Orbital hydatid cyst – A rare case report

Anirban Ghosh · Somnath Saha · Arindam Jha · Sudipta Chandra

Abstract We present a rare case of cystic hydatid disease of orbit and its endoscopic management. A 35-year-old female patient presented with unilateral progressive nonpulsatile proptosis of the right eye. Ophthalmological examination revealed proptosis of right eye with complete visual loss. Hydatid cyst of the orbit is a rare cause of proptosis, which can be safely managed endonasally in selected cases and by albendazole chemotherapy.

Keywords Hydatid cyst · Orbit · Endoscopic aspiration

Introduction

Cystic Hydatid disease is a zoonotic infection of humans caused by the larval stage of *Echinococcus granulosus*. The prevalence rate is 5–10% in Northern Kenya, which is among the highest worldwide. Intraorbital hydatid disease (IHD) is quite rare and represents < 1% of the Echinococcus cases [1]. The symptoms include progressive proptosis with or without pain, disturbance in ocular motility, visual deterioration and chemosis. Though surgery is the primary treatment of choice in hydatid cyst, complete excision of the lesion from the retroorbital region is difficult and may lead to rupture of the cyst and subsequent complications.

Case report

A 35-year-old woman sought treatment for proptosis without pain in the right eye that had persisted for five years and complete loss of vision of the right eye for three years. On ophthalmological examination, she had proptosis of 10.5 mm (measured with Hurler's exophthalmometer) with normal anterior segment. Pallor of optic disc suggestive of complete optic atrophy with chorioretinal folds and clear media in the posterior segment. Ocular motility was normal on both the sides. CT scan revealed retro-orbital, well-delineated, lobulated cystic mass (1, 2, 3 of Fig. 1). The center of each lobule had the density of water. Chest radiography and abdominal ultrasonography showed no hydatid cyst. Right anterior and posterior ethmoidectomy were done through nasal endoscopic approach. Lamina papyracea was exposed throughout its length, which was gradually removed, and the pale cystic swelling was exposed in the inferomedial part of right orbit. Then endoscopic aspiration of the cyst was done and the aspirate revealed scolices of *Echinococcus granulosus* (Fig. 2). The patient received albendazole 200 mg once daily for 6 weeks. The patient's proptosis regressed completely though visual loss remained

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the same. There was no clinical recurrence of proptosis in 2-year- follow-up.

Discussion

Common sites of *Ecchinococcal* cyst are liver, lung, mesentery, abdominal wall and spleen. More unusual sites are retro-orbital, gluteal, zygomatic, bronchial, parotid, uterine,

Fig. 1 CT scan (axial cut) showing retro-orbital mass of right orbit with multiple, well-delineated cysts

Fig. 2 Smear from aspirated fluid showed features of *echinococcus granulosus* (10x)

tibia and foot. Hydatid cyst of the orbit accounted for 0.3% of all hydatid cysts [1, 2]. Typically, an orbital hydatid cyst is unilateral and occurs with or without hydatid cysts located elsewhere in the body. The most frequent clinical findings are proptosis, chemosis, lid edema, visual impairment, and restriction of extraocular motility [3]. In the present case patient presented with gradual proptosis with loss of vision but no chemosis or restriction of extraocular mobility was found.

An orbital hydatid cyst tends to involve the retrobulbar tissues either within the muscle cone or outside in the superolateral or superomedial angle [4]. Similar presentation was found in our case with compression of the optic nerve resulting in loss of vision. Before the 1970s, the diagnosis depended on positive serological tests, X-ray examination and a history of infection of other parts of body with *Echinococcus granulosus*, with final confirmation by operation. In recent years, CT and ultrasonography have made possible a positional and qualitative diagnosis before surgery [2]. A CT scan of the orbit usually shows a well-delineated, lobulated cystic mass, confined to the orbit as found in the present case. The center of each lobule had the density of water.

The main treatment for orbital hydatid cyst is surgery [2]. Cooney RM et al [5] recommended endocystectomy with or without scolicalid agent for treatment of hydatid cyst in general, however exposure of the retro-orbital region and total removal of the mass without disturbing the globe and optic nerve is difficult. Ciurea AV et al [1] described fronto-temporo-orbito-zygomatic (FTOZ) approach with accidental rupture in one case. Transmaxillary approach can be used for hydatid cyst located inferiorly in the muscle cone [6]. Cryoextraction of the inner germinal layer of orbital hydatid cysts has been described as a simple and cost-effective treatment with minimum postoperative reaction and complications [7]. Similarly, endonasal endoscopic aspiration, as done in present case, is also a simple and cost effective technique though not widely mentioned in the literature. With the advent of naso-endoscope for the management of orbital pathology (endoscopic orbital surgery), otolaryngologists have better illumination, magnification and access in the various parts of medial orbit. Timely endoscopic aspiration can prevent blindness without any complications of cyst rupture.

Most important complication in surgical treatment is rupture of the cyst during excision, which can cause a relapse [8]. However, complete extirpation of the cyst without rupture is almost impossible. Given this possibility, some authors use treatment modalities other than surgery.

Albendazole treatment is useful, especially if begun 14 to 28 days before surgery and is used as an adjunctive therapy to surgery [2]. In postoperative recurrent cases of orbital hydatid cyst, albendazole therapy is especially useful if administered for longer period. According to Sihota et al, albendazole chemotherapy can bring complete

resolution [9]. We administered albendazole to decrease the risk of a relapse.

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