

## INTRAMUSCULAR HYDATID CYST OF THE SUPERIOR RECTUS MUSCLE

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### Summary

In endemic areas hydatid cyst should be included in the differential diagnosis of focal intramuscular orbital cystic lesion. In addition, the presence of undulating membrane within the cyst is a feature that can exist in intramuscular OHC. We report a unique case of intramuscular hydatid cyst located in the superior rectus muscle and its MRI appearance. T2W MRI images showed undulating hypointense membrane diagnostic of hydatid cyst.

**KEY WORDS:** Hydatid, Superior rectus muscle, MRI.

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### INTRODUCTION

Hydatid disease is prevalent in South America, Australia, the Middle East, and Mediterranean countries.<sup>1,2</sup> However, with increased travel, isolated cases can be seen anywhere in the world.<sup>1</sup> Hydatid disease in humans is caused by tape-worms, *Echinococcus granulosus*, and the larval stage is known as the hydatid cyst.<sup>3</sup> *E. granulosus* are most commonly seen in liver and lungs, it may also involve almost every organ or tissue in the body via the portal and systemic circulation.<sup>1,3</sup> However, orbital infestation constitutes less than 1% of all hydatid disease cases.<sup>1,4-6</sup>

### CASE REPORT

A 27 year old previously healthy female presented with left eye proptosis and inferiorly displaced eyeball, diplopia maximum on upgaze was also present. Physical examination revealed limitation of upward ocular movements and signs of left optic nerve compression.

Orbital MRI was done which showed a 2 X 2cm well circumscribed, cystic lesion located solely in the superior rectus muscle. It appeared hypointense in T1W (Figure-1A) and hyperintense in T2W images with internal undulating hypointense membrane (Figure-2B). The internal undulating hypointense membrane is the characteristic appearance of hydatid cyst anywhere in the body. Following I.V contrast injection, the cyst showed thick enhancement of the capsule (Figure-1B, Figure-2A). The patient underwent surgical removal of the cyst by transcranial surgical approach. Post operative examination revealed no proptosis, residual limitation of upgaze ocular movement. Postoperative MRI shows no evidence of cyst residue.

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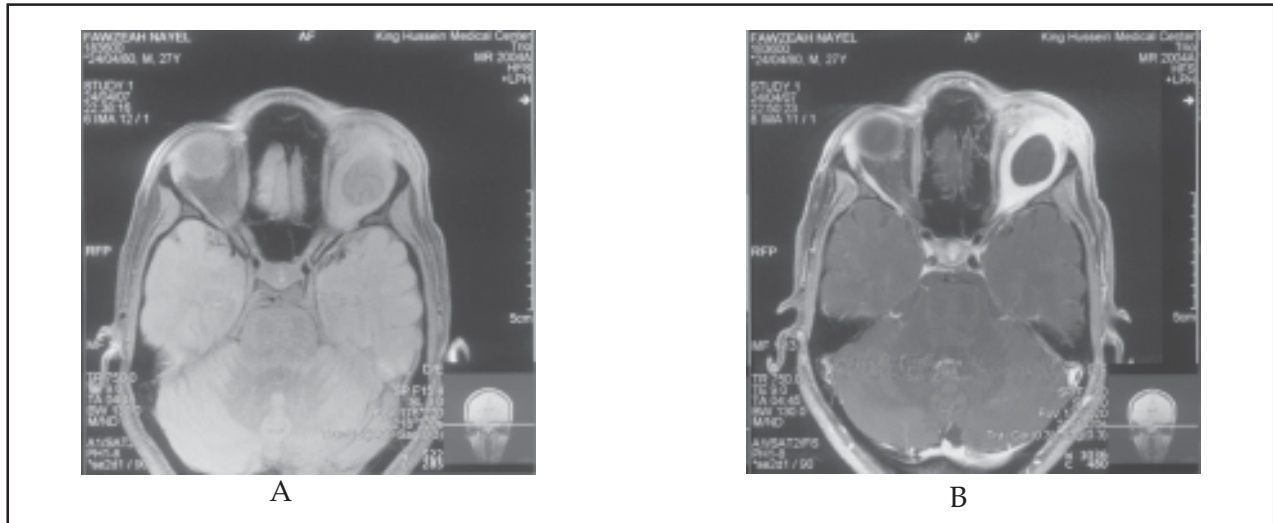


Fig-1: T1W axial images (A) before and (B) after i.v contrast administration. The cyst appears with low signal in T1W images and with capsular and pericapsular soft tissue enhancement in post i.v contrast.

**DISCUSSION**

Orbital Hydatid Cyst (OHC) are almost invariably situated in the superolateral and superomedial angles of the orbit, either within or outside the muscle cone.<sup>7</sup> Because of their superior location, they may erode the orbital roof and become intracranial.<sup>8,9</sup>

Inferiorly located cysts are very rarely seen.<sup>1</sup> In addition, more uncommon locations such as retro-bulbar have been reported.<sup>1,4,10</sup> In our computer-based search for intramuscular hydatid cysts within the orbit, only one case of

OHC within the medial rectus muscle was found.<sup>11</sup> Our case is the first described intramuscular hydatid cyst located in the superior rectus muscle.

The main clinical feature of the disease is progressive unilateral proptosis. Other clinical findings include mechanical restriction of ocular movements, visual impairment, ocular tension or pain, lid edema, papilloedema, and optic atrophy.<sup>7,8,12</sup> Upon MRI examination, the cystic lesion appeared low signal on T1W images, high signal on T2W images, capsular and pericapsular soft tissue

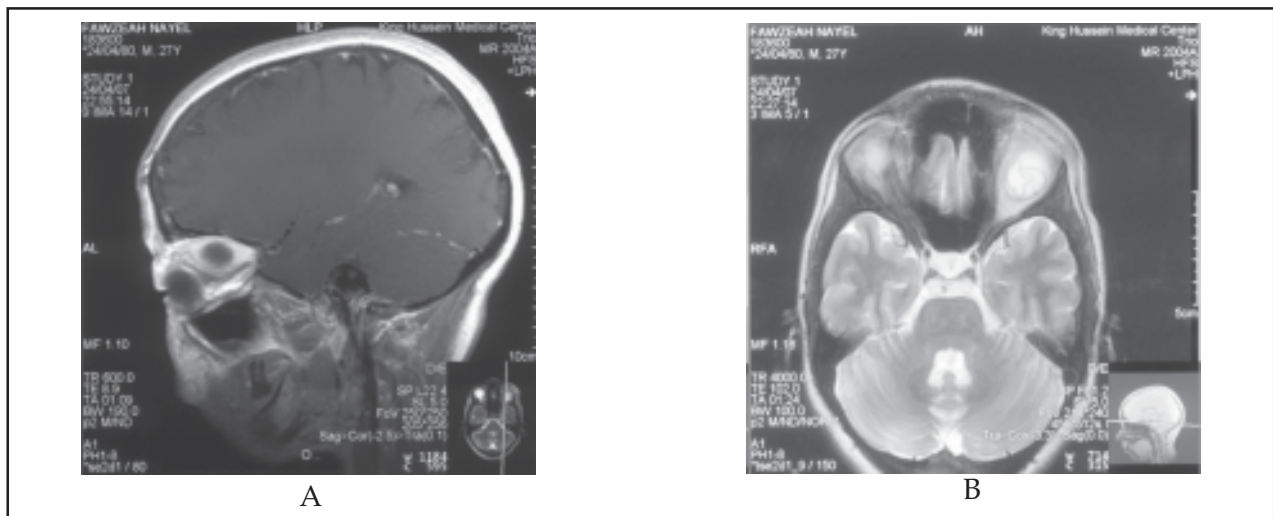


Fig-2: (A) Sagittal T1W image with i.v contrast shows th intramuscular cyst with capsular and pericapsular soft tissue enhancement. (B) Axial T2W image shows the undulating membrane within the cyst.

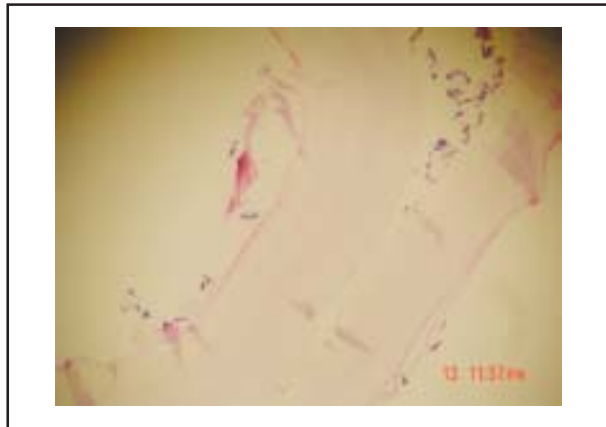


Fig-3: The hydatid cyst wall shows structureless laminated acellular material.

enhancement, and the capsule was seen as a hypointense rim surrounding the mass on T2W images. Those features were also reported in previous cases.<sup>4,5</sup> However, we have also detected an undulating membrane within the hydatid cyst which represent a typical characteristic of the echinococcal cysts in other organs.

In adults, the most common cause of extraocular muscle enlargement is Grave's disease, followed by myositic nonspecific inflammation, arteriovenous malformations, acromegaly, tumors at the orbital apex, rhabdomyosarcoma, lymphoma, and metastatic tumors, with the aid of imaging studies the differential diagnosis of focal intramuscular cystic lesions can be narrowed to include *Trichinella*, *Cysticercosis*, hemorrhagic cysts, and epithelial inclusion cysts.<sup>13</sup>

Preoperative early diagnosis is important to avoid cyst rupture so that severe allergic inflammatory reactions, seeding and recurrence of the disease can be avoided.<sup>5</sup>

The only definite treatment of hydatid cyst is surgical removal. However, due to the restricted area, total extirpation of the cyst without rupture is almost impossible and this will lead to the spillage of the contents of the cysts which leads to secondary dissemination with local recurrence, so, post operative treatment is of great importance. Mebendazole and albendazole have been shown to be effective in such cases.<sup>8,14,15</sup>

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