



Isolated cysticercus cellulosae of medial rectus muscle presenting with a mass over the inner region of the eye: a rare case report and treatment review

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Abstract

Ocular involvement with or without brain involvement is common in Cysticercosis but isolated Cysticercus cellulosae of medial rectus muscle is very rare. Herein we are presenting a case of isolated cysticercosis of medial rectus in young male which was diagnosed on radiology and responded well to albendazole and prednisolone.

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Introduction

Cysticercosis is caused by acquiring infection with the larval stage - cysticercus cellulosae of *Taenia solium*. Cysticercosis is prevalent in developing countries of Latin America, Indian subcontinent, Africa and China especially in areas of poor sanitation¹. Ingestion of contaminated food especially undercooked pork, contaminated water and infected vegetables are sources of infection. Ocular involvement occurs in 1.8 to 4.5% of the cases². Ocular adnexal involvement is exceptionally rare³. Orbital neurocysticercosis shows extremely varied clinical presentations like headache, diplopia, restriction of movements, mass, ophthalmic migraine and redness⁴. We, hereby present a case of 20 year old male from eastern UP who presented with an adnexal mass over the inner region of the right eye.

Case Report

A young male of 20 years presented in the out patients department of ophthalmology in SRN Hospital, Allahabad with the chief complaint of red mass over the right eye for 3 months which was gradually increasing in size with foreign body sensation. The swelling was not associated with protrusion of the eyeball, diminution of vision, diplopia, pain, seizures, nausea, vomiting and dizziness. There was no history of antecedent trauma to the right eye.

On examination no proptosis was appreciated. The ocular movements were within normal limits except slight restriction of adduction in right eye. The visual acuity and the intraocular pressure in both the eyes were normal. There was a well circumscribed reddish nodular mass near the medial canthus of the right eye which was 8 x 12 mm in size. Conjunctiva over the mass was congested. Fundus examination of both the eyes was normal.

Investigations: All routine investigations including haemoglobin, ESR, blood sugar, blood urea and serum creatinine were within normal limits. Total leucocyte count was high (12,300/ μ l) with neutrophilia (polymorphs – 83%). Eosinophil count was within normal range (2%). Stool examination did not show any ova or cyst. Central nervous system examination revealed no abnormality.

Imaging studies: Ultrasonography – B - scan of right eye showed a cystic lesion measuring around 10 x 9 mm in size with hyperechoic speck (scolex) within it, over the medial rectus muscle which appeared as hyperechoic thickening. Rest of the vitreous, retina, the optic disc and other extra ocular structures were within normal limits.

Ultrasound biomicroscopy (UBM) of right eye revealed a cyst of dimension 12.73 x 9.28 mm. There was a hyperechoic mass inside the inner wall of the cyst measuring 5.46 x 8.26 mm. Hyperechoic mass showed hyperechoic speck (scolex) of dimension 2.44 x 5.93 mm. CT scan of the brain and right eye showed a cystic lesion of about 8 x 13 mm in size with the thickening of the medial rectus muscle. Brain parenchyma did not show any cyst or features of neurocysticercosis.

Treatment Review: The patient was kept on Albendazole 400 mg daily along with oral prednisolone 10 mg per day for four weeks. Patient improved gradually and the mass resolved. A repeat B – scan and UBM done after four weeks showed loss of the scolex, collapse of the cyst wall and regression in cyst size with return of ocular motility to normal.

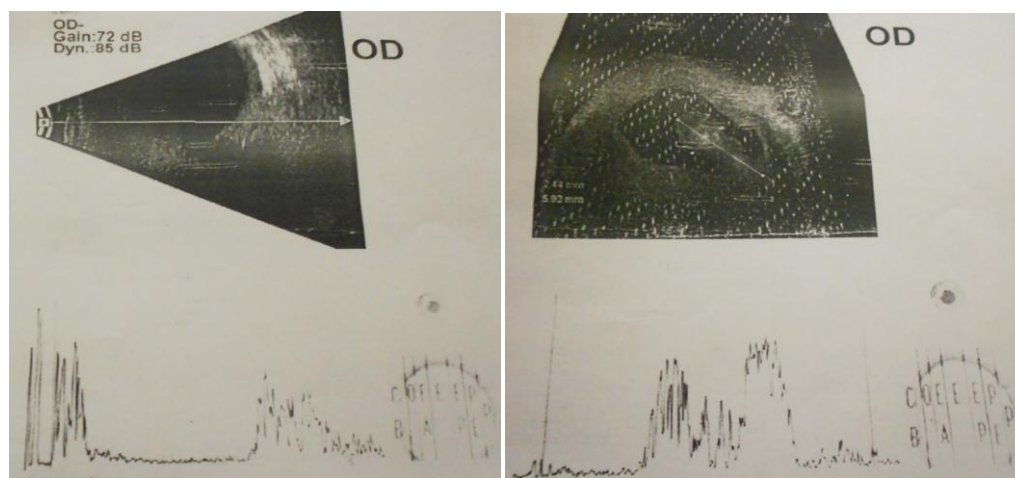


Fig -1:- Ultrasound biomicroscopy of right eye showed a cystic mass in the rectus muscle.

Fig-2:- Right orbital ultrasound biomicroscopy (A & B scan) showed a well defined cystic lesion with eccentric hyperechoic area suggesting scolex (Cysticercus).

Discussion

Cysticercosis is a common problem in developing countries of South East Asia, Africa, South America and Eastern Europe¹. Despite the high incidence of brain and ocular involvement in cysticercosis, extraocular muscle cysticercosis is very rare⁵. It commonly affects children and young adults⁶. Medial rectus is the most commonly involved extra ocular muscle⁷, however in another study inferior rectus was the commonest muscle involved¹. In our case medial rectus muscle was involved. Common clinical presentations include – diplopia with motility restriction, proptosis, orbital cellulitis, ptosis and pseudotumor formation.

Eosinophilia, inflammatory markers and ELISA for cysticercus specific antibodies are insensitive markers^{1,7}. Orbital imaging is the key for diagnosing myocysticercosis. The presence of high amplitude spikes corresponding to the cyst wall and scolex on A – scan ultrasonography or an intracystic scolex on B – scan ultrasonography or computed tomography scan is diagnostic^{1,7}.

We chose orbital sonography (B – scan) as both diagnostic modality and for assessing the cyst on follow – up visits as it was most cost effective. Ultrasound and CT both are comparable in ability to detect scolices¹. The CT scan of orbit and head was undertaken to substantiate the initial diagnosis. However CT may be preferable because intracranial CT can identify cerebral cysticercosis, the incidence of which is as high as 16.7% in a case series of myocysticercosis⁸.

Early treatment with Albendazole and adjunctive systemic steroid is highly effective for treatment of myocysticercosis.^{1,6,8,9}

Death of parasite evokes strong inflammatory response secondary to release of toxins which is effectively suppressed by systemic steroids⁵. Some trials evaluating the clinical efficacy of Albendazole on extraocular motility outcome have demonstrated cyst elimination rate of more than 90% and the time to recovery of ocular motility ranging from 3 to 35 months^{7,9}.

There are some contrasting reports describing limitations of ocular motility after albendazole therapy^{1,10} but failure to administer adjunctive steroid may explain the poorer outcome of these studies. A shorter duration of follow up could also be one of the reasons why a favourable outcome and extraocular motility was not observed¹⁰.

Surgical excision of an extraarticular muscle cyst has been described⁵. However, the potential role of damage to adjacent tissue and adhesion from surgical exploration should not be taken lightly particularly when effective medical therapy is available. Our patient responded well to albendazole with significant improvement of ocular movement in four weeks.

Conclusion

Thus our study concludes that diverse clinical presentations of myocysticercosis mandates a high degree of clinical suspicion especially in a patient coming from endemic areas. Ultrasonography, CT scan and MRI help to substantiate the diagnosis. Stool examination should be recommended for all members of the family to detect asymptomatic carriers so that treatment with albendazole could be started.

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Competing Interests

None declared.

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