

# Cysticercosis Mimicking as Dermoid

Nita Umesh Shanbhag\*, Sumita Karandikar\*\*, Pooja Deshmukh\*\*\*

## Abstract

A 24 year old male residing in Himachal Pradesh came with swelling over the medial aspect of right upper lid since last 12 months. Patient gave no history of trauma. He gave history of waxing and waning of cyst when treated in the past with steroids. The swelling was firm in consistency with no signs of inflammation. On investigations only positive finding was eosinophil count of 3%. The absolute eosinophil count was 180 per cubic millimeter. Ultrasonography of the ocular adnexa showed a cystic lesion in preseptal space with an eccentric nodule of calcific focus. The differential diagnosis was probably Dermoid or Cysticercus. On histopathology of the excised mass, diagnosis of cysticercosis was established.

## Introduction

Human cysticercosis is a parasitic infection caused by *Cysticercus cellulosae*, the larval form of the cestode, *Taenia solium*.<sup>1</sup> In the normal life cycle of *T. solium*, humans host a 2–4-meter adult tapeworm that lives in the upper small intestine. Infective eggs are released from gravid proglottids at the distal end of the worm, and expelled with the stools of the tapeworm carrier. Pigs ingest these eggs in the stools and acquire the larval infection (cysticercosis) elsewhere in their bodies.

Human cysticercosis occurs when a human host ingests infective eggs by faecal contamination and replaces the pig as intermediate host. Humans are the only host for the adult tapeworm and thus the only source of cysticercosis is pigs or other humans.<sup>2</sup> Human cysticercosis predominantly affects the central nervous system causing neurocysticercosis and also the eye causing ocular cysticercosis.<sup>3</sup> This case is being reported as it simulated a dermoid

presentation. Enzyme linked immunosorbent assay (ELISA) and Ultrasonography (USG) confused the picture. Histopathology (HP) clinched the diagnosis.

## Case Report

A 24 year old male residing in Himachal Pradesh came with swelling over the medial aspect of his right upper lid since last 12 months (Fig. 1). He gave no history of trauma. He was put on 30 mg prednisolone orally off and on for a year by a private practitioner during which the swelling showed waxing and waning. On examination, the swelling was firm in consistency, mobile, non tender, non pulsatile, non reducible with no bruit. Vision was 20/20 in both eyes. Anterior and Posterior segment were all within normal limits. Only positive finding on routine investigation was 3% eosinophils and absolute eosinophils count was 180 per cubic millimeter. USG showed a cystic lesion in preseptal space with an eccentric nodule of calcific focus (Fig. 2). Differential diagnosis of Dermoid/Cysticercus/Mucocoele and inclusion cyst was made by radiologist.

A diagnosis of Ocular Cysticercosis is based on ultrasound or Computed Tomography (CT), which demonstrates cyst with or without scolex and serum positivity for antibodies by ELISA. The serum of the patient was tested for cysticercus antibodies by ELISA. This was non committal.

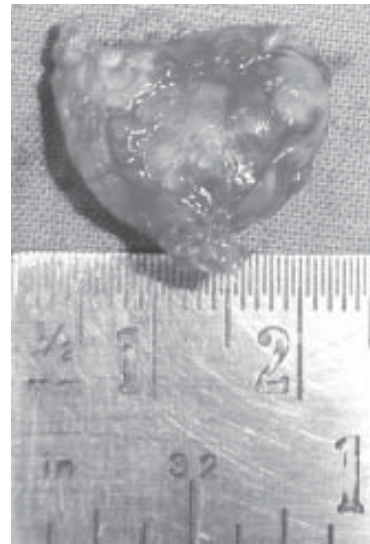
An excision biopsy was planned. The mass was removed in toto and specimen (Fig. 3) sent for HP. It showed an inflammatory reaction about the cyst wall

---

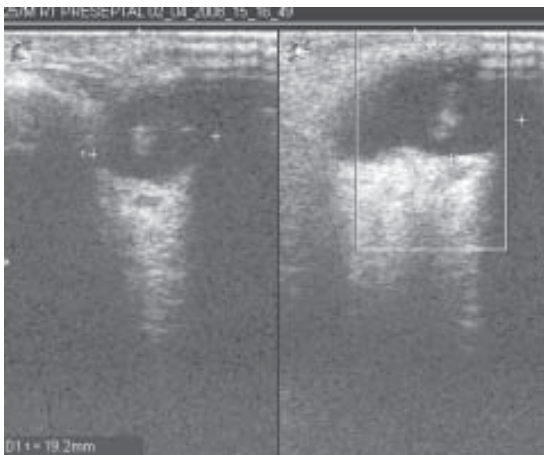
\*Head and Professor; \*\*Lecturer; \*\*\*PG Student; Dept. of Ophthalmology, D.Y. Patil Medical College and Research Centre, Nerul, Navi Mumbai.



*Fig. 1 : Swelling on the medial aspect of UL*



*Fig. 3 : Surgically excised specimen*



*Fig. 2 : USG showing cystic lesion in preseptal space with calcific focus*



*Fig. 4 : Histopathology picture with scolex and inflammatory reaction*

composed of three distinct layers: the outermost zone formed by dense fibrovascular connective tissue, a middle layer showing large histiocytes intermingled with fibroblasts, and an inner layer containing neutrophils and eosinophils. It showed scolex as a prominent feature (Fig. 4). This exactly resembled HP normally seen in cysticercosis.<sup>4</sup> Neurocysticercosis was ruled out by CT-Scan. Medical management was given, which consisted of oral Albendazole (15 mg/kg/day) in two divided doses for 4 weeks along with Prednisolone (1 mg/kg/day) in a single dose for four

weeks. Oral prednisolone was tapered off over the subsequent four weeks.<sup>5</sup>

### **Discussion**

Soemmering reported the first case of ocular cysticercosis in 1830. The larva was demonstrated and extracted by Schott in 1836.<sup>6</sup> Ocular or adnexal involvement occurs in 13-46% of infected patients. While the most common site of localization reported in

Western studies is the posterior segment, in the Indian literature the ocular adnexa is the most common site.<sup>7-9</sup> In a study reported by Kruger-Leite *et al*, 35% of the cysts were found in the subretinal space, 22% in the vitreous, 22% in the subconjunctival space, 5% in the anterior segment, and only 1% in the orbit.<sup>10</sup>

Extra-ocular cysticercosis diagnosis has become easier with Radiology. High-resolution ultrasonography displays the characteristic picture of a sonolucent area with well defined anterior and posterior margins. The presence of a central echodense, curvilinear, highly reflective structure within the cyst suggestive of scolex, helps to narrow the differential diagnosis to cysticercosis as the aetiological cause. It has been clearly shown by Mac Arthur<sup>11</sup> and Shouramma and Reddy<sup>12</sup> that the tissue reaction is less or minimal, when the cyst is alive. It is fulminant when it is dead, due to gradual absorption of the dead parasite and results in violent tissue reaction.

Computed Tomography scan not only confirms the diagnosis but also helps to rule out neurocysticercosis.<sup>13</sup> In our case the clinical picture was confusing. It simulated an angular dermoid due to its location and consistency plus it is more prevalent. On investigations absolute eosinophil count was border-line. Negative ELISA, confused the picture more. Previous studies have demonstrated the poor sensitivity of immunological studies like ELISA to detect cases of histologically proven cysticercosis, thus questioning their use in screening patients of suspected cysticercosis.<sup>14</sup> A calcific focus on USG could be dermoid or cysticercus. We should have asked for high resolution USG to differentiate between the two

preoperatively. Histopathology clinched our diagnosis.

In conclusion, a high index of suspicion is required for the diagnosis of ocular cysticercosis. An intact removal of the cyst is mandatory to prevent its propagation.

#### References

1. Parija SC, Sahu PS. A serological study of human cysticercosis in Pondicherry. *J Communicable Diseases* 2003; 35 : 234-7.
2. Nash T eva FA. Recent advances in the diagnosis and treatment of cerebral cysticercosis. *N Engl J Med* 1984; 311 : 1492-6.
3. Brown WJ, Voge M. Cysticercosis. A modern day plague. *Pediatr Clin North Am* 1985; 32 : 953-69.
4. Perry HD, Font RI. Cysticercosis of the eyelid . *Arch Ophthalmol* 1978; 96 : 1255-7.
5. Kaliaperumal S, Rao VA, Parija SC. Cysticercosis of the eye in South India—a case series. *Indian J Med Microbiol* 2005 Oct; 23(4) : 227-30. Review.
6. *In* : Duke-Elder S, editors. Cysticercosis, System of Ophthalmology. CV Mosby: St. Louis; 1978. p. 40.
7. Sekhar GC, Lemke BN. Orbital cysticercosis. *Ophthalmology* 1997; 104 :1599-602
8. Malik SRK, Gupta AK, Choudhry S. Ocular cysticercosis. *Am J Ophthalmol* 1968; 66 : 1168.
9. Sivareddy P, Satyendran OM. Ocular cysticercosis. *Am J Ophthalmol* 1964; 57 :664
10. Kruger-Leite E, Jalkh AE, Quiroz H, Schepens CL. Intraocular cysticercosis. *Am J Ophthalmol* 1985; 99: 252-7.
11. Mac Arthur WP. *Trans Roy Soc Trop Med and Hyg* 1934; 27 : 343.
12. Shouramma A, Reddy DB. *Ind J Path and Bact* 1963; 6 : 142.
13. Murthy H, Kumar A, Verma L. Orbital cysticercosis- an ultrasonic diagnosis. *Acta Ophthalmologica* 1990; 68 : 612-4.
14. Wadhwa V, Kharbanda P, Rai S. How reliable are serological tests in diagnosis of cysticercosis?. *Indian J Med Microbiol* 2006; 24 : 78-9.