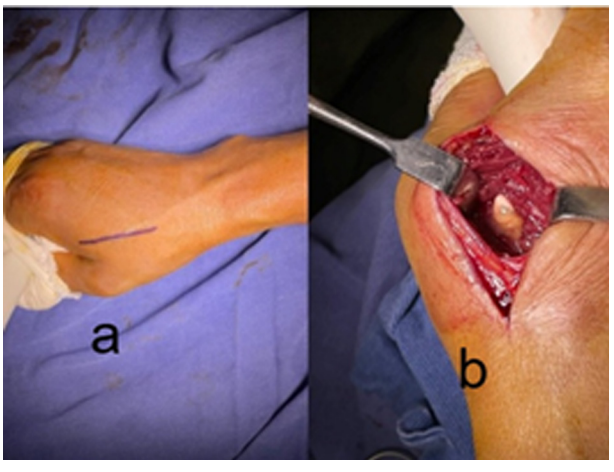

Fig 4a & 4b: Clinical photograph showing a space of the Right Hand and larva embedded into adductor pollicis muscle (blue arrow)

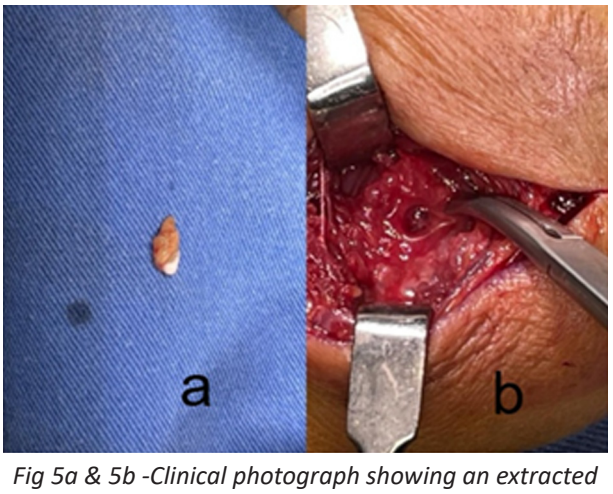

Fig 5a & 5b -Clinical photograph showing an extracted larvae and muscle after removing larvae

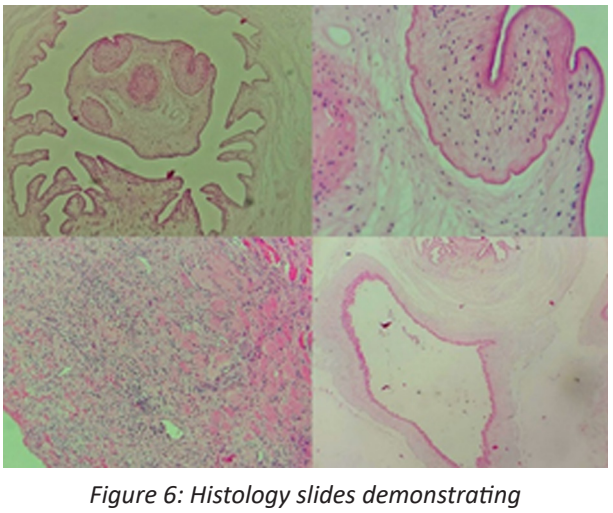

Figure 6: Histology slides demonstrating myocysticercosis

Histopathology revealed a Bladder wall of the parasite with irregularly shaped membranous folding (Figure 6) Along with vast areas of necrosis, inflammatory cells are composed of lymphocytes, neutrophils, and eosinophils.

Postoperatively, the course was uneventful. On a 1-month follow-up, the patient was completely pain-free. No clinical signs of recurrence were noted.

Discussion

Cysticercosis is caused by Cysticercus cellulosae which is the larval form of Taenia solium. Humans are infected by consuming gravid proglottids through fecal-oral route or by autoinfection. The Brain and eyes (86%) are commonly involved in this disease, but it may also affect subcutaneous tissues, the liver, the gastrointestinal system, skeletal muscle, and cardiac and pulmonary tissue[2]. Symptomatic isolated lesion in the thenar muscle is a very rare entity and has not been advocated much in the literature. High-resolution ultrasound is a reliable diagnostic measure for isolated intramuscular and subcutaneous lesions[3]. Taenia solium infestation is becoming increasingly prevalent in Nepal as shown by different epidemiological studies undertaken in different parts of the country. The geographical variation along with mixed ethnicity, religion, income, food habits, personal hygiene, standard of living and level of education are the susceptible factors for its prevalence[4].

Presentation of cysticercosis differs according to its location in the body, number of lesions, and concurrent inflammation[5]. Three different types of myocysticercosis have been described in the literature[6]. Myalgic type is caused due to leakage of cystic fluid causing inflammation. Progressive degeneration of the cyst causing micro leakage from the cyst leading to chronic inflammatory mass or abscess-like swelling seen in Myopathic type. Pseudo-hypertrophy type in which multilocular cyst formation occurs in a group of muscles[7]. Serological tests for specific anti-cysticercal antibodies also report lower sensitivity in solitary lesions[8]. We diagnosed myocysticercosis based on high-resolution ultrasonographic findings and MRI.

High-resolution ultrasound should always be the primary mode of investigation. Other imaging modalilties can be CT and MRI. Our case was of myopathic type, Treatment of cysticercosis depends on the location of the cyst. Surgical excision for isolated soft tissue cysticercosis associated with abscess[9]. Cysts that are not associated with abscess are treated with anti-helminthic medications such as Albendazole, and praziquante[10]. Follow-up ultrasound was performed after three weeks of anti-helminthic medication. Preventive measures include good personal hygiene, proper hand washing and sanitization, adequate washing and cleaning of vegetables, and pork, proper disposal of human feces, treatment & prevention of human intestinal infection.

Conclusion

Myocysticercosis is a rare entity as it lacks definite clinical features which puts the treating surgeon in a diagnostic dilemma. Therefore, a high degree of suspicion and focused imaging modalities form the base of diagnosis. Conservative management with anti-helminths and anti-inflammatory medication is effective. We opted for surgical excision in this case because of the persistent pain and progressive swelling.

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