Case Report

Primary echinococcal cyst in Trapezius muscle: An unusual intermuscular hydatidosis and review of literature

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Abstract

The primary hydatid disease in musculoskeletal position is not common, but maybe present in endemic areas. The human being is always an accidental host. We reported a 30 years adult male patient with trapezius muscle primary hydatidosis. He admitted with a complaint of large swelling right upper back for 2 years. The clinical diagnosis was a lipoma, but ultrasound suggested cystic changes in soft tissue tumor or lipoma and FNAC was inconclusive. Finally, the MRI report revealed hydatid cyst disease and diagnosis become clear with intraoperative findings as well as histopathology reports. We are reporting this case to show the very rare location of primary echinococcal cyst in trapezius muscle and challenging approach to diagnose this case with basic investigation.

Keywords: Echinococcus, hydatid cyst, lipoma, trapezius

Introduction

Hydatid disease or Echinococcosis is a type of zoonotic infection, caused by the larval stage or daughter cyst of the genus Echinococcus. Dogs, foxes are primary and sheep are secondary hosts for the infective larvae stage. Man always is the accidental host and contaminated through ingestion of parasite eggs in food, vegetables.[1] The most commonly affected organ is the liver, followed by the lungs (15%).

This is a very rare case report, only four cases of trapezius muscle hydatidosis were reported in literatures and no single case was reported in India.

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Case History

A 30-year-old adult male presented to Surgery Outpatient Department with the chief complaint of a progressive swelling over his right upper back for the past 2 years. He was noticed the first time when it was small while undressing himself. It was subtle in onset, gradually progressive in size. There was no history of muscular or abdomen pain, fever, vomiting, headache, cough, trauma, or similar swellings elsewhere on the body. The clinical findings were a well-defined oval swelling of size 8 × 7 cm, located over the right scapula extending medially up to the para-spinal region [Figure 1]. It was non-tender, firm swelling with a smooth surface, free from the skin but deep to Trapezius muscle. No abnormal finding detected on general physical and systemic examination. Our primary differential diagnosis was an intramuscular lipoma. Ultrasound swelling suggested the possibility of soft tissue tumor with cystic changes. Lipoma? Sarcoma. For pathological differentiation, a fine-needle aspiration cytology was done and suggested inconclusive but contains

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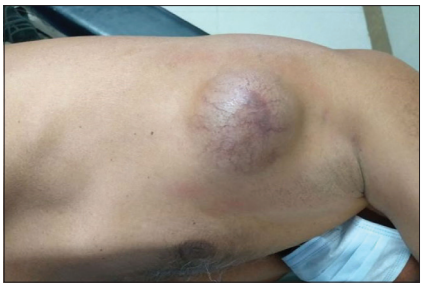

Figure 1: A well-defined oval swelling located over the right scapula

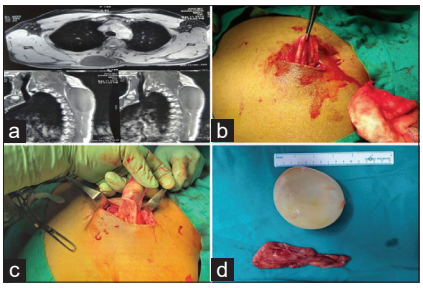

Figure 2: MRI showed well-marginated, cystic swelling in right Para median aspect of upper posterior thoracic wall, deep to trapezius muscle (a) Intraoperative image showing removal of the cyst wall from the trapezius muscle (b) Intraoperative image of white gelatinous membrane (c) A large unruptured hydatid cyst (d))

proteinaceous material in 1 ml aspirated fluid. A complete blood picture revealed Eosinophilia (1.7%). MRI of the local region revealed a well-marginated, cystic swelling of size 4 × 6 × 8 cm in the right para-median aspect of the upper posterior thoracic wall, deep to trapezius and superficial to the rhomboids with no bony or intra-thoracic extension [Figure 2a]. As per the WHO classification, CE 1 (Cystic Echinococcosis). Chest X-ray, Ultrasound abdomen, MRI chest were normal and a provisional diagnosis of primary hydatid cyst-upper back was made. Serology for E.granulosus was also positive. He was started on oral albendazole and the cyst was excised under General Anesthesia. It was removed in toto, carefully separating the cyst wall from the trapezius muscle, multiple small cysts, and few large cysts were content and removed through negative suction [Figure 2b, 2c]. A large cyst was also removed without rupture sent for histopathology [Figure 2d]. The bed was soaked with H_2O_2 and 10% povidone-iodine for 20 minutes then wound cleaned. Wound Closure was done in layers with negative suction drain. The patient was discharged on the next day of surgery without complications. Histopathological examination has confirmed the diagnosis of hydatid cyst. Albendazole drug (10 mg/kg/day) was given for the next 6 weeks. He was followed up for a period of 6 months and there were no new complaints or recurrence.

Discussion

Human Echinococcosis is a serious health problem in the endemic countries of Asia, Australia, and New Zealand. The musculoskeletal primary hydatid cyst is unusual and rare (0.4% incidence). This may be because of muscle lactic acid content and muscle contraction, which likely prevent cyst growth in striated muscle. This may also require crossover to physiological barriers from the liver or lungs.[1-3] Some case reports showed intramuscular hydatid cysts in the pectoralis major, chest wall muscle, quadriceps, Sartorius, gluteus muscles, and gastrocnemius and biceps muscle.[3] Few cases also reported in soft tissue in ischio-anal fossa and foot.[4,5] Diagnosing a muscular hydatid cyst is challenging unless there is an organ involvement or a positive serology. Radiological investigations like USG, CT scans, MRI not only help in diagnosing it but also ameliorate the complications like accidental puncture, local dissemination, and anaphylactic shock. For inoperable or systemic case, medical treatment, or percutaneous aspiration-injection and re-aspiration (PAIR) are alternatives.[6] Many authors recommend the preoperative use of anthelmintic to sterilize the cyst.[7] The postoperative anthelmintic treatment can reduce the chances of recurrence.[8]

In our case, patient had visible swelling over the right upper back only. MRI chest and ultrasound abdomen revealed exclusion of any abnormal lesion in pleural, mediastinum, and peritoneal cavity. The ultrasound of local swelling, which has a sensitivity of 90–95%, was not supporting our diagnosis. The FNAC was also inconclusive. However, invasive intervention like core cut biopsy is a diagnostic test for the soft tissue tumor, which should not be done in an echinococcal cyst as it may result in anaphylactic reactions. Our probable diagnosis of hydatid cyst was made after MRI so we avoided spillage of cystic fluid. We could confirm our diagnosis of echinococcal cyst after intraoperative findings of laminated membranes and histopathology. Preoperative chemotherapy albendazole may decrease the probability of recurrence and life-threatening complications.

Echinococcosis is a major health problem in India. Poor socioeconomic populations is commonly involved due to dependence on milk producing animals and close contact with stray animals like dogs. Most of the patients are asymptomatic for a longer duration. For early diagnosis, ultrasound screening should be implemented in the neglected population. Primary care physician has an important role in diagnosing such patients and initiating timely treatment with anthelmintic chemotherapy. Therefore, the complications and transmission of disease burden in this endemic nation can be prevented.[9,10]

Conclusion

We are reporting a very rare location of primary echinococcal cyst in the trapezius muscle. Our report also emphasizes the fact that hydatid disease should be suspected in musculoskeletal cystic lesions, especially in endemic regions like our country. Preoperative diagnosis could be challenging with clinical examination and basic investigation. Inclusion in differential diagnosis may prevent life-threatening anaphylactic complication and recurrence.

Key points:

- A very rare location of primary echinococcal cyst in the trapezius muscle
- We should include as a differential diagnosis in musculoskeletal tumors
- A life-threatening anaphylactic reaction may increase the mortality rate in inadequately prepared patients.

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Conflicts of interest

There are no conflicts of interest.

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