

CASE REPORT

Hydatid cysts in the right temporalis muscle: An exceptional clinical scenario

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ABSTRACT

Hydatid diseases is a parasitic infestation of human and herbivorous animals caused by a cestode, *Echinococcus granulosus*, which resides in the intestine of definitive hosts like dogs and some wild carnivores like foxes. Liver and lung are commonly involved organs and involvement of muscles and bones is very unusual. Hydatid cyst of the temporalis muscle is extremely rare, even in the countries where echinococcal infestation is endemic. We report a case of 23-year-old female patient with a cystic swelling in the right temporalis muscle which turned out to be hydatid cysts. Surgical excision formed the main modality of treatment.

Key words: Echinococcosis, hydatid cyst, temporalis muscle

Introduction

Hydatid disease, which is a zoonotic infection caused by larval forms (metacestodes) of tapeworms of the genus *Echinococcus* found in the small intestine of carnivores, still remains an important health problem in endemic regions including Mediterranean countries, the Middle East South America, New Zealand, Australia and South East Asia.^[1,2] Two of the four recognized species of *Echinococcus*: *Echinococcus granulosus* and *Echinococcus multilocularis*, cause cystic echinococcosis and alveolar echinococcosis in humans, respectively. The eggs of these tapeworms excreted by carnivores may infect humans as natural intermediate host.^[3]

The most frequently involved organs are liver (70%) and lungs (20%). Other organs like muscle, bones and central nervous system are rarely involved. Musculoskeletal involvement, which accounts for 3% of hydatid infestation, is very rare even in endemic zones.^[3] Facial muscle involvement is exceptionally rare

to occur with very few cases being reported in the literature. We describe a very unusual case of hydatidosis involving right temporalis muscle in a 23-year-old female patient who presented with a swelling in the right temporal region.

Case Report

A 23-year-old patient presented to the neurosurgical outpatient department with gradually increasing right temporal mass associated with slight pain for a period of 11 months. Examination revealed 6 cm × 5 cm subcutaneous swelling, cystic and fluctuant on palpation. Skin over the swelling was ulcerated [Figure 1].

Computed tomography (CT) brain demonstrated an extracranial, oval, lobulated cystic lesion with thick irregular enhancing wall in the right temporal region with thinning of the underlying temporal bone [Figure 2]. Magnetic resonance imaging (MRI) showed a multiseptated cystic lesion with mild enhancement along the septa with minimal intracranial extension [Figure 3]. Preoperative differential diagnosis of a lymphangioma or a dermoid cyst was made.

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Routine preoperative hematological tests, ultrasonography (USG) of abdomen and chest radiography, all were unremarkable. Intraoperatively, we found multiple cysts of varying size measuring 2 to 5 cm in diameter [Figure 4] suggestive of hydatid cysts. All the cysts were unilocular and filled with clear fluid. Patient had an uneventful postoperative course. Histopathology report confirmed the diagnosis of the hydatid cyst [Figure 5].

Discussion

Muscle hydatidosis is uncommon, accounting only for 3% of all cases and is usually secondary to hepatic or pulmonary disease.^[3] Most of the cases reported quadriceps, gluteus, trapezius, psoas, erector spinae, biceps femoris, adductor brevis, infraspinatus, biceps brachii, and triceps brachii as the muscles of involvement.^[4] Involvement of temporalis muscle is extremely rare. Intramuscular hydatid cysts are usually secondary, resulting either from the spread of cysts or viable larval tissue after spontaneous or trauma induced cyst rupture or after operations

for hydatidosis in distant regions.^[1] Various factors makes muscles as unusual site for hydatidosis: (1) Efficacy of hepatic and pulmonary barrier. (2) Unfavorable muscle environment for growth of hydatid cyst due to high lactic acid content. (3) Muscle contractility which hinders intra-muscle growth of cyst.^[5]

Imaging studies like USG is particularly useful for the detection of floating membrane, daughter cysts and hydatid sand in purely cystic lesions. CT is best for detection of cyst wall calcification and erosion of underlying bone. The MRI scan is helpful in detecting wall defects, as well as the complications such as rupture and infection of the cyst. Serological test like enzyme-linked immunosorbent assay, immune-electrophoresis or immunoblotting can be used for the confirmation of the disease.

Optimal treatment of the symptomatic cyst is total cystectomy and pericystectomy.^[7] Anthelmintic drugs like albendazole



Figure 1: Swelling over the right temporal region with pressure necrosis of the overlying skin



Figure 2: Contrast enhanced computed tomography. Image show an extracranial, oval, lobulated cystic lesion with thick irregular enhancing wall in the right temporal region with thinning of the underlying temporal bone

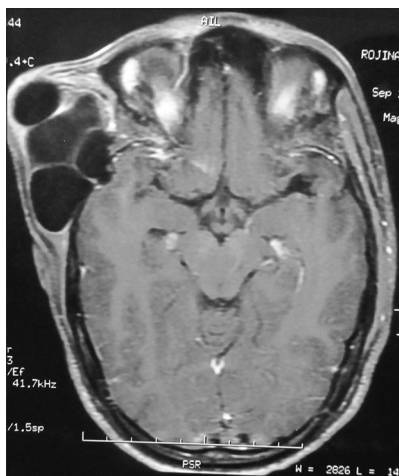


Figure 3: Magnetic resonance image. Gadolinium enhanced image show a multiseptated cystic lesion with mild enhancement along the septa with minimal intracranial extension

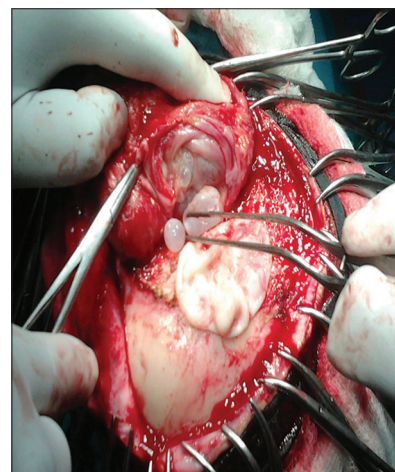


Figure 4: Intraoperative image showing the presence of multiple cysts of varying sizes

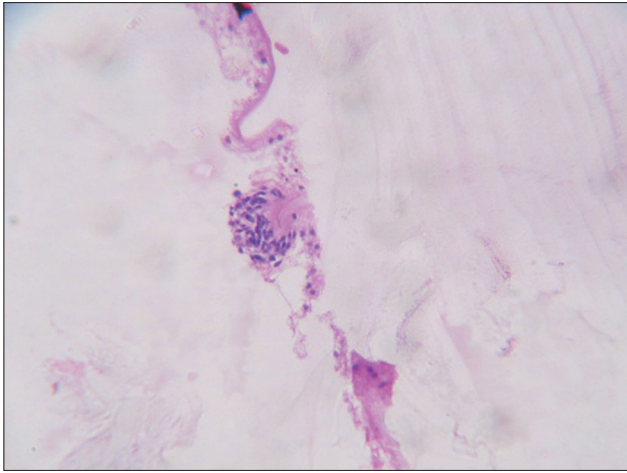


Figure 5: Photomicrograph of surgical specimen showing a presence of laminated hyaline membrane with occasional scolices. The surrounding fibrocollagenous tissue is infiltrated by inflammatory cells

or mebendazole can be used in cases where radical resection is not possible.^[8]

Conclusion

Although muscle hydatidosis is very rare and can cause diagnostic difficulties, it should be suspected in any soft tissue mass with multilocated or multicystic appearance on USG, CT scanning or MRI imaging. Preoperating serological test can be help in confirming the diagnosis. Total cystectomy is the treatment of choice.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have

given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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