

# An Unusual Eyelid Mass of Cysticercosis

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**Abstract:** Cysticercosis is infection by the larval stage of the tapeworm *Taenia solium*. (1) Cysticerci can develop in any organ within man, but are more commonly found in the skin, subcutaneous tissue, brain, or the eye. (1) Subcutaneous cysticercosis is relatively less frequent. (2) Ocular or adnexal involvement is commonly seen with the commonest ophthalmic site is subretinal space and the vitreous cavity. Very few cases of an eyelid cysticercosis have been reported in medical literature. Of the reported cases, frequency of the lower eyelid being involved is very less. (3, 4, 5) We report a rare and unusual case of isolated eyelid cysticercosis in a 6.8 year old girl as an asymptomatic slowly growing subcutaneous mass in the left upper eyelid which was presumed to be a benign skin mass, such as an epidermoid cyst. This case highlights the ubiquitous nature of cysticercosis in tropical countries and the need for a high degree of suspicion while surgically treating subcutaneous masses. We would additionally emphasize the need to rule out neurocysticercosis in such cases.

**Keywords:** Cysticercosis, epidermoid cyst, eye, eyelid mass, neurocysticercosis

## 1. Introduction

The pork tapeworm *Taeniasolium* develops in the human intestinal tract after the ingestion of inadequately cooked pork containing *T. solium* larvae. The tapeworm discharges its eggs in the feces. (2) When egg with the encysted larvae is ingested by human, through contamination of hands and food by the subject's own feces and also by regurgitation of eggs from intestinal tract into stomach by reverse peristalsis (6), they hatch, and then larvae entering the bloodstream can invade various tissues, where they develop into cysticerci. The infestation with an egg - producing adult tapeworm confined to intestines (taeniasis) imposes little harm to patient, but cysticerci can have deleterious effects by evoking cerebral cysticercosis, which is most common parasitic infestation of central nervous system worldwide (7). Subcutaneous cysticercosis is considerably less frequent. (2) Only a few cases of an eyelid cysticercosis have been

documented in medical literature. (3) In this communication, we report aupper eyelid mass that was clinically appearing to be an epidermoid cyst, but was histopathologically diagnosed as cysticercosis.

## 2. Case Report

A 6.8 year - old female presented with swelling on the left upper eyelid. There is history of swelling over left upper eyelid noticed 5 - 6 months back with pain on touch. Old photograph 3 year back showed swelling over same site. On examination there is a cystic swelling over medial supra orbital region measuring 10 mm in diameter.

Her ophthalmic evaluation was otherwise normal. MRI study was done and reported as cystic mass probably dermoid cyst. (Figure 1 & 2)



Figure – 1 and 2 MRI study

The cystic mass was excised and sent for histopathological examination.

On gross examination, Received a specimen of cyst measuring 0.5x0.4 cm in size. Cyst wall is 0.1 cm thick. Also received is soft tissue fragment 1.5x1 cm brownish white in colour. Cut surface shows a slit like case measuring 1 cm. The entire specimen was processed. On microscopic

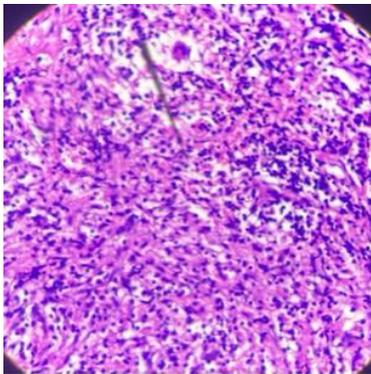
examination, sections show a laminated thin cyst wall with undulations resembling cysticercus cellulosa. Rest of the sections show acute on chronic reactive granulomatous inflammation. (Figure, 3, 4, 5)



**Figure 3:** (4X view - Laminated thin cyst wall with undulations resembling cysticercus cellulosa)



**Figure 4:** (10x view - Laminated thin cyst wall with undulations resembling cysticercus cellulosa)



**Figure 5:** (40x view - acute on chronic reactive granulomatous inflammation in the surrounding tissue)

Post surgery MRI brain was done which did not show any evidence of neurocysticercosis.

### 3. Discussion

The adult *T. solium* lives in the intestine of man, who is the only definitive host. There is usually only one adult worm, and it passes gravid proglottids in the stools. Eggs escape from the proglottids, contaminate the ground, and are then swallowed by pigs, the intermediate host. The eggs hatch in the pig's intestine, releasing oncospheres that enter the blood stream, and become encysted as cysticerci in muscle and other tissues. The life cycle is completed when man ingests raw or inadequately cooked pork containing cysticerci

(measly pork). Upon reaching man's intestine, the scoleceverts and attaches to the wall of the mucosa, where it develops into the adult tapeworm. Thus, the adult *T. solium* living in the intestine of man usually causes little harm. Serious problems may arise, however, when man accidentally becomes the intermediate host by harboring the larval stage (cysticercus). When man swallows eggs or proglottids, the oncospheres are released in the intestine, penetrate the mucosa, and are carried in lymphatics and blood vessels to various organs and tissues, where they develop into cysticerci. (1)

In case of cysticercosis due to *T. solium*, the incubation period may vary; also infected people may remain asymptomatic for years. In some endemic parts of the world (particularly in Asia), infected people may develop visible or palpable subcutaneous nodules. Gupta et al. have reported use of ultrasonography in order to diagnose subcutaneous cysticercosis that shows characteristic low reflective cysts with high reflective scolices. (5) Fine - needle aspiration cytology may additionally be a useful mode for diagnosis of subcutaneous cysticercosis. (8) Computed tomography (CT) imaging and MRI can confirm the diagnosis and also help to rule out neurocysticercosis. (9)

Cysticerci in the skin and subcutaneous tissue cause single or multiple painless swellings that gradually increase to produce papules that are about 2 cm in diameter. Cysticerci may lodge anywhere in the eye or brain. Depending upon their size, numbers, and location, they cause a variety of symptoms, including those of periorbital pain, flashes of light, grotesque shapes in the visual fields, and blurring or loss of vision, meningitis, hydrocephalus, Jacksonian epilepsy, and increased intracranial pressure. Purulent meningitis may complicate surgical procedures. Cysticercosis can be fatal. Involvement of other organs such as the heart, skeletal muscle, lungs, liver, and kidneys is usually without symptoms, even in heavy infections. (1)

The clinical significance of such subcutaneous lesions itself may be very less, however, they may act as warning sign for the presence of cysticercosis of the central nervous system. [8] Computed tomography (CT) imaging and MRI can confirm the diagnosis and also help to rule out neurocysticercosis. [9] While reviewing the literature, it has been reported that the eyelid is least common site affected in the eye. [10]

From the treatment perspective, surgical removal remains the gold standard for subconjunctival and eyelid cysticercosis. Medical therapy is recommended treatment for the extraocular muscle form and orbital cysticercosis. [11]

### 4. Conclusion

We have presented a rare case of an isolated eyelid cysticercosis, presenting as a benign eyelid mass, an epidermoid cyst. Thus, asymptomatic, small, seemingly innocuous subcutaneous swellings can be ignored by patients and sometimes by doctors too. This patient had the lump since 3 years. Proper, thorough investigation with surgery and histopathological examination must be recommended to diagnose unusual pathology. Such patients should also be evaluated thoroughly for underlying systemic disease. While a simple excision may be adequate for

cosmetic correction, isolated eyelid cysticercosis are uncommon and require a high degree of clinical suspicion. Only histopathological examination will establish final diagnosis.

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