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Case Report

Parasitic Cyst in Anterior Chamber. Is Viscoexpression Safe? A Case Report

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Abstract

Cysticercosis is a parasitic infection caused by larval cysts of the tapeworm Taenia solium. Ocular involvement is uncommon and cyst in the anterior chamber is very rare condition. It can give rise to iridocyclitis severe anterior chamber reaction, complicated cataract, secondary glaucoma, hypotony and phthisis. The management of the larval cysts is surgical. We report a case of 30 year old female with a cysticercosis cyst in the anterior chamber. The cyst was removed intact by viscoexpression technique from the anterior chamber of the right eye.

Keywords: *Cysticercosis; Ocular Cysticercosis; Anterior Chamber Cyst; Viscoexpression*

Introduction

Human cysticercosis is a parasitic infection caused by Cysticercus cellulosae, the larval form of the cestode, *Taenia solium*. Cysticercosis in humans is acquired by ingestion of faecally contaminated food, water or vegetables containing ova of *T. solium*. The condition is endemic in various parts of the world including Mexico, Africa, South East Asia, Eastern Europe, Central and South America and India [1-3].

Cysticercosis occurs globally, but the highest cases are reported from Latin America, Asia, and Africa [4].

Human cysticercosis predominantly affects the central nervous system causing neurocysticercosis and also the eye causing ocular cysticercosis [5].

The tapeworm resides in the small intestine of man who is definitive host. Segments containing the ova are shed in the stool. The eggs are ingested by swines who act as intermediate host. Upon ingestion the capsule of the egg digested by gastric juices of the boar and the oncosphere comes out which is deposited in the muscles, brain, eye or skin. It passes into larval or cysticercus stage. The cyst can liberate toxin if ruptured causing intense local tissue reaction. Later, it may calcify or form a small fibrous nodule [6].

Whatever is the pathogenesis, it is important to achieve removal of the intact cyst because the breach of its integrity leads to a severe reaction [7].

In our case, there was a free floating cyst with moderate reaction in anterior chamber, normal iris pattern and colour and normal crystalline lens and free anterior chamber angles shows that the probable route of entry maybe through the vessels supplying the ciliary body. Removal of the cyst intact from the anterior chamber without damage to adjacent structure is important. Breach in the integrity of the cyst in the anterior chamber can incite severe inflammatory reactions, include cataract formation and cause toxic damage to the optic nerve too [14].

Case Report

A 30 year old female came to our hospital with complain of redness with watering and intermittent diminution of visual acuity in right eye since 1 - 2 months. Visual acuity worsened during her eye movements as she noticed white spots coming on and off. She gave a history of redness and pain in RE 2 months back, she consulted a local pharmacist who gave her eye drops for two weeks which she used four times a day. Redness and pain subsided after ten days of using eye drops. There was no history of fever or convulsions, she gave a history of on and off headache in temporal and parietal region in both side which was not associated with time. She was a non-vegetarian; She had a dog and a cat as pets.

On examination her vision was 6/18 in right eye and 6/6 in left eye. Extra ocular motility was full in all direction of gaze.

Slit lamp biomicroscopy RE showed circum ciliary congestion with fine keratic precipitates (KPS) with cells 2+, in anterior chamber (AC) there was a live cysts, while the left eye was normal. Pupillary reaction in both eyes was normal. Lens was normal in both eyes. Intra ocular pressure in both eyes were 12 mmhg.

In anterior chamber of right eye there was a grayish white cysts floating which was neither attached to the iris nor to the cornea or lens capsule. The iris pattern and the lens capsule were normal. Fundus examination of both the eyes was unremarkable. The stool examination and the haemogram and ESR were within normal limits.

Ultrasonography of the showed small cystic lesions of size 2.5 × 2.6 mm in anterior chamber of right eye on, inferio-lateral side with irregular thin echogenic membrane along anterior surface of the iris. The CT-scan of the brain revealed no lesions in brain parenchyma.

The patient was admitted for parasitic cyst removal with visco expression in RE. Since there was anterior chamber reaction, we started oral steroid 1mg per kg for the patient. As well the patient was given oral Albendazole 400 mg by the physician.

Topical prednisolone acetate 1% eye drop was started six times a day in the right eye as well topical atropine eye drop three times a day.

Peribulbar anaesthesia had been given after which peritomy was done followed by scleral incision with tunnel at 12 'o' clock position was made. A 2.8 mm keratome was used for anterior chamber entry. Viscoelastic (methylcellulose) substance was injected in the anterior chamber through the wound. The cyst was gently guided to the wound and removed through the incision by depressing the posterior lip of the sclera and simultaneously injecting the viscoelastic. The cyst came out without getting ruptured. Viscoelastic was then washed and anterior chamber reformed by ringer lactate solution.

The specimen was sent for histopathological study. The cyst was translucent white in appearance and measured 2.5 mm × 2.6 mm. It was fixed in 10% formalin.

Post-operatively, topical steroids one hourly and atropine eye drops three times a day were prescribed. Oral prednisolone and albendazole were continued as prescribed pre-operatively.

Histopathologically, the specimen demonstrated a scolex and a membranous cyst wall, thus confirming it was a cyst of cysticercus cellulosae.

By the second post-operative day, fine keratic precipitates had gone with anterior chamber reaction 1+ with no flare and the vision was 6/12 in the right eye, The posterior segment examinations were within normal limit.

Patient was discharged under topical steroids one hourly and atropine eye drops three times a day. Oral prednisolone and albendazole were continued.

Patient visited us after two weeks of surgery. On slit lamp examinations the anterior segment and the posterior segment examinations were within normal limit. There was no kerato precipitates and with quiet anterior chamber in right eye. Topical and oral steroids were tapered and stopped. Refraction was done and the best corrected vision improved to 6/9 in right eye.

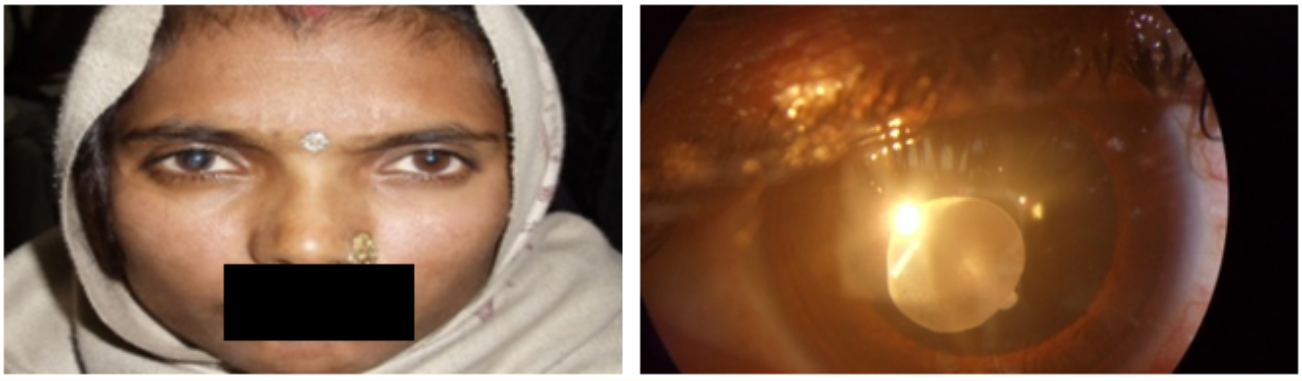

Figure 1 and 2: *Showing parasitic cyst in anterior chamber.*

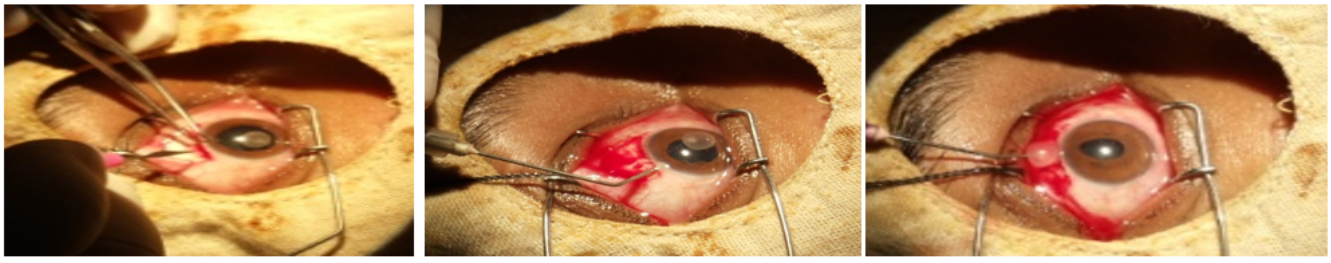

Figure 3-5: *Showing removal of parasitic cyst from anterior chamber.*

Figure 6: *Showing parasitic cyst in formalin.*

Discussion

Ocular involvement occurs in 46% of the infected patients but anterior chamber cysticercosis is an extremely rare condition [8]. Neurocysticercosis can coexist in up to 24% of the cases [9].

Cysticercus celluosae mainly has three stages of evolution. The live or vesicular cyst is the living cyst with a well-defined scolex. It causes minimal or no inflammation in the tissue. As larva begins to die the cyst wall becomes leaky, releasing toxins and causing varying degrees of inflammation. This is the colloidal vesicular stage. Eventually, the larvae die and are either totally resorbed or calcified. This is the calcified nodular stage [10].

In our patient there was moderate anterior chamber reaction with fine kerato precipitate, as well hemogram was normal with no eosinophilia.

Laboratory studies are of limited value in intraocular cysticercosis. Eosinophilia is usually absent unless there is widespread dissemination of the parasite. Serological tests lack sensitivity [11].

The best surgical method of removing the cyst from the anterior chamber is viscoexpression. We made a small incision in superior sclera at 12 'o' clock, tunnel was made and anterior chamber entered superiorly. Cyst was removed simultaneously injecting visco elastic and pressing the lower lip of the sclera tunnel.

Beri., *et al.* first described viscoexpression procedure through a single 3 mm supero-temporal incision [12].

Cysticercosis is a disease closely related to improper hygiene and sanitary conditions. Therefore, prevention by health education of the population is an important aspect of disease control. Prevention is possible by avoiding the consumption of undercooked or raw pork, proper washing of hands after using toilets and before food handling and by washing and peeling of raw vegetables and fruits before eating. Ocular and orbital cysticercosis has varied clinical manifestations depending upon the site of involvement, stage of the cyst and the host-immune responses [13].

Conclusion

Ocular cysticercosis is a rare condition which may be associated with neurocysticercosis. There may be single or multiple cyst in anterior chamber. Cysticercosis is a disease related to improper hygiene and sanitary conditions, consuming uncooked meat and vegetables. Education of the population is an important aspect of disease control. Viscoexpression is a safe technique for removal of cyst without damaging it and the ocular tissue.

Conflict of Interest

The authors declare that there is no conflict of interest.

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