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THE NASAL DERMOID: CLINICAL PRESENTATIONS AND MANAGEMENT. A 5 YEAR EXPERIENCE.

Otolaryngology

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ABSTRACT

Objective: To study the clinical presentations of nasal dermoids in children and adults and discuss its management.
Design: Retrospective study
Setting: Tertiary care hospital
Patients and methods: A total of 5 cases of nasal dermoids were studied and successfully treated.
Results: The average age of presentation was 6.2 years. The most common clinical presentation was a sinus pit with tuft of hair (n=3). Others included ill defined midline swelling of the nose, swelling at the fronto-nasal angle, and a medial canthal sinus. All patients underwent imaging work up. None of the patients showed radiological evidence of intracranial extension. No patient presented with recurrence. Final aesthetic outcome was satisfactory.
Conclusion: Nasal dermoid is a rare and cosmetically concerning congenital anamoly. Radiology helps to exclude multiple tracts and evidence of intracranial extension. Surgery and incision depends upon extent and position of lesion. Combined intracranial extracranial approach may be needed for extensive lesions. Recurrence is uncommon.

KEYWORDS:

Introduction

Nasal dermoid is a rare and cosmetically concerning congenital anamoly. The estimated incidence is 1:20000 to 1:40000 births.[1] It occurs due to incomplete obliteration of neuroectodermal tissue during the development of fronto-nasal region. The prenasal space, is the area of the junction of nasal bone and cartilages. Normally, a projection of dura protrudes through the "fonticulus frontalis" i.e. the space between the frontal and nasal bones or inferiorly into the prenasal space. This projection later regresses. However, if dura does not regress, attachments to the epidermis remain leading to trapped ectodermal elements. This forms a deep tract that can extend upto the foramen cecum.

5 cases of nasal dermoids that were diagnosed and treated successfully are reviewed. Timely diagnosis is essential as presentations range from cyst, sinus or nasal pit with tuft of hair. Surgical excision is the only therapeutic modality.

Methods

This series includes 5 patients of nasal dermoids treated at ESIC Medical College and Hospital, Faridabad at the Otolaryngology and Head & Neck surgery department. Detailed family history including intrauterine complications and medications used during pregnancy was taken. Other craniofacial anomalies were ruled out. Patients underwent radiological investigations such as sinogram and Contrast enhanced CT scan. MRI was done when intracranial extension was suspected. None of the cases showed intracranial extension.

Surgical Technique: Mainly 2 types of incisions were used. A midline nasal dorsal incision, where an elliptical incision encompassed the opening of the sinus on the nasal dorsum, and an external rhinoplasty incision. A third, lateral rhinotomy incision was used in one case where sinus was present near the medial canthus. All incisions were placed in the natural skin creases, respecting facial aesthetics. The attachment was traced superiorly upto the skull base. The most common finding was presence of hair and cheesy white material within the sinus tract. The cheesy material could be expressed from the sinus opening which further guided the trajectory of the tract. In other cases the tract was fibrous and cord like. The excised specimens were examined grossly and microscopically.

Results

3 patients were female, while 2 were male. Their ages ranged from 4 years to 21 years.

4 types of clinical presentations were encountered. Our youngest patient presented with cyst over the nasal dorsum (Fig 1). The oldest patient 21 years, also presented with cyst at the nasofrontal region with an accompanying sinus with hair near the root of the nose (Fig 2). The third patient presented with pit with hair at the midline of the nasal dorsum, while another presented with nasal pit at the dorsum with hair and a sinus near the left medial canthus (Fig 3). The last patient presented with a discharging sinus at the tip of the nose.

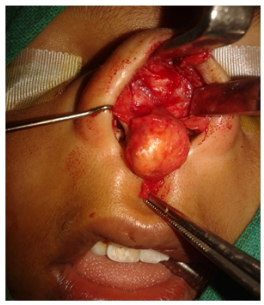

Fig 1. Nasal dermoid cyst being removed by external rhinotomy incision

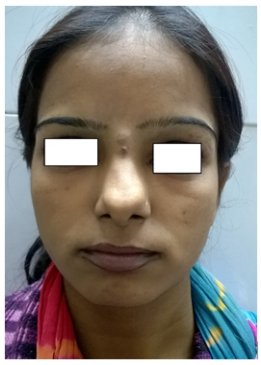

Fig 2. Adult patient with dermoid cyst at the naso-frontal region with sinus and hair at the root of the nose

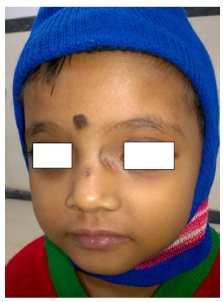

Fig 3 Nasal pit at the dorsum with continuing sinus tract at the left medial canthus.

History of repeated suppurations and discharge was present in 2 patients. No associated congenital anomalies were noted in 4 patients. However one patient had basilar invagination with compression and kinking of cervical medullary cord junction. None of the patient underwent any previous surgery. The tract of the dermoid extended from the pit on the skin of the nasal dorsum, went *over* the nasal cartilages and then proceeded *under* the nasal bones upto the foramen cecum. In 3 cases the tract could be excised only after out-fracture of the nasal bones. In one case where the cyst overlying the upper lateral cartilages was removed, the saddle deformity was corrected using conchal cartilage. The proximal end of the tract was fibrosed in 4 cases while it was tubular and expanded in 1 case. The incisions healed well in all cases. None showed complications in the form of tissue defects, CSF leak, sepsis, anosmia or recurrence.

Discussion

Nasal dermoid is a rare and deceiving clinical entity. It is often more complicated than it looks. [2]It is important to have a thorough understanding of its embryological development for adequate management. The most common clinical presentation as reported by Rahbar et al is a nasoglabellar swelling. In our study we found this in only 1 case. [3] Other clinical presentations include nasal pit, discharging sinus, midline dorsal nasal cyst, precanthal sinus. Infection may be a presenting feature in 25% cases. [4] A tuft of hair protruding from the punctum is pathognomic. [5] This finding was present in 3 of our patients. Nasal dermoids are usually seen at birth or early infancy. In our study the earliest age of presentation was 4 years. We also had a patient of 21 years who had a glabellar swelling. However she was only cosmetically concerned when she came for surgery. Most cases are confined to superficial nasal area (61%). Only 12 % extend to the cribriform plate. [6] Features of subcutaneous cyst or bifid crista galii, enlarged foramen cecum on CT scan may falsely indicate intracranial extension. [7] Thin sliced CT (1-3mm cuts) with contrast enhancement can better delineate bony defects.MRI is gold standard and is used to confirm intracranial extension. High intensity signal on T1 weighted images, in the vicinity of crista galli, in a new born should suggest presence of intracranial dermoid. A complete neurosurgical consultation should always be sought. Early intervention with complete excision of tract is vital to prevent potential risk of infection and nasal deformity. A judicious incision which provides access to cranial base and leaves an acceptable scar should be chosen. A number of different incisions to approach the nasal dermoid have been described in the last decade. These include a midline vertical incision (which we used in 4 out of 5 cases), transverse incision, lateral rhinotomy incision, external rhinoplsty incision. A degloving approach and an endoscopic approach which can be used to visualise the tract upto the dura of the anterior cranial fossa, have been described. If there is doubt regarding intracranial extension, a frozen section biopsy of the stalk on the nasal side of the cranial base should be undertaken before craniotomy.[8] If the biopsy suggests fibrous tissue without evidence of an epithelial tract the stalk can be sutured and the procedure is complete. Recurrence rate is slow and may occur after several years. So a long term follow up is essential.

Conclusion

Nasal dermoids are rare congenital anamolies that pose a diagnostic and cosmetic concern. The primary aim is complete surgical excision at the first operation. A number of surgical approaches are described, but the best approach should be chosen depending on the location of the dermoid and its extension. Biopsy is contraindicated in lesions with intracranial extension due to risk of CSF leak. Work up should include fine cut CT and MRI may be complimentary. Early surgical intervention prevents bone atrophy and nasal deformity.

Conflict of interest: none.

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