

An Interesting Case of Acquired Brown Syndrome - Superior Oblique Myocysticercosis

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Purpose: To report a case of acquired Brown syndrome due to myocysticercosis of superior oblique muscle.

Case Report: A 10-year-old male child presented with headache, right ocular pain, proptosis and diplopia. On evaluation patient was found to have limitation of elevation in adduction in right eye. Imaging showed myocysticercosis of right superior oblique muscle. Patient was treated with Tab Albendazole for 04 weeks. Patient responded to the treatment well and all the symptoms resolved along with restriction of elevation in adduction.

Abstract

Conclusion: Ocular myocysticercosis should be kept in mind in cases of restrictive squints of recent onset, although it may have varied presentations in pediatric population. Systemic workup along with the imaging is required to establish the diagnosis. Treatment is with Tab Albendazole 15mg/kg body weight under initial cover of oral steroids.

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Introduction

Harold Waley Brown described restriction of elevation in adduction as superior oblique tendon sheath syndrome in 1949¹, now known as Brown syndrome. In this condition of tight superior oblique, apart from restriction of elevation in adduction, patient can also have ipsilateral head tilt, downshoot and hypotropia. Brown syndrome can be congenital or acquired. Congenital brown syndrome is characterized by decreased tendon length of superior oblique, whereas acquired Brown syndrome is caused by trauma (sinus surgery, blepharoplasty, tucking surgery of superior oblique, direct orbital trauma, glaucoma drainage implant surgery, scleral buckling), blow out fracture (causing incarceration of inferior oblique), inflammatory conditions (tenosynovitis, rheumatoid arthritis, dysthyroid disease or abscess) or infections at or near the trochlea.

Case Report

A 10-year old child was referred from elsewhere to the pediatric department with chief complaints of headache, right ocular pain, proptosis and diplopia in upgaze. There was no history of fever/nausea/vomiting/body ache/ seizures in the past or any other neurological symptoms. There was no history of trauma/any surgical procedure/chronic inflammatory disorder or thyroid disease in past. Patient reported to pediatric OPD where he underwent detailed evaluation systemically by pediatrician and was then referred to ophthalmology department after no systemic association was found.

He was reviewed and evaluated in ophthalmology department, for right ocular pain, proptosis and diplopia. On evaluation his visual acuity was 6/6 both eyes. Intraocular pressure in both eyes was within normal limits. Anterior and posterior segment examination was normal. There was right-sided head tilt with restriction of elevation

in adduction (Figure 1) and proptosis in right (Hertle's with 100 mm base-Right eye - 20mm, Left eye - 18mm).

Diplopia charting showed diplopia in primary gaze, increasing in levo gaze and levoelevation.

Squint Workup was done and showed following result:

Prism Bar Cover Test with Left eye fixing:

16PDBI	12PDL/R 12PDBI	CAN'T FIX
ORTHO	12PD L/R 08PDBI	25PDL/R 08PDBI
ORTHO	02PDBO	14PDL/R

There was Left hypertropia of 12PD and exotropia of 08PD in primary gaze, hypertropia increased in levoversion and more so in levoelevation. Bagolini striated glasses showed a normal cross response with head posture, stereoacuity was 120 seconds of arc on TNO stereo-test with head posture and exaggerated force duction test was positive for right superior oblique.

Complete blood count was found to be normal.

USG Orbit: Few round hypoechoic lesions were seen with echogenic scolex within, suggestive of myocysticercosis.

Contrast enhanced computed tomography (CECT) showed thickening of right superior oblique muscle near trochlea with few round hypodense lesions within, suggestive of myocysticercosis (Figure 2).

He was started on Tab Prednisolone 1mg/kg body weight for one week followed by Tab Albendazole 15mg/kg in two divided doses for four weeks and was followed up. Four weeks follow up showed resolution of proptosis as well as restriction of elevation in adduction in right eye (Figure 3) and resolution of cyst in superior oblique (Figure 4). Diplopia was resolved. Primary gaze showed exotropia of 06 PD and left hypertropia of 02PD was seen only in levoelevation.



Figure 1: Restriction of elevation in adduction in right eye

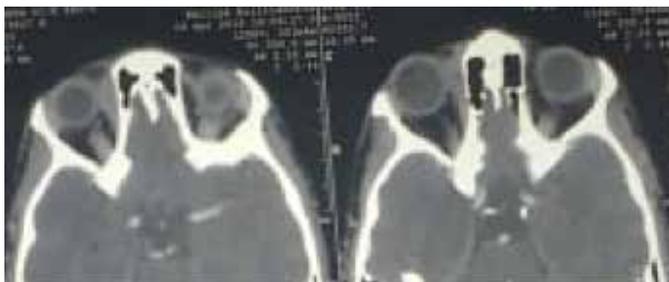


Figure 2: CECT showing thickening of right superior oblique with hypodense lesions



Figure 3: Resolution of restriction of elevation in adduction of right eye

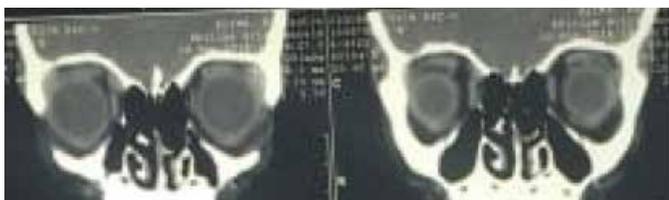


Figure 4: MRI Showing resolution of lesion in right Superior Oblique

Prism Bar Cover Test, after 04 weeks of treatment- Left eye fixing-

06PDBI	06PDBI	02PDL/R
ORTHO	06PDBI	06PDBI
ORTHO	02PDBI	02PDBI

Discussion

Acquired Brown syndrome due to myocysticercosis of superior oblique is not so common condition, as superior rectus muscle is most commonly involved muscle in extraocular muscle cysticercosis². Cysticercosis is caused by *Taenia solium*, which belong to the class cestodes. Human beings are the definitive hosts and pigs are intermediate hosts. Human beings are affected when they ingest eggs. One ingested eggs hatch into larvae, which enter blood stream after crossing the gut and reach various tissues, namely CNS, eyes or muscles³, causing cysticercosis. The most common symptoms are proptosis, pain and restriction

of extraocular movements. It should be differentiated from orbital metastasis, myositis other parasitic infections like hydatid cyst⁴. Diagnosis is often based on the findings of imaging-high-resolution ultrasonography, CECT and MRI. It is important to rule out any CNS or intraocular involvement. Treatment is in the form of oral steroids (1 mg/kg body weight) and Tab Albendazole⁵ (15mg/kg body weight).

Conclusion

Ocular myocysticercosis should be kept as a differential diagnosis in cases of restrictive strabismus of recent onset, and patient should undergo imaging to establish the diagnosis and treat the condition at the earliest.

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