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IP International Journal of Ocular Oncology and Oculoplasty

Journal homepage: <https://ijooo.org/>

## Case Report

# Orbital dermoid cyst: Clinical scenario

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### ARTICLE INFO

#### Article history:

Received 25-09-20222

Accepted 17-10-2022

Available online 20-02-2023

#### Keywords:

Dermoid cyst

Proptosis

Orbital spaces

Orbitotomy

### ABSTRACT

In this case report we describe a case of superotemporal orbital dermoid who came to our tertiary care centre. An 8 year old female presented to us with a swelling of left superolateral orbital region progressively increasing for past 3 years. CT scan was performed which showed a well-defined non enhancing cystic lesion with thin internal septations in extraconal space of left orbit, in superolateral compartment. Although definitive diagnosis was not clear but the CT findings were consistent with a dermoid cyst. Surgical excision of mass was done through a sub-brow approach and histopathological examination of sample was done which confirmed it to be a dermoid cyst. Swelling was relieved post-surgery.

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## 1. Introduction

Dermoid cysts are benign choristomas, often present in the periorbital region in the paediatric population.<sup>1</sup> They are by far the most common orbital cystic lesions encountered in children, accounting for 3% to 9% of all orbital tumors, with an average of 4.7%.<sup>2</sup>

They can divided into either superficial (simple, exophytic) or deep (complicated, endophytic) dermoid cysts based on their relationship to the orbital septum.<sup>3,4</sup> They are rarely painful, and in most cases do not affect eyelid and ocular functions.<sup>4</sup> The superficial lesions are most frequently seen in temporal aspect and easy to remove. The deep lesions in contrast, were frequently extensive and difficult to remove, requiring careful preoperative planning.<sup>3</sup>

## 2. Case Report

A 8 year old girl presented to our outpatient department with history of mass in superolateral anterior orbit. History

was given by patient's parents. Mass was noticed by parents from last 3 years which was gradually increasing in size. Initially it was small pea sized swelling which gradually increased to a large almond size.(Figure 1). There was no history of trauma, any diplopia, blurred vision or increase in size of mass on bending or coughing. On examination it was a soft to firm, about 2.7 x 1.3 cm mass with lobulated surface whose posterior limit was not palpable. It was non-tender, non-pulsatile, non-reducible mass, freely mobile medially with lateral border adherent to underlying structure as finger could not be insinuated laterally. Valsalva maneuver showed no change in the size of the swelling. The patient was advised computed tomography (CT) scan of the orbit which showed a well-defined non enhancing cystic lesion (6 x 6 x 8 mm anteroposterior, transverse and craniocaudally with thin internal septations in left orbit extraconal space, anterior to the eyeball in superolateral compartment extending upto preseptal region, abutting eyeball posteriorly and lacrimal gland laterally (Figure 5).

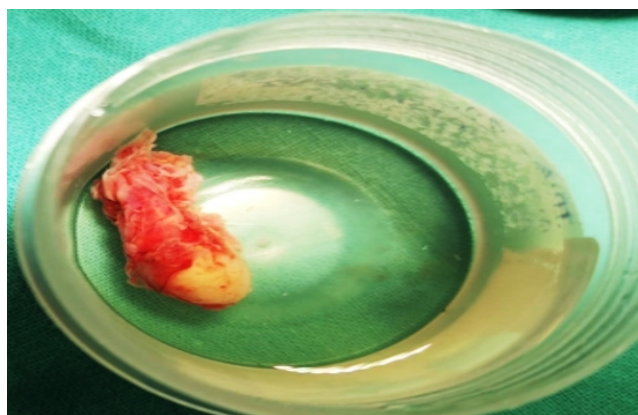
Excision of mass was done by sub brow approach and it was removed in toto (Figure 2). Histopathology of mass showed underlying fibro collagenous tissue with hair

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**Fig. 1:** Pre-operative picture of mass



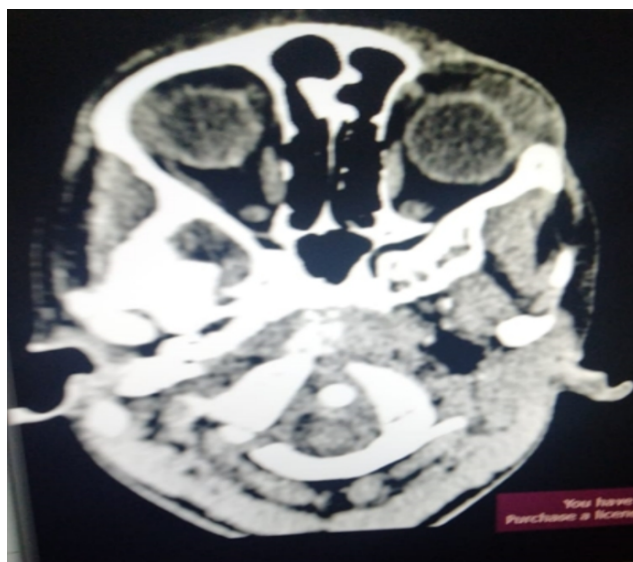
**Fig. 2:** Excised specimen



**Fig. 3:** Post op day1 photo



**Fig. 4:** Post op day 7 photo after removal of skin suture



**Fig. 5:** CT scan of the patient showing superotemporal mass

roots and sebaceous glands, which was consistent with the diagnosis of dermoid cyst. Post-operative appearance is shown in Figures 3 and 4.

### 3. Discussion

Dermoid cysts are developmental choristomas comprising 3 to 9% of all orbital masses with an average in pooled series of 4-7%.<sup>5</sup>

They arise from ectodermal sequestration in suture lines.<sup>3</sup> 10% of head and neck dermoids<sup>6</sup> are orbital, and in most series the upper outer quadrant dominates.

Natural history of dermoid is slow expansion depending on their site and displacement of adjacent structures. Anterior dermoids are easily recognised and treated early whereas deep seated ones are detected late and present with complications as visual and oculomotor disturbance<sup>7</sup> Large orbital cysts that may abut the globe or displace the globe and can compress the optic nerve & extraocular muscles leading to proptosis and restriction of eye movements.<sup>2,4,7</sup>

Through and careful investigation is necessary in order to distinguish between deep and superficial dermoids, since deep ones may extend beyond orbit to temporal fossa or intracranially.<sup>3</sup> Imaging modalities such as ultrasonography, CT scan, and magnetic resonance imaging (MRI) of the dermoid cyst are valuable in the diagnosis and characterization of benign lesion and also to demonstrate their intraorbital and intracranial extension.<sup>4,5,8-10</sup> Treatment of dermoid cyst is surgical en bloc excision, which is indicated for cosmetic purposes and to prevent complications in cases of intracranial extension.<sup>11,12</sup>

The location, relationship to bone, and cystic nature help to identify dermoids. The differential diagnosis depends

on the location of the mass. In the region of the lacrimal gland primary and secondary lacrimal tumours should be considered, especially if there is evidence of bony erosion or calcification. Medially retention cysts or mucocoeles can be distinguished by their relationship to the sinuses, evidence of focal destruction of the bones, and associated opacification of the sinuses. Rarely an encephalocele may occur medially where focal defect continuous with the cranial cavity, generally at the root of the nose. However, it may be difficult to distinguish between the two.

Any of the solid tumours of the orbit should be included in the differential diagnosis, especially if there is a focal bony defect.

The treatment of these lesions can be complicated owing to size, location, and involvement of orbital structures. The operative approach should be based on thorough preoperative assessment of size, location, extent, and relationship to adjacent structures.

The simple or superficial lesions are well handled by a direct approach over them. The deep ones may extend intracranially and require anterior, lateral or combined orbitotomy for total extirpation. As long as the total lining and contents of the dermoid are removed intraoperative rupture does not appear to lead to early or late postoperative morbidity. Complete surgical excision with intact capsule is done to prevent dissemination of the contents which otherwise can incite an acute inflammatory response. This is also to avoid the deposition of cells that could form a new cyst at the operative site.<sup>2,7</sup> Best management remains total removal and all attempts should be directed towards this.

#### 4. Conflict of Interest

None.

#### 5. Source of Funding

None.

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**Cite this article:** Srivastava N, Ahmad I, Srivastava AK, Sachdeva L. Orbital dermoid cyst: Clinical scenario. *IP Int J Ocul Oncol Oculoplasty* 2022;8(4):267-269.