

Nasal Dermoid Cyst: A Case Report

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Abstract

Nasal dermoid sinus cysts (NDSCs) are rare neoplasms in the median line of the nasofrontal area. Unlike other dermoid cysts, a NDSC can manifest as a cyst, sinus, or fistula, and may extend intracranially. Nasal dermoid cysts usually present at birth and are commonly diagnosed by 3 years of age. An incidentally detected nasal dermoid cyst in an adult patient is extremely rare. In this case, a 23-year-old female with a history of intermittent serous thick discharge from a pit in the nasal columella since early childhood. Examination of the nasal cavity showed mild septal deviation to the left side, dorsal hump, wide nasal bone, a small pit-sinus at the columella, over projected nose, and wide bulbous down rotated nasal tip. The findings were suggesting nasal dermoid cyst, so a magnetic resonance imaging (MRI) was done for the patient to confirm the diagnosis. The MRI findings showed that there are 3 small cysts at the nasal septum anteriorly with a small fistula connecting the anterior inferior 2 cysts with no involvement to the intracranial cerebrospinal fluid (CSF) space. During the surgery, an open rhinoplasty approach was used. The trans-columellar incision was made around the fistula, and the tract was identified using a lacrimal probe and methylene blue. The dissection around the tract was continued until the sac was identified in the area of the membranous septum, and it was removed and sent for histopathology. The surgery then continued in a regular full rhinoplasty fashion. In conclusion, dermoid cyst of the nasal septum is a rare congenital lesion, especially in adults. After a thorough history taking and physical examination, a preoperative high-resolution axial and coronal CT and/or MRI is essential for diagnostic and operative planning. The treatment of choice for nasal dermoid cysts is complete surgical excision with clear margins. Surgical strategies usually depend on the location and extent of the lesion. Recurrence is uncommon and often easily managed.

Keywords

Dermoid, Cyst, Rhinoplasty, Nasal Dermoid Cyst, Rhinology, Case Report

1. Introduction

Midline congenital nasal lesions are rare, occurring in 1 of every 20,000 to 40,000 live births [1]. The most common of these are nasal dermoid cysts, followed by encephaloceles and gliomas; other midline nasal lesions include epidermoid cysts, hemangiomas, teratomas, neurofibromas, lipomas, and lymphangiomas [2].

Dermoid cyst is a rare developmental anomaly that often arises in lines of embryologic fusion. It is a subcutaneous cyst that is originated in ectoderm. It contains multiple ectodermal structures and also mesodermal elements [1]. Most of nasal dermoid cysts are found before 3 years of age and rarely found in adults [3]. Nasal dermoid cysts represent 11% to 12% of head and neck dermoids, and 1% of all body dermoids. However, nasal dermoid cysts are distinct from other dermoids because of their ability to exist as a cyst, sinus, or fistula, which can extend to deeper structures and they can also extend into the intracranial portion [4].

The diagnosis of nasal dermoid cysts is usually made by typical clinical symptoms and radiologic finding. Workup should include fine-cut CT and complementary MRI should be considered to check the lesion and intracranial extension [5]. Nasal dermoid cysts occurrences require intervention usually because of complications with cyst expansion such as chemical meningitis, infection, and sequelae of mass effect such as new-onset seizures [6].

Complete excision of nasal dermoid is mandatory in order to prevent recurrence. Multiple approaches have been described, including vertical incision, transverse incision, lateral rhinotomy, medial paracanthal, ushaped dorsal incision, external rhinoplasty, degloving procedure, transglabellar incision, brow incision, bicoronal incision and endoscopic [7]. With proper surgical planning, complete excision of nasal dermoid sinus cysts can be achieved with low rates of recurrence.

2. Case Presentation

A 23-year-old medically free female visited our hospital complaining of on/off thick discharge from the bottom of the columella. During the visit the patient did not have any nasal symptoms, such as rhinorrhea, nasal bleeding, or nasal swelling. She presented only with nasal obstruction and intermittent serous thick discharge from a pit in the nasal columella since early childhood. Physical examination of the nasal cavity showed mild septal deviation to the left side, dorsal hump, wide nasal bone, a small pit-sinus at the columella, over projected nose, and wide bulbous down rotated nasal tip. The findings were suggesting nasal dermoid cyst, so a magnetic resonance imaging (MRI) was done for the patient to confirm the diagnosis. The imaging findings showed that there are 3 small cysts at the nasal septum anteriorly with a small fistula connecting the anterior inferior 2 cysts (Figure 1). The third cyst location is in the midline at the superior nasal septum. There was no fistulous track communicating the cysts with

the intracranial cerebrospinal fluid (CSF) space. Based on these findings, a diagnosis of dermoid cyst of the nasal septum was made. During the surgery, an open rhinoplasty approach was used. The trans-columellar incision was made around the fistula, and the tract was identified using a lacrimal probe and methylene blue (**Figure 2**). The dissection around the tract was continued until the sac was identified in the area of the membranous septum, and it was removed and sent for histopathology (**Figure 3**). The surgery then continued in a regular full rhinoplasty fashion. The patient was followed 1 week after the surgery for external splint and silastic sheet removal and was doing fine. Then followed up again after 3 months and showed good recovery result with no complaints and no signs of recurrence.

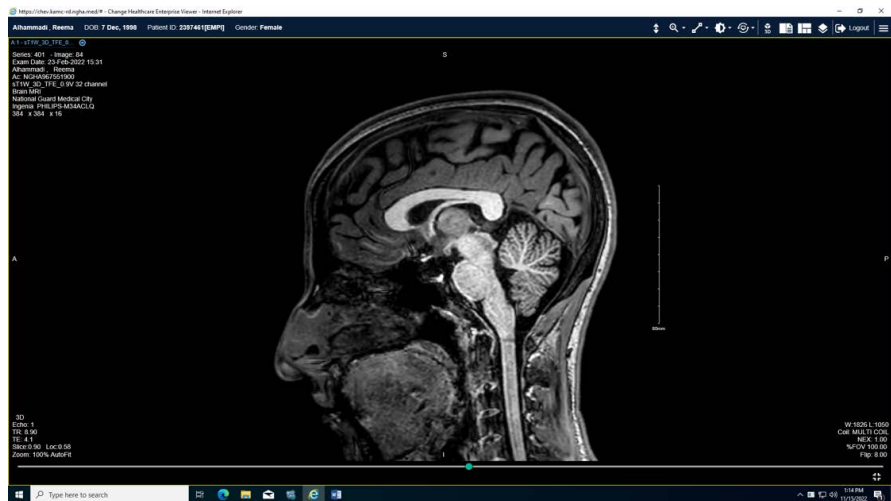


Figure 1. MRI scan showing the cysts at the nasal septum.

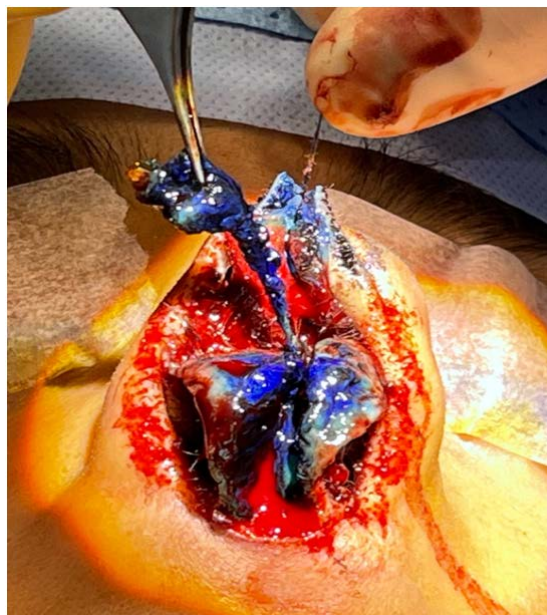


Figure 2. Intra-op photograph of the sac being identified with the injection of methylene blue.



Figure 3. Post-op photograph showing the size of the dissected sac.

3. Discussion

Most of nasal dermoid cysts are found before 3 years of age and rarely found in adults [8]. The pathogenesis of nasal dermoid cysts nasal dermoid cysts. Nasal dermoid cysts represent 11% to 12% of head and neck dermoids, and 1% of all body dermoids [3]. However, nasal dermoid cysts are distinct from other dermoids because of their ability to exist as a cyst, sinus, or fistula, which can extend to deeper structures and they can also extend into the intracranial portion [4].

Nasal dermal cysts usually present at a young age as a mass from the glabella to the columella. Nasal dermal cysts can open onto the dorsal nasal skin as an external dimple or a small pit containing a tuft of hair [9]. They are confined to the superficial nasal region in up to 50% of cases, but intracranial extension occurs in approximately 10% to 45% of these lesions [8]. In this case, the lesion developed in the nasal septum, the tract was from the columella to the frontal sinus, and there was no intracranial extension.

The diagnosis of nasal dermoid cysts is usually made by typical clinical symptoms and radiologic findings. The most important point for the preoperative diagnosis of nasal dermoid cysts is to identify the presence or absence of intracranial extension. CT and MRI are helpful for assessing the location and extension of the lesion and for determining the most appropriate surgical approach and procedure [5]. In our case, we performed both CT and MRI preoperatively. The differential diagnosis of nasal dermoid cysts includes encephalocele or glioma [2].

The treatment of choice for nasal dermoid cysts is complete surgical excision with clear margins. If nasal dermoid cysts are left untreated, there are susceptible to recurrent infections and may progress to cause osteomyelitis, meningitis, or intracranial abscess [6]. The method of surgical approach depends on the extent

and location of the lesion. Adequate exposure must be achieved for complete surgical excision in order to reduce the risk of recurrence. After incomplete excision, the recurrent rate has been reported in 50% to 100% of cases [3] [4]. In this case, we successfully performed the external rhinoplasty approach. This approach offers a good surgical exposure and an excellent cosmetic effect.

Dermoid cyst of the nasal septum is a rare congenital lesion. In addition, an incidentally detected nasal dermoid cyst in an adult patient is extremely rare. We present an unusual case of an adult patient with an incidentally diagnosed dermoid cyst of the nasal septum, which was successfully removed by an open rhinoplasty approach.

The recurrence rate of nasal dermoid cysts is very low, but could occur several years after the initial surgery. Therefore, a long-term follow-up of patients with a history of nasal dermoid cysts is necessary [1].

4. Conclusion

In conclusion, dermoid cyst of the nasal septum is a rare congenital lesion. In addition, an incidentally detected nasal dermoid cyst in an adult patient is extremely rare. A preoperative high resolution axial and coronal CT and/or MRI is essential for diagnostic and operative planning, to ensure the lesion is responsive to this less invasive approach and to rule out intracranial extension [10]. The treatment of choice for nasal dermoid cysts is complete surgical excision with clear margins, complete excision of these lesions is essential to prevent recurrence and should not be compromised for the sake of cosmesis [7]. Surgical strategies depend on the location and extent of the lesion, ranging from local excision to a combined intracranial-extracranial approach. Recurrence is uncommon and often easily managed.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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