A case report

Dermoid cyst of the orbit- A case report


Dept. of Oral and Maxillofacial Surgery
*Consultant at Face Clinic, Mangalore

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ABSTRACT

We describe a case of a dermoid cyst involving the lateral aspect of orbit of an adult treated at our ABSMIDS, and we review the literature on dermoid cysts. A 19-year-old man presented with right-sided supraorbital swelling. USG and magnetic resonance imaging scans were performed. Although a definitive diagnosis was unclear, the imaging findings were consistent with a dermoid cyst. The lesion was excised through a lateral brow incision. Dermoid cysts of the orbit are uncommon lesions that occur primarily in the pediatric population. In adults, orbital dermoids are more likely to present with bone erosion, and therefore they should be considered in the differential diagnosis for orbital and frontal bone lesions extending into the frontal sinus.

Keywords: Dermoid cyst, frontal sinus, orbit

INTRODUCTION:

Dermoid cysts are benign choristomas. In the pediatric population, they often present in the periorbital region. They are generally divided into deep and superficial lesions with deep lesions presenting later in life.\(^1\) We present the unusual case of a 19-year-old man with a deep intraorbital dermoid cyst.

CASE REPORT

A 19-year-old man presented with a history of right-sided supraorbital swelling since birth. Clinically perdurable ovoid lump gradually increasing in size roughly measuring around 23x8 mm arising superiorly from hairline up to the lateral outer canthus of right eye region, associated with no secondary signs and symptoms. On palpation swelling was soft, fluctuant and nontender.
USG revealed a 23 × 8-mm ovoid swelling in the lateral corner of the right eye. Magnetic resonance imaging (MRI) [T1, T1FS, T2, FLAIR sequences] show that majority of the content is fat and there is one single thin septa within. A tiny bleb of fluid is seen within. The entire lesion lies outside the bone and there is no bony indentation or defect.

Surgical excision was performed using a lateral brow incision. The skin and pretarsal orbicularis muscle were incised, and the mass was immediately visible. The mass was freed circumferentially with blunt dissection from the periorbital soft tissues. The periosteum around the bony defect was incised to free the portion of the mass. After removal of the mass, a curette was used to thoroughly remove any residual tumor. Subcutaneous and subcuticular suturing was done using 3.0 vicryl and 4.0 prolene. Pathological analysis revealed an epithelial lining with sebaceous glands and vellus hairs. The cyst contained lipid and keratin debris, consistent with a dermoid cyst. The incision healed with good aesthetic results.

Illustration 1: B

Clinical photograph showing A: Incision placement B: Excised cyst mass C: Surgical site after cyst excision D: Sutured surgical site
DISCUSSION
Dermoid cysts occur in three primary locations in the head and neck: the frontotemporal region, the periorbital region, and the nasoglabellar region. These sites lie at the confluence of the surgical expertise of maxillofacials, otolaryngologists, neurosurgeons, plastic surgeons, and ophthalmologists. At times, this calls for a multidisciplinary approach to resection. Ours is a case of an orbital dermoid. In general, these lesions present in childhood. When they occur deep within the orbit, they may escape diagnosis until adulthood when they present with ophthalmologic symptoms as well as erosion of nearby bony tissues.

Dermoid cysts are a subset of benign heterotopic neoplasms termed choristomas and account for up to 9% of pediatric orbital tumors. Etiologically, they are thought to derive from dermal and epidermal tissues trapped in the cranial fusion lines as the neural tube closes in embryogenesis. Histologically, they have a lining of squamous epithelium with dermal elements such as hair follicles, sebaceous, and sweat glands. Within the cyst, keratin, hair, smooth muscle, and lipid debris can be found.

When dermoids occur in the periorbital region, anterior lesions are diagnosed early. They tend to present as soft tissue swelling in the eyelid anterior to the frontozygomatic suture line. Due to this location, they are generally diagnosed in early childhood. Deeper orbital dermoids are rare and grow indolently, presenting in the teenage years and beyond. Pryor et al reviewed 49 cases of pediatric dermoid cysts and found the periorbital region to be the most common. Their study showed that 61% of cases presented periorbitally. Midline nasal and forehead dermoids accounted for only 16% of cases. Within the periorbital region, the lateral orbit (adjacent to the lateral canthus) was the most common location. The medial canthus was the second most common location. This corresponds to the frontozygomatic and the frontal-ethmoidal sutures, respectively. Chawda and Moseley reviewed the CT images of 160 patients with orbital dermoids. The majority of their patients were adults, with a mean age of 28. The older patient age was an unusual finding as orbital dermoids are generally tumors of childhood. They attributed this finding to the fact that the majority of pediatric lesions occur superficially and therefore fewer patients received preoperative imaging. The majority of their cases had a well-defined cyst wall with a central low-density region. However, calcifications and heterogeneity within the cyst can also be seen.

Deep lesions are more likely to present with adjacent bony changes. Nugent et al reviewed 17 CT scans of orbital dermoids. Eleven of 13 patients with deep orbital dermoids showed thinning or notching of adjacent bone. In three patients, the bony lesion eroded through the full thickness of the adjacent bone. The MRI appearance is variable and depends on the specific contents of the cyst. If there is lipid material within the cyst, it will appear hyperintense on T1-weighted imaging. Cysts containing higher levels of protein can appear hyperintense on both T1 and T2 imaging.

Complete surgical excision is curative. An upper-eyelid incision provides adequate exposure of most orbital lesions. Lesions invading deeply within the orbit may require a more aggressive approach. Craniotomy and neurosurgical involvement may be required for intracranial extension. A bicoronal approach may be required for exposure if there is extensive involvement of the frontal sinus.

REFERENCES

