



UNUSUAL CASE OF ISOLATED SUPERIOR RECTUS MYOCYSTICERCOSIS

Ophthalmology

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ABSTRACT

Background: Human cysticercosis, one of the important zoonosis, caused by the parasitic infection by the larval form of *Taenia solium*, namely *cysticercus cellulosae*, can have varied ocular manifestations. The unusual ocular manifestations can sometimes be misleading to the clinician. This case represents an unusual case of isolated left eye superior rectus myocysticercosis mimicking as neurological cause. **Case summary:** We present here a case of 18 years old boy, with chief complaint of redness in left eye and double vision in downgaze for last 9 months. On detailed evaluation, he was diagnosed with isolated left eye superior rectus ocular myocysticercosis. Patient was given oral albendazole and oral steroids for 30 days. Patient showed significant clinical and radiological improvement with the treatment. Patient was taught about sanitary hygiene and good cooking habits. **Observation:** The isolated involvement of left eye superior rectus muscle, without cerebral and intraocular manifestation might create clinical dilemma. A strong suspicion and detailed investigation, in atleast cysticercosis endemic areas is required to early diagnose and manage ocular cysticercosis. **Conclusion:** A strong suspicion and through investigation can be very helpful in early diagnosis and management of ocular cysticercosis.

KEYWORDS

Ocular myocysticercosis, *Taenia solium*, parasitic infection, restricted ocular motility

INTRODUCTION:

Human cysticercosis is caused by the parasitic infection by the larval form of *Taenia solium*, namely *cysticercus cellulosae*. *Taenia solium* cysticercosis is an important zoonosis with much public health concern and is mainly seen in areas with poverty and poor health hygiene. *T. solium* is also included in the World Health Organization (WHO) list of neglected tropical diseases (NTD). In 2012, the Joint FAO/WHO Expert Meeting published a ranking of food-borne parasites for public health concerns where *T. solium* in pork ranked first as food-borne parasite [1]. Humans get infection by consuming undercooked pork with cysticerci or water and food contaminated by its eggs. It is the most common parasitic disease of the central nervous system. It also affects other tissues like the eye, skeletal muscle and the subcutaneous tissues. It is one of the preventable and treatable causes of blindness. The most common site for ocular cysticercosis is the posterior chamber as per Western studies, however, in the Indian scenario, the ocular adnexa is the most common location [2]. In orbital cysticercosis, extraocular muscle involvement is the most common location. We report here an un-usual case of isolated left eye superior rectus myocysticercosis mimicking as neurological cause.

Case Summary:

An 18 years old boy, vegetarian by diet, resident of Raebareli district of Uttar Pradesh, presented with chief complaint of pain, redness in left eye and double vision in downgaze for last 9 months. There was no associated headache. He had consulted several doctors previously and was mis-diagnosed as nerve palsy (as told by the patient) and was prescribed on and off oral steroids. On examination, his visual acuity, color vision and intraocular pressure in the primary gaze was normal in both the eyes. There was presence of diffuse mild conjunctival congestion with restricted extraocular movement in down gaze in the left eye (Figure 1) and the pupillary reflexes showed no abnormalities. Fundus (Figure 2) was normal in both the eyes. Forced duction test performed in the left eye indicated some restriction in upper quadrant.



Figure 1: Extraocular movement of both the eyes with restricted left eye in downgaze (red arrows)



Figure 2: Colored photography of fundus of both the eyes revealing normal anatomy.

The contact B- scan ultrasound (Figure 3) showed normal posterior segment in both the eyes, however there was presence of a cystic lesion with hyperechoic centre in the superior rectus muscle of the left eye.

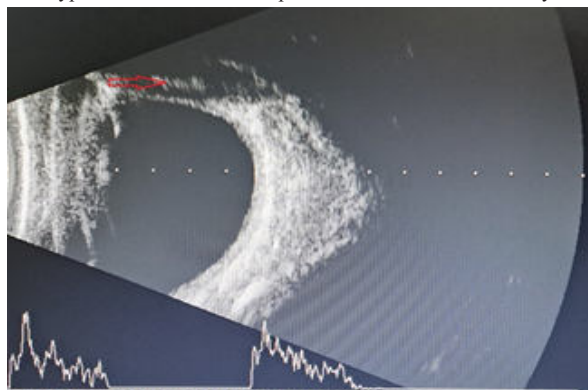


Figure 3: Ultrasound B scan of left eye demonstrating a hypoechoic area in superior rectus muscle with a hyperechoic centre (red arrow).

Magnetic resonance imaging (MRI) of Brain and Orbit (Figure 4) revealed normal brain structure but a well-defined cystic lesion of size approx. 9*6*14 mm in left superior rectus, with a T2 hypointense nodule in centre of the cyst in left eye.

Remaining extraocular muscles, eye ball and optic nerve were normal. The thickness of extraocular muscles measured were 3.4 mm, 4.4mm, 13.5 mm, 2.3 mm, 4.0 mm and 3.0 mm of inferior rectus, medial rectus, superior rectus, superior oblique, lateral rectus and inferior oblique respectively of the left eye. Right eye was normal.

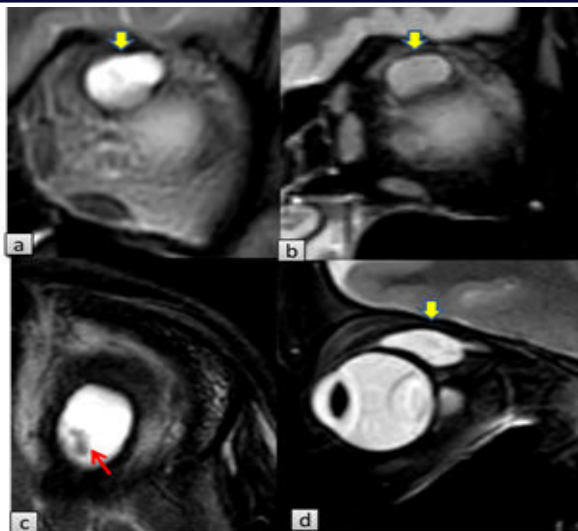


Figure 4: MRI Orbit: Coronal sections: T2 fat suppressed (a) and STIR (b) sequences show presence of cystic lesion (yellow arrow) of size ~9x6x14mm seen involving left superior rectus muscle which is hyperintense on T2 WI. Rest extra-ocular muscles are normal. Axial (c) T2 weighted images showing hyperintense lesion in the superior rectus with eccentric hypointense focus (red arrow) likely representing scolex. Sagittal (d) T2 weighted images showing lesion along the superior rectus muscle.

Patient basic vitals like blood pressure and blood sugar were within normal limits. Enzyme-linked immunosorbent assay for serum antibodies against cysticercus was positive. The complete blood count demonstrated eosinophilia with absolute count of 150 eosinophils/mm³ and raised erythrocyte sedimentation rate (ESR). Stool examination did not show any *Taenia* species eggs. The probable diagnosis of isolated left eye superior rectus myocysticercosis was made, and with no intraocular lesion; was started on oral albendazole 15mg/kg bodyweight in two divided doses and oral prednisolone 1 mg/kg body weight per day for 4 weeks.

After 2 weeks, on follow-up MRI, lesion reduced in size (~7*4*10 mm) and in signal intensity, and left eye superior rectus thickness reduced to 8.5 mm. After completion of 4 weeks of treatment, the lesion further reduced to ~6*4*8 mm with absence of scolex lesion (Figure 5). Superior rectus thickness of the left eye reduced to 7mm. The restriction in the extra-ocular movements and associated downgaze diplopia, however, did not resolve completely. Oral Albendazole was stopped after no scolex lesion was seen radiologically and the oral steroid was tapered.

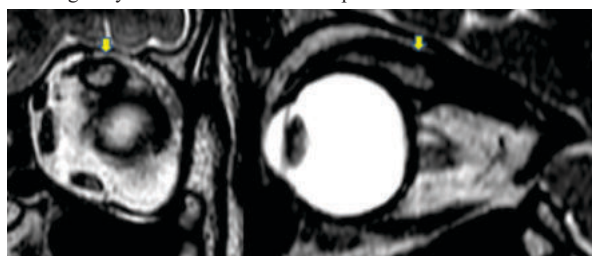


Figure 5: T2 weighted MRI after 4 weeks of treatment showing reduced size (~6x4x8mm) and signal intensity of the lesion in the left superior rectus muscle.

The patient was explained about the residual restricted ocular motility, taught about hygiene and proper cooking habits of the food.

DISCUSSION:

Cysticercosis is considered as a “biological marker” of the social and economic development of a community [3]. The cysticerci larva travel via hematogenous route and lodge themselves at sites with high glycogen content. Extraocular muscle involvement is the most common form of orbital cysticercosis. Any extraocular muscles can be involved in myocysticercosis; however, the lateral rectus, medial rectus and the superior oblique muscles have been reported to be more

commonly involved [4]. The clinical features will depend on the location and number of the cysts. Brain is the most common location for cysts (60 to 90 percent of all cases) and the eye is the least common (1 to 3 percent); however both locations cause most morbidity [5]. The most common presenting features are restricted ocular motility with diplopia in the particular gaze, associated with recurrent pain and redness. This case represents an unusual presentation with isolated left eye superior rectus muscle involvement without cerebral and intraocular involvement.

Our patient came with complaint of pain, redness and restricted down gaze in left eye for last 9 months. Restriction in downgaze in left eye can be due to either inferior rectus palsy of superior rectus mass lesion. Forced duction test and normal basic vitals suggested some superior rectus pathology. Detailed clinical, radiological and pathological examination revealed cysticercosis in the superior rectus of the left eye. Stool examination excluded Taeniasis. No intraocular and cerebral involvement was good prognostic sign. Patient was treated with oral albendazole and steroids with significant resolution of radiological and clinical features; however the extra ocular motility did not resolve completely, may be due to development of muscle adhesions and fibrosis in long standing case. The residual lesion was not active and may be developing granulation and calcification.

Patient and his family were educated about the cause of residual diplopia, transmission of this disease, emphasized on personal hygiene and were advised about thorough cooking of the food.

CONCLUSION:

Cysticercosis is one of the global public-health problem, especially so in developing countries like India. Any case of restricted ocular mobility in endemic area should be explored for cysticercosis. A strong suspicion and thorough investigation can be very helpful in early diagnosis and management.

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