Extra-Ocular Cysticercosis Mimicking Orbital Cellulitis

Sir,

Children frequently present to health professionals and emergency departments with red and/or swollen eyes. Few children will have serious pathologies such as orbital cellulitis, conjunctivitis, idiopathic orbital inflammatory disease, thyrotoxicosis, malignancies, and ocular cysticercosis.¹

Cysticercosis is a systemic parasitic infection caused by the larval form of cestode Taenia solium. It is endemic in regions with poor sanitation and occurs by ingesting the eggs of Taenia solium from contaminated food and water.² Organ systems most commonly involved include eyes, brain, bladder wall, and heart.² Ocular cysticercosis can be extra-ocular (in the subconjunctival or orbital tissues) or intraocular (in the vitreous, subretinal space or anterior chamber).²

A 14-year old boy was brought to the emergency department in a large teaching hospital in north-eastern India with a 2-week history of occasional headaches, repeated episodes of vomiting, and progressive increase in swelling of the left eye, associated with restriction of movements of the eyeball. There was no reported pain, difficulty in vision, discharge or redness of the eyes or eye lids. This was treated by a local physician as possible orbital cellulitis with oral antibiotics (co-amoxiclav) and eye drops.

Initial observations revealed heart rate of 88/minute, temperature of 36.7°C, respiratory rate of 21/minute and a central capillary refill time of <2 seconds. His paediatric Glasgow Coma Scale score was 15/15. Systemic clinical examination was essentially normal. He was admitted for further investigations and management.

Examination of the eyes revealed proptosis of the left eye (Figure 1) and the eye was turned in toward the nose and he was unable to abduct it properly. Double vision was also reported. Visual acuity, slit lamp examination, fundoscopy (post-mydriasis with pharmacological agents), and intraocular pressure measurement by an ophthalmologist were normal. Right eye examination was normal. A provisional diagnosis of left orbital pathology was made. Neurosurgical opinion was sought and MRI scan of the brain and orbits was planned for the next day.

As he started spiking temperature up to 38.7°C, blood investigations including blood cultures were sent and intravenous ceftriaxone was started and continued for the next 5-days. His CRP was initially raised at 31 mg/L and white cell counts were normal. A dose of intravenous mannitol was administered on the same day as raised intracranial pressure was suspected.

MRI scan in T2 sequence showed hyperintense lesions in the extra-ocular muscles of the left eye involving inferior (15x9 mm) and lateral (16x4 mm) rectus muscles with diffuse restriction and peripheral enhancement on post-contrast images (Figures 2 and 3). No intracranial pathology was reported.

Following further review of the history, it became evident that the boy had eaten roasted pork during a picnic few months earlier. A provisional diagnosis of extra-ocular cysticercosis was made and albendazole 400 mg once daily was started. Enzyme linked immunosorbent assay (ELISA) test was sent, which was strongly positive for Taenia solium, thus confirming the diagnosis of ocular cysticercosis. His vomiting, diplopia, and fever had resolved at discharge on day 7. CRP was normalised and blood cultures were reported negative. Plan was to repeat the MRI scan in two months’ time.

Ocular cysticercosis is an uncommon cause in a child presenting with swollen eye. It is important that clinicians working in endemic regions or treating migrant population (in non-endemic region) or travellers returning from an endemic region consider this pathology. Clinicians should remain aware of the varied signs and symptoms of ocular cysticercosis including acquired strabismus, diplopia, recurrent redness of the eye(s), and proptosis.²-⁴ Although one or more extra-ocular muscles may be simultaneously involved, there is a propensity for...
involvement of the superior muscle complex and the lateral rectus muscles.\textsuperscript{3,4} A case report has previously described detection of a cyst within the inferior rectus muscle in a 13-year old girl.\textsuperscript{5} Complications such as vitreous and retinal detachment are well known with intraocular cysticercosis. However, vitreous hemorrhage as preoperative feature or postoperative complication, blindness, or development of neurocysticercosis are also known.\textsuperscript{2,5}

It is essential that the diagnosis of ocular cysticercosis is considered and appropriate investigations are initiated in a time-critical manner. Early treatment is likely to prevent any long-term or severe damage or development of neurocysticercosis. The case study also reflects the unexpected diagnostic challenges that may be faced by clinicians in resource-limited settings as there is a lack of advanced radiological facilities being available in remote areas and physicians with limited expertise of uncommon pathologies end up treating such cases. This case benefitted from a prompt diagnosis and treatment which led to an early improvement. Adequate knowledge about food hygiene and large scale public health measures are required for eradication of this disease.

\textbf{REFERENCES}


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