Acquired Inverse Duane Retraction Syndrome Secondary to Medial Rectus Muscle Cysticercosis

Venkatosh Bhoopathi MD, Ramnada Kekunnaya DO, FRCS, Jyothis H Matalia, DNID, Vidyullata DNID RD
shire Eye Care Center, Hyderabad, India

Abstract

Introduction: Inverse Duane retraction syndrome is an uncommon condition with reverse clinical features of classic Duane syndrome. It is most often seen due to entrapment of medial rectus muscle in the medial orbital wall after trauma.

Purpose: To report 2 cases of acquired inverse Duane retraction syndrome caused by entrapment of the medial rectus muscle by cysticercosis in adults.

Methods: Two cases presented with 5-10 days history of pain, redness, diplopia in case 1 and sudden onset of inward deviation of right eye with head posture in case 2. Clinical examination of ocular motility established a diagnosis of inverse Duane retraction syndrome. Imaging (CT/ MRI) and ultrasonography of the orbit established the diagnosis of cysticercosis of the medial rectus muscle. Oral albendazole (15mg/kg) and corticosteroids (1mg/kg) were given for a month and followed up for one year.

Results: Clinical recovery with improvement of ocular motility and resolution of medial rectus muscle cysticercosis was noted at the end of treatment.

Discussion: The treatment of cysticercosis of extracocular muscles has shifted from surgical to medical therapy following successful results using oral albendazole. Oral corticosteroids are recommended along with cysticidal drugs to control the inflammation produced from the dying cyst, thereby preventing chronic fibrosis in the involved extraocular muscle.

Conclusion: Acquired inverse Duane retraction syndrome secondary to medial rectus muscle cysticercosis is a new entity. Awareness of this condition and institution of appropriate medical treatment results in successful clinical outcome.

Introduction

Inverse Duane retraction syndrome is an uncommon condition with reverse clinical features of classic Duane syndrome. It is most often seen due to entrapment of medial rectus muscle in the medial orbital wall after trauma.

Extraocular muscle cysticercosis though rare is an important cause of acquired ocular motility disorders. Few published reports have shown the different clinical manifestations of ECM cysticercosis, as acquired Brown syndrome, Double depression palpebral dystopia, Duane retraction syndrome and ophthalmoplegia. Hence, we report two unusual cases of acquired inverse Duane syndrome secondary to medial rectus muscle cysticercosis.

Patients and Methods

Case I

A 30-year-old female patient who presented to us with a 10 day history of pain, redness in right eye with diplopia worse on looking into right gaze. There was no history of any trauma, fever or any previous ocular surgery. On general examination, the visual acuity was 20/200 in both eyes. A 5° right face turn was noted with adduction showing bulbar conjunctival congestion nasally in right eye. With head held straight she measured about 35-40 prism dioptries right esotropia which was worse on looking into right gaze. Versions revealed - 4 abduction limitation in right eye with narrowing of palpebral fissure and retraction of globe, on attempted abduction while there was widening of palpebral fissure on attempted adduction (Fig 1B). Slit lamp and fundus examination were normal in both eyes. Based on the above clinical features a diagnosis of inverse Duane retraction syndrome was made.

A contrast enhanced computed tomographic scan of orbits revealed a well defined cystic lesion in the medial rectus muscle (Fig 2A) while the brain scan did not show any evidence of neurocysticercosis. B scan ultrasonography of case 1 showed a lesion with increased thickness of medial rectus muscle (Fig 2B).

Case II

A 3-year-old female patient presented to us with a 5 day history of noticing inward deviation of right eye with head posture. There was no history of trauma, fever or any previous ocular surgery. On general examination, she had a near exotropia, steady, maintained fixation with either eye. A 10-15° right face turn was noted. With head held straight, she measured about 35-40 prism dioptries right esotropia which was worse on looking into right gaze. Versions revealed - 4 abduction limitation in right eye with narrowing of palpebral fissure and retraction of globe, on attempted abduction while there was widening of palpebral fissure on attempted adduction (Fig 3 top). Slit lamp and fundus examination were normal in both eyes. Based on the above clinical features a diagnosis of inverse Duane retraction syndrome was made.

Magnetic resonance imaging (MRI) of orbit revealed a well defined cystic lesion in the medial rectus muscle (Fig 4A), while head scan did not show any evidence of neurocysticercosis. B scan ultrasound confirmed cystic lesion with scolex in the muscle with increased thickness of medial rectus muscle (Fig 4B).

The patients were subsequently treated medically with oral albendazole 15mg/kg body weight/d in two divided doses along with oral prednisolone 1mg/kg body weight/d in single doses for 4 weeks. Oral steroids were tapered after 4 weeks.

Treatment

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Results

The cyst was obliterated and collapsed with reduction in muscle thickening on B scan ultrasonography (Fig 4B) and MRI scan (Fig 5B) at four weeks after treatment. Ocular motility showed improvement with no diplopia in primary position and as well as on version testing (Fig 1 and Fig 3 bottom).

Discussion

An extensive computerized literature search revealed only two isolated case reports of inverse Duane retraction syndrome. Chatterjee et al 1 described bilateral inverse Duane retraction syndrome in a 20-year-old female with esotropia secondary to extensive fibrous bands from medial rectus muscle to medial orbital wall. Similarly in another report, Helen Law et al 2 described a case of congenital inverse Duane retraction syndrome secondary to congenital medial rectus muscle shortening in a 6-year-old female child with esotropia. In both these cases ocular motility improved after surgery. The treatment of cysticercosis of extracocular muscles has shifted from surgical to medical therapy following successful results using oral albendazole. 3 Oral corticosteroids are recommended along with cysticidal drugs to control the inflammation produced from the dying cyst, thereby preventing chronic fibrosis in the involved extracocular muscle.

To our knowledge this report of acquired inverse Duane retraction syndrome secondary to cysticercosis of medial rectus muscle has not been reported in a child previously in the literature. Increased awareness of this condition, leads to early diagnosis and institution of prompt medical treatment results in successful clinical outcome.

References


Fig 1 Top Clinical photograph at presentation showing limitation of abduction of the right eye with retraction of globe and narrowing of palpebral fissure on attempted abduction.
Fig 1 Bottom Clinical photograph taken four weeks after treatment showing complete recovery of ocular motility of the right eye.
Fig 2A B-scan ultrasonography of case 1 showing a lesion with a scolex in the right medial rectus muscle.
Fig 2B B-scan ultrasonography of case 1 showing a lesion with increased thickness of medial rectus muscle.
Fig 3 Top Clinical photograph taken at presentation showing limitation of abduction of the right eye with retraction of globe and narrowing of palpebral fissure on attempted abduction.
Fig 3 Bottom Clinical photograph taken four weeks after treatment showing complete recovery of ocular motility of the right eye.
Fig 4A B-scan ultrasonography of case 2 showing the presence of a cystic lesion with a scolex (shown by an arrow mark) of the right medial rectus muscle.
Fig 4B B-scan ultrasonography of case 2 showing cyst obliterated and collapse with reduction in muscle thickening at four weeks after treatment.
Fig 5A Magnetic resonance imaging of the orbit of case 2 showing a cystic lesion with a scolex within the right medial rectus muscle.
Fig 5B Magnetic resonance imaging of the orbit of case 2 showing complete resolution of medial rectus cyst and inflammation after treatment.

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Shreya Eye Care Center, Hyderabad, India
Venkateshwar Bhoompally MD, Ramesha Kekunnaya DO, FRCS, Jyothis H Matalia, DNID, Vidyullata DNID RD

E-mail: shreyaeayecare@gmail.com, venkateshwar_rj@hotmail.com