

Midline Nasal Tip Sinus

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ABSTRACT

Introduction

Congenital midline sinus over tip of nose is a rare clinical presentation. Accurate diagnosis should be done to rule out intracranial extension and to prevent recurrence. Appropriate surgical approach depends upon location, extent and degree of intracranial extension. Management entails complete surgical excision of sinus tract. We discuss a rare case, where external rhinoplasty approach was used for excising recurrent sinus and patient was disease free.

Case Report

A 29 year old male patient with midline nasal tip sinus presented in our institute with history of opening over tip of nose since childhood associated with recurrent episodes of discharge from opening. Our objective is to present clinic-radiological-pathological profile of congenital nasal sinus along with review of literature.

Discussion

Nasal dermoid is rare embryological anomaly of ectodermal and mesodermal origin. Radiological imaging should be considered to rule out any intracranial extension. Goal of management is complete surgical excision with meticulous pre-operative and surgical planning to avoid complications and recurrence. External rhinoplasty provides best surgical exposure and allows excision of sinus tract.

Keywords

Midline Nasal Tip Sinus; Nasal Dermoid Sinus Cyst; Rhinoplasty, External

Congenital midline embryological anomalies of nose are rare clinical presentation. These congenital midline lesions are rare estimated at 1:20,000 to 1:40,000 live births^{1,2} with male predominance.³ It constitutes 1%-3% of all dermoids and 4%-12% of head and neck dermoids.⁴ This includes dorsal nasal sinus, columellar sinus of nose, nasal dermoid cysts, others include gliomas and encephalocoele which may have intracranial extension.

Case Report

A 29 year old male presented to ENT outpatient department with history of opening over tip of nose

since childhood which was asymptomatic till age of 3 years when the patient started having recurrent episodes of discharge from the opening. It was associated with intermittent, mucoid, 5-6 episodes/year, non-blood stained, non-foul smelling, white colour discharge from opening and occasional nasal obstruction.

He was operated for the similar complaints in 2003 in private hospital under LA. Patient was asymptomatic for 3-4 months and symptoms recurred again. There was no history of trauma, swelling over nose. There was no history of any other ENT complaints.

Local examination revealed an irregular vertical scar mark surgery (~1 cm) of previous surgery on undersurface of tip of nose. A single opening (~0.3cm) was present on undersurface of tip of nose at mid- point of scar mark. (Fig. 1) No discharge could be expressed from sinus opening on pressing. Skin surrounding nose was normal in color.

Anterior rhinoscopy was suggested of a left high DNS with right spur touching right inferior turbinate. On probing, 2cm long sinus tract found was found. Rest of

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Fig. 1. Sinus opening on tip of nose at mid-point of scar mark

ENT examination was within normal limits.

Patient underwent NCCT Nose and PNS which was suggestive of bilateral maxillary sinusitis and mild left DNS.

MRI face and nose showed a linear T2 STIR hyperintense tract around 4cm seen extending from subcutaneous tissue of tip of nose into underneath anterior part of nasal septum. A ramification was seen extending superiorly into subcutaneous tissue of nose in midline for length of 2cm. (Fig. 2) No intracranial extension of the tract was seen.

Surgical excision of sinus tract was planned under general anaesthesia after taking written and informed consent for the same. Under GA, Gull wing incision (External Rhinoplasty) was marked on columella. (Fig. 3)

Part was cleaned, draped and positioned. Methylene blue dye was injected in the sinus tract. Metallic probe was passed to guide complete excision of sinus tract. Elliptical incision was made and skin with soft tissue was removed. Inverted-V shape incision was made in mid-columellar region. Incision was extended to caudal margins of medial crura of alar cartilage upto dome. Columellar flap was elevated off the alar cartilage. Lower lateral, upper lateral cartilages and nasal bone was exposed (Fig. 4). Sinus tract was found to be going upto lower part of nasal bones in midline at junction of upper lateral cartilage and nasal bone in subcutaneous

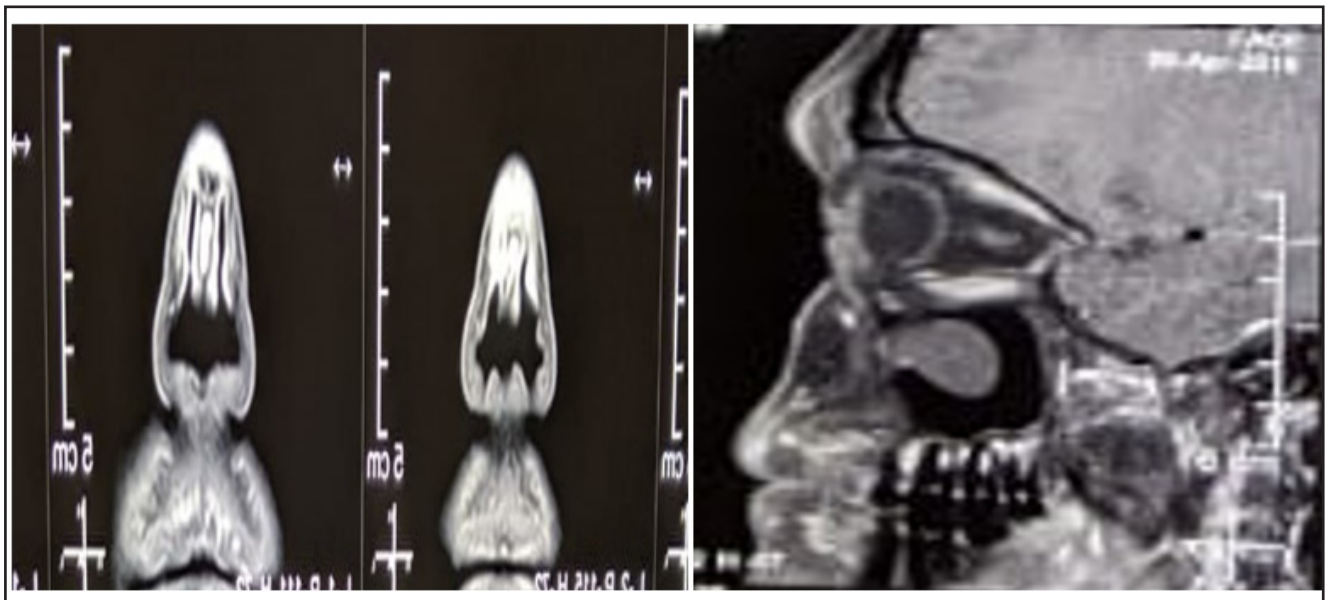


Fig. 2. MRI showing Ramification extending from subcutaneous tissue of tip of nose up to anterior part of nasal septum.



Fig. 3. Gull wing incision marked on columella.



Fig. 4. Columellar flap elevated off the alar cartilage exposing lateral cartilages and nasal bone.

plane.

Soft tissue tract was removed. Nasal bone was drilled at tract site. Surgicel® was kept and flap repositioned. Wound was closed with Vicryl® 4-0 (internal) and Ethilon® 5-0 (skin). Steri Strips® were applied. Bilateral nasal cavities packed with one full merocel each. Patient was discharged on postoperative day 2 after pack removal and followed up on postoperative day 7 for suture removal. Post-operative period was uneventful and there was no recurrence in a 2 year follow-up.

Discussion

Nasal dermoid is rare embryological developmental anomaly of ectodermal and mesodermal origin.⁵ Most theories for pathogenesis are “Prenasal theory” i.e During development of frontal skull base, dura mater retreating from prenasal space adheres to prenasal skin.¹ and “Superficial theory” i.e abnormal congenital fusion at nasal root with submucosal trapping of ectoderm between two medial fusing nasal processes. Many authors reported intracranial extension in 6%⁵-45%⁶ of midline nasal dermoid cysts. There is association

of other congenital anomalies in 5-41% cases.⁷ like aural atresia, mental retardation, spinal column abnormalities, hypertelorism, albinism, cleft lip and palate, tracheoesophageal fistula, cardiac, genital and cerebral anomalies.⁷

Radiological imaging such as CT scan and MRI should be considered in order to know the size, extent of the lesion and to rule out intracranial extension.⁸ Open approaches include transverse, vertical, lateral rhinotomy, external rhinoplasty.^{9,10} External rhinoplasty provides good surgical exposure, scar tissue and redundant subcutaneous tissue are more easily excised and valve region is well protected. Goal of management is complete surgical excision with meticulous pre-operative and surgical planning to avoid complications and to prevent local recurrence.

Any intracranial extension should be ruled out in pre-operative evaluation of any sinus over tip of nose. Biopsy is contra-indicated in cases with intra-cranial connections due to risk of CSF leakage. Complete surgical excision of sinus tract should be done to prevent recurrence after thorough investigations. External rhinoplasty provides best surgical exposure and allows complete surgical excision of sinus tract.

References

1. Hughes GB, Sharpino G, Hunt W, Tucker HM. Management of the congenital midline nasal mass: A review. *Head Neck Surg.* 2(3):222-33
2. Midline cysts of the nasal dorsum: Embryologic origin and treatment: Midline cysts of the nasal dorsum: Embryologic origin and treatment. *Laryngoscope* 2015; 125(3):533
3. Rahbar R, Shah P, Mulliken JB, Robson CD, Perez-Atayde AR, Proctor MR, et al. The Presentation and Management of Nasal Dermoid: A 30-Year Experience. *Arch Otolaryngol Neck Surg.* 2003; 129(4):464
4. Kelly JH, Strome M, Hall B. Surgical Update on Nasal Dermoids. *Arch Otolaryngol - Head Neck Surg.* 1982; 108(4):239-42
5. Schlosser RJ, Faust RA, Phillips CD, Gross CW. Three-dimensional computed tomography of congenital nasal anomalies. *Int J Pediatr Otorhinolaryngol.* 2002; 65(2):125-31
6. Wardinsky TD, Pagon RA, Kropp RJ, Hayden PW, Clarren SK. Nasal dermoid sinus cysts: association with intracranial extension and multiple malformations. *Cleft Palate-Craniofacial J Off Publ Am Cleft Palate-Craniofacial Assoc.* 1991; 28(1):87-95
7. Morgan DW, Evans JNG. Developmental nasal anomalies. *J Laryngol Otol.* 1990; 104(5):394-403
8. Wyatt M, Nasal obstruction in children. In: Gleeson MJ, Clarke RC. *Scott-Brown's Otorhinolaryngology: Head and Neck Surgery.* 7th ed. Great Britain: Hodder Arnold; 2008. p. 1073-74.
9. Pensler JM, Bauer BS, Naidich TP. Craniofacial dermoids. *Plast Reconstr Surg.* 1988 Dec;82(6):953-8
10. Pollock RA. Surgical approaches to the nasal dermoid cyst. *Ann Plast Surg.* 1983 Jun;10(6):498-501.