**Title**

Facial Medial Dermoid Cyst – a case report.

**Abstract**

A facial medial dermoid cyst in a 7-year-old male child is presented along with its Computed tomography (CT) imaging scans. The CT scan images depict clear nasal bone indentation with no erosion. Dermoid cysts are a subset of benign heterotopic neoplasms termed choristomas and periorbital dermoid cysts account for up to 9-10% of paediatric of head and neck dermoid cysts. The periorbital dermoid may occur in two variants as per the plane of location: anterior (superficial) or deep. The presented case in this report is of anterior variety at frontonasal suture.

**Key** **words**: nasal dermoid, medial dermoid cyst congenital,proptosis, choristoma, intracranial extension.

**Introduction**

Dermoid cysts are a subset of benign heterotopic neoplasms termed choristomas arising from the epidermal rest cells pinched during embryogenesis by the underlying bony structures as they advance toward closure. In the paediatric population, they often present in the periorbital region accounting for approximately 10% of head and neck dermoid cysts. Most occur near the frontozygomatic or frontonasal suture. Rupture of the dermoid cyst can potentially lead to severe inflammatory reaction in the surrounding tissues though the overall prognosis is good [ 1-2].

This report presents a case of a management and radiology of a 7-year-old male child with a facial medial dermoid cyst occurring near the frontonasal suture.

**Case Report**

A 7-year-old male child, first in birth order, was brought with swelling at the bridge of the nose. The parents had noted a fullness in the area when the child was none months old and states that it has become progressively larger and clearly noticeable. The patient was born at full term by normal vaginal delivery and had normal development and reached all milestones. There was no other significant antenatal or postnatal history. On examination, there was a single, ovoid, non-tender, smooth, non-pulsatile, mobile, cystic, subcutaneous mass about 2cm x 1.5 cm on right side of root of the nose, inferior to head of right eyebrow and superior to medial canthus, with minimal surface erythema and absent impulse on coughing. CT Scan imaging shows a well-defined smooth margin fat-containing extraconal mass located at the right side of root of the nose with no intracranial extension. Bone window revealed a clear indentation no bony erosion and the orbital anatomy was maintained. There were neither perilesional inflammatory changes nor calcifications.

The location and presentation of this lesion were most consistent with a medial dermoid cyst, and hence excision of the lesion was planned. This was discussed with the patient's parents and informed consent was secured for excision of the lesion under general anaesthesia. The patient underwent an uncomplicated excision through a transverse 2 cm skin incision. Histopathological study of the lesion demonstrated a cystic structure lined with stratified squamous keratinizing epithelium and with skin adnexal structure elements in the cyst wall, consistent with a dermoid cyst. There were no postoperative complications with no recurrence at 6 years and the parents were satisfied with the outcome.



***Fig 1: A) External photograph (lateral view) demonstrates a mass on right side of root of the nose, under the head of the brow. B) External photograph (anterior view) demonstrates a mass on right side of root of the nose, under the head of the brow C) Immediate post excision image with a sutured transverse incision D) Well-defined smooth margin fat-containing extraconal mass located on right side of root of the nose. D) CT scan (bone window) showing clear indentation of right nasal bone but no bony erosion.***

**Discussion**

Periorbital dermoid cysts are congenital cystic lesions belonging to a subset of benign heterotopic neoplasms termed choristomas [1]. They are common in paediatric age-group and develop adjacent to the suture lines and progressively grow in tandem with the child’s maturation.

These lesions are believed to derive from dermal and epidermal rest cells trapped in the cranial fusion lines during embryogenesis as the neural tube closes [2]. Histologically, they have a lining of stratified squamous epithelium with dermal adnexa such as hair follicles, sebaceous, and sweat glands. The cyst contents include keratin, hair, smooth muscle, and lipid debris [3]. Dermoid cysts can be divided into anterior (superficial) and deep varieties [4].

Superficial dermoids have a classic presentation as in the case presented in this report, reporting as a painless, firm, somewhat mobile subcutaneous lumps. The lesions are usually discovered by the parents /guardians in the first year of their child’s life and with growth of the child, the periorbital facial fat decreases thereby making the cysts more prominent. Rarely the superficial dermoid may rupture due to direct trauma, extruding keratin and thence presenting with acute inflammatory features like periocular erythema, tenderness, and edema. Deeper orbital dermoids are rare and grow indolently, presenting in the teenage or even late adulthood with the slow onset of proptosis or globe dystopia and adjacent bony changes or erosion (5).

The most common location for the anterior dermoid cyst is at the superolateral aspect of the orbit at the frontozygomatic suture and they are less frequently encountered as medial lesions at the frontonasal suture as in the presented case. Because of their anterior location, these lesions do not usually cause globe displacement as in the presented case, but they have the significant potential to cause visually significant ptosis if surgical attention is not sought and lesion allowed to grow to a large enough size.

Generally, imaging studies such as computed tomography (CT) or magnetic resonance imaging (MRI) should be obtained for any lesion suspected of being a dermoid that is not in the superolateral quadrant of the orbit due to the propensity of orbital dermoids to dumbbell into adjacent structures. Imaging is also required if the dermoid is fixed and nonmobile or presents with inflammatory signs or fistulization, or if proptosis, globe dystopia, temporalis fossa swelling, or optic neuropathy are present [6].

The standard of care is complete surgical excision without rupture of cyst. The procedure is usually straightforward for anterior cysts but deep orbital cysts and may present a surgical challenge requiring a difficult approach.

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