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# ORBIAL DERMOID CYST: CLINICAL SCENARIO

**Ophthalomology**

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## ABSTRACT

In this case report, we describe a case of superotemporal orbital dermoid that came to our tertiary care center. An 8-year-old female presented with swelling of the left superolateral orbital region, which gradually increased over the past 3 years. A CT scan was performed, which showed a well-defined non-enhancing cystic lesion with thin internal septa in the extraconal space of the left orbit, in the superolateral compartment. Although the definitive diagnosis was not clear, it appeared to be a dermoid cyst on CT findings. Surgical excision of the mass was performed by the sub-brow approach and histopathological examination of the specimen was performed, which confirmed that it was a dermoid cyst. After the surgery, the swelling subsided.

## KEYWORDS

dermoid cyst, proptosis, orbital spaces, orbitotomy.

## INTRODUCTION

Dermoid cysts are benign choristomas, often present in the periorbital region in the pediatric population. They are one of the commonest orbital cystic lesions in children, accounting for 3% to 9% of all orbital tumors, with a mean of 4.7%[11].

They are divided based on their relationship to the orbital septum into either superficial (simple, exophytic) or deep (complicated, endophytic) dermoid cysts [1, 12]. They are rarely painful and in most cases do not affect the function of the eyes or eyelids [12]. Superficial lesions are mostly either medial or lateral and can be treated with a direct surgical approach. In contrast, deep lesions are often extensive, complicated and difficult to remove which require careful preoperative planning[1].

### Case Report

An 8-year-old girl child came to our outpatient department with a history of a mass in the superolateral anterior orbit. The patient's parents provided the medical history. The mass was noticed by the parents from the last 3 years, which was gradually increasing in size. At first it was a small swelling about the size of a pea, which has now grown to the size of a large almond (Fig. 1).

**Fig 1 : Preoperative picture of mass**

There was no history of trauma, no diplopia or blurred vision, or enlargement of the mass on bending or coughing. On examination, it was a soft to firm mass about 2.7 x 1.3 cm with a lobulated surface, the posterior border of which was not palpable. It was a nontender, non-pulsatile, irreducible mass, freely mobile medially with the lateral margin adherent to the underlying structure because the finger could not be insinuated laterally. The Valsalva maneuver showed no change in the size of the mass. The patient was referred for a computed tomography (CT) scan of the orbit, which showed a well-defined non-enhancing cystic lesion (6*6*8 mm AP*TR*CC) with thin internal septa in the extraconal space of the left orbit, anterior to the eyeball in the superolateral compartment extending up to the preseptal area, abutting eyeball posteriorly and lacrimal gland laterally (Fig. 2).

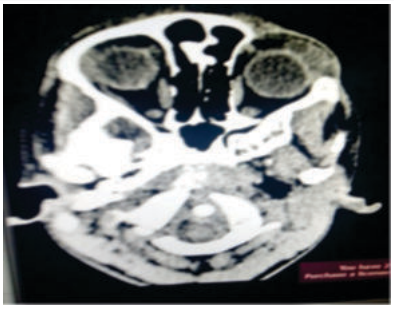

**Fig. 2 : CT scan of the patient showing mass**

Excision of the mass was performed through a sub-brow approach and was removed in toto (Fig. 3).

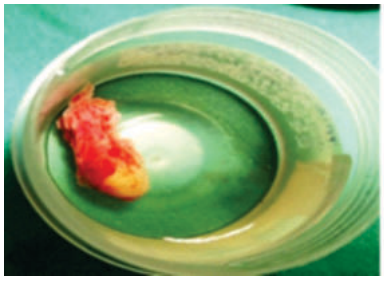

**Fig. 3 : Excised specimen**

Histopathology of the mass showed underlying fibro-collagenous tissue with hair roots and sebaceous gland thus a diagnosis of dermoid cyst was made. The postoperative appearance is shown in Fig. 4 and Fig. 5.

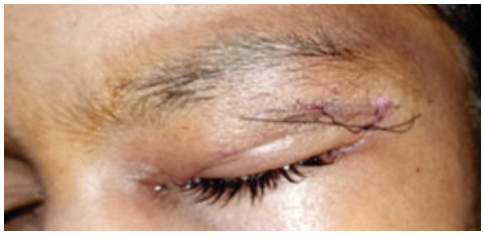

**Fig. 4 : Post op day1 photo**

**Fig. 5 : Post op day 7 photo after removal of skin suture**

## DISCUSSION

Dermoid tumors are choristomas, that is, congenital tumors arising from embryonic tissues displaced from their usual anatomic locations. They comprise 3 to 9% of all orbital masses with an average of 4–7%[11].

Head and neck dermoids arise as a result of sequesteration of surface ectodermal remnants "pinched off" at bone or along the embryonic closure lines [2,13,14]. Around 10% of dermoid of head and neck region[5] are orbital and mostly arise from the upper outer quadrant.

Dermoid tumors are slow growing and their symptoms depends on location and displacement of adjacent structures. Anterior dermoids are usually recognized early and more easily than the deep-seated ones which are detected late and present with complications such as visual and oculomotor disturbances [7]. Deep orbital demoids and large cystic leisons abutting globe usually displace eyeball and may also compress the optic nerve and the extraocular muscles which results in proptosis and restricted eye movements[3,1,6]. Deep dermoids frequently present with bone changes which include (a) fossa formation with bone attenuation (b) bone erosion, and (c) bone sclerosis.

The deep dermoids can extend beyond the orbit into the temporal fossa or intracranially so a complete and careful examination of mass and proper investigations are necessary[2]. Typically, oribital dermoid cysts lie in a perisutural location, lying in close proximity to bone. Imaging modalities such as ultrasonography, CT, and magnetic resonance imaging (MRI) of dermoid cysts are helpful in characterising the leisons as well as documenting their intracranial or intraorbital extension[3,4,8,9]. Management of dermoid cysts is complete surgical excision of mass with the cyst lining to prevent recurrence. Surgery is usually for cosmetic purposes, other indications are to alleviate the symptoms caused by mass effect of dermoid in the periorbital region, to prevent complications in cases of intracranial extension and also to confirm the diagnosis in cases of diagnostic dilemma[10].

Dermoids are identified clinically based on their location (i.e near the bone suture), cystic nature and slow growth. The differential diagnosis usually depends on the location of the mass. The solid tumors of the orbit should also be included in the differential diagnosis, especially if they are causing focal bone defect.

Surgical excision of deep dermoids can be complicated and tricky as they may involve adjacent orbital structures, so careful preoperative planning is necessary to assess the size, location, relation to adjacent structures, posterior extent, bone erosion and any extension intracranially, temporal fossa or into sinus. They frequently require anterior, lateral, or combined orbitotomy for total removal of mass. Whenever there is erosion into the intracranial space or the sinus, the orbitotomy can be integrated with a neurosurgical or otolaryngologic procedure to ensure complete excision. If total removal is not possible then marsupialization can be done[6].

Superficial leisons are easier to remove en bloc by direct approach to them. Intraoperative rupture of dermoid does not appear to result in early or late postoperative morbidity, if the total lining and contents of the dermoid are removed and thorough irrigation of remnant bed is done. Aim should always be complete surgical excision of mass with capsule intact to prevent dissemination of the contents that might trigger an acute inflammatory reaction and also to prevent the deposition of cells that could form a new cyst at the surgical site [1,6].

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