

Case Report

Extraocular Muscle Cysticercosis Misdiagnosed As Duane's Syndrome - A Case Report

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ABSTRACT

Cysticercosis is a systemic parasitic disease caused by the larval form of cestode *Taenia solium*. The eye could be the prime location for such parasitic infection. The extraocular muscles are the most common site involvement of orbital cysticercosis. We report a case of a 16-year-old girl who presented with pain and redness in the left eye. She was misdiagnosed as Duane's retraction syndrome based on clinical findings. Radiological investigations showed a lateral rectus muscle cysticercosis. The patient was given oral albendazole and prednisolone. This case serves to emphasize that cysticercosis should be included in the differential diagnosis of restrictive myopathy especially in endemic regions like India.

Keywords: Cysticercosis, Duane's retraction syndrome, restrictive myopathy.

INTRODUCTION

Cysticercosis is endemic in the developing countries of Latin America, Asia and Africa, especially in areas with poverty and poor hygiene. [1] Human infestation results from eating inadequately cooked pork or vegetables growing above the ground, such as cabbage, cauliflower, etc. It affects the central nervous system, eye, skeletal muscle and subcutaneous tissue. The eye could be the prime location for such parasitic infection because of its rich vascularization and almost all structures such as orbit, extraocular muscles, conjunctiva, anterior segment, and posterior segment can be involved. The extraocular muscles are the most common site involvement of orbital cysticercosis. It becomes important to report this case because of the relative rarity of such misdiagnosis and the young age of the patient.

CASE REPORT



Figure 1: showing primary gaze - minimal conjunctival congestion with chemosis in the left eye

A 16 yrs old girl was referred to us with Duane's syndrome type II. She had complaints of redness and pain in the left eye on and off for the past two weeks. Parents were unaware of the squint. On questioning her further she told that she had occasional double vision. Her past medical history and general physical examination

were unremarkable. On examination she was found to have a visual acuity of 6/6 in both eyes. Stereopsis was 20seconds of arc with random dot test. Worth four dots test with AHP was fusion for near and distance. She had a right face turn of about 20 degrees. There was a limitation of adduction of -2 and abduction in the left eye of -1 with the retraction of globe on adduction (Figure I, II, and III). PBCT measured in the primary gaze to be 6 pd exotropia, on dextroversion 18pd exotropia and on levoersion there was 3pd esotropia. Slit lamp examination revealed minimal conjunctival congestion with chemosis around lateral rectus muscle insertion. Fundus examination was normal.



Figure II: showing levoersion: with minimal limitation of abduction in left eye

We diagnosed it to be? Lateral rectus cysticercosis and did the Computed tomography (CT) scan orbit, axial and coronal views with 2mm overlapping cuts. CT reports showed Lateral rectus muscle enlargement with a cystic lesion in it.



Figure III: on dextroversion - with limitation of adduction in left eye

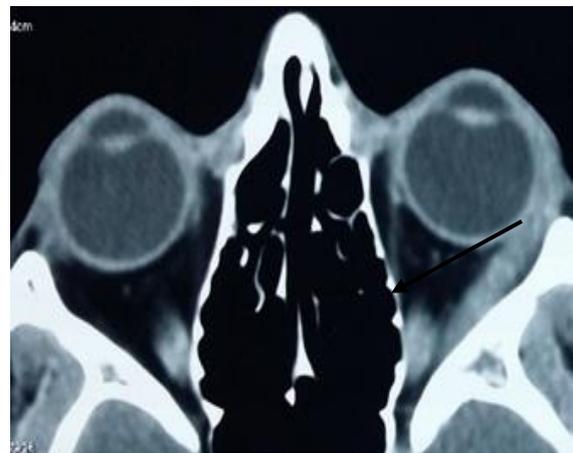


Figure IV: CT orbits-showing Lateral rectus muscle enlargement with cystic lesion in the muscle (as shown by arrow)

She was started on tab. Albendazole and tab. Prednisolone.

On one month follow up, the patient was symptomatically better with reduced pain and double vision (figure- V). There was no abnormal face turn. She was orthophoric for primary gaze and levoersion. She had 7pd exophoria on dextroversion. She was tapered off the steroids.



Figure V: on one month follow-up- on various gazes

DISCUSSION

The first case of ocular cysticercosis was reported by Semmering in 1830. Cysticercosis is found equally among both sexes, and can be diagnosed at any age from 5 to 76 years. It represents a heavy social burden in developing countries. Ocular or adnexal involvement occurs in 13%-46% of infected patients. While the most common site of localisation reported in Western studies is the posterior chamber, in the Indian literature, the ocular adnexa is the most common site.^[1,2] Orbital and adnexal cysticercoses showed a predilection for children and young adults. Extra ocular muscle involvement is the most common variety of orbital cysticercosis.^[2] Any extraocular muscle involvement can occur in myo cysticercosis but the lateral rectus, medial rectus and the superior oblique muscles have been found to be affected to a greater extent.^[3] The most common presenting features are restricted ocular motility with diplopia, and recurrent pain and redness. The diagnosis of extraocular cysticercosis was largely speculative until the advent of advanced imaging modalities, such as computed tomography (CT) and MR imaging. Early treatment with oral albendazole and corticosteroids is successful in restoring normal function.^[4,5] However, motility restriction deficits can persist when the diagnosis is delayed, enforcing the need of an early diagnosis.

Duane retraction syndrome (DRS) is a unique restrictive type of strabismus characterized by co-contraction of the medial and lateral rectus muscles due to anomalous innervation of one of the extraocular muscle antagonists during embryogenesis. This syndrome is characterized by variable limitation or absence of abduction, variable restriction of adduction, and retraction of the globe with narrowing of the palpebral fissure on adduction. Overall prevalence of DRS in strabismic patients has been estimated to be between 1 and 4%.^[6] The majority of the studies published on this condition point to a 60% female preponderance in patients

with unilateral disease.^[7] The left eye is affected in two-thirds of unilateral cases.^[8] The abduction deficit is often variable, ranging from -4 to a normal abduction depending on the amount of co-contraction of the medial rectus muscle and degree of existing normal VI nerve innervation to the lateral rectus muscle. Deficits in adduction to different magnitudes are also common in DRS, mainly due to the co-contraction of the lateral rectus muscle in attempted adduction.^[9] A compensatory head posture is almost always present in patients with DRS who do not have their eyes aligned in primary position. This compensatory mechanism helps the patient to achieve binocular single vision. Even if suppression can be seen in some patients, most of them are aware of a second image when questioned, but they usually tend to ignore this second image.^[10] Type II DRS is characterised by limitation of adduction more than the abduction with exotropia and a face turn.

In our case, since the girl was managing with her face turn she didn't had double vision as her main complaint. She had a restriction of adduction and abduction with the retraction of the globe which made the clinician to diagnose it as a case of Duane's syndrome. She had pain on eye movements along with slight congestion along the lateral rectus insertion which made us suspect cysticercosis. Lateral rectus muscle cysticercosis caused a restrictive myopathy leading to the restriction of movements.

CONCLUSION

In conclusion, a high index of suspicion is needed for extraocular cysticercosis, especially in cases of painful ocular motility disorder, particularly in a child or young adult living in an endemic area. Careful history and detailed examination would lead to the exact diagnosis. Cysticercosis should be included in the differential diagnosis of patients presenting first time with Duane's retraction syndrome. CT imaging of the orbit plays a

vital role in diagnosis. Medical therapy with albendazole and corticosteroids is an effective mode of therapy.

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