

Nasal Dermoid Cyst: A Case Report

Khalid Al Hawsawi¹, Ashwaq K. Alosaimi², Atheer Aljohani¹, Lein Azzhary³, Norah Algethami³

Review began 01/23/2022

Review ended 01/28/2022

Published 01/30/2022

© Copyright 2022

Al Hawsawi et al. This is an open access article distributed under the terms of the Creative Commons Attribution License CC-BY 4.0., which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

1. Dermatology, King Abdulaziz Hospital, Makkah, SAU 2. Dermatology, Umm Al-Qura University, Makkah, SAU 3. Medicine, Umm Al-Qura University, Makkah, SAU

Corresponding author: Ashwaq K. Alosaimi, ashwaq.kh.alosaimi@gmail.com

Abstract

A dermoid cyst (DC) is a rare, benign congenital skin lesion that can occur anywhere on the skin and take any shape. DC is clinically diagnosed through imaging and biopsy. The usual treatment of choice for DC is surgical excision to prevent any local complications, such as inflammation, infection, and bone resorption. The type of surgery depends on the size, location, and extension of the cyst. When the cyst presents in certain areas, such as the nose, face, and scalp, surgery can be difficult owing to the possibility of an intracranial connection. Therefore, imaging is usually performed before intervening surgically. Here, we present the case of a two-year-old boy with no medical or surgical history who presented to our dermatology clinic with a slow-growing mass on his nose. During the consultation, the mass was examined, a complete medical history was obtained, and the patient was advised to undergo imaging, which revealed that the mass was a DC. Nevertheless, no deep connection was observed on imaging, and the mass was surgically removed without any complications.

Categories: Dermatology, Pathology, Pediatric Surgery

Keywords: dermoid cyst, nasal dermoid cyst, nasal glioma, skin lesion, encephalocele

Introduction

A dermoid cyst (DC) is a benign, cystic lesion formed when the ectoderm fails to separate from the neural tube. It is lined by stratified squamous epithelium and typically presents on the neck, scalp, and face [1]. DC usually presents as a painless, slow-growing lesion that is diagnosed within the age of 1-3 years [1,2].

During the surgical removal of DC, intracranial communication is possible; therefore, an exclusion is required before biopsy or surgical intervention [2]. When a patient presents with a mass near to or at the facial midline, it is critical to consider other differential diagnoses that might be similar in clinical presentation, such as nasal glioma, lipoma, and encephalocele [3]. The use of magnetic resonance imaging (MRI) helps not only in the diagnosis of DC but also in ruling out the presence of any intracranial communication [3,4]. Here, we report the case of a congenital nasal DC in a concerning location near the midline.

Case Presentation

A two-year-old boy was brought to our clinic by his parents who were concerned about the presence of a growing mass on the upper right side of the child's nose since birth. A detailed history of the patient revealed that he lived a healthy life devoid of any medical complications or surgery. However, the mass continued to slowly increase in size with age. Prenatal, natal, and postnatal histories were unremarkable. Family history did not reveal any similar conditions, and the parents were not consanguineous.

Skin examination showed a 1 × 1 cm dome-shaped, subcutaneous nodule on the upper right side of the nasal bridge that was erythematous, firm, noncompressible, and nontender (Figure 1). The transillumination test was negative. No other skin lesions were found elsewhere on the body. The examination of the hair, nails, and mucous membranes was normal. Differential diagnoses included nasal glioma, encephalocele, congenital hemangioma, sebaceous cyst, and lipoma. MRI of the facial region with contrast showed a nasal dorsum lesion measuring 10 × 16 × 10 mm with a draining sinus tract anterior to the nasofrontal junction with no intracranial extension (Figure 2).

How to cite this article

Al Hawsawi K, Alosaimi A K, Aljohani A, et al. (January 30, 2022) Nasal Dermoid Cyst: A Case Report. Cureus 14(1): e21725. DOI 10.7759/cureus.21725



FIGURE 1: The dace of the child showing 1 × 1 cm dome-shaped, erythematous, nontender, firm, noncompressible, subcutaneous nodule on the upper right side of the nasal bridge.

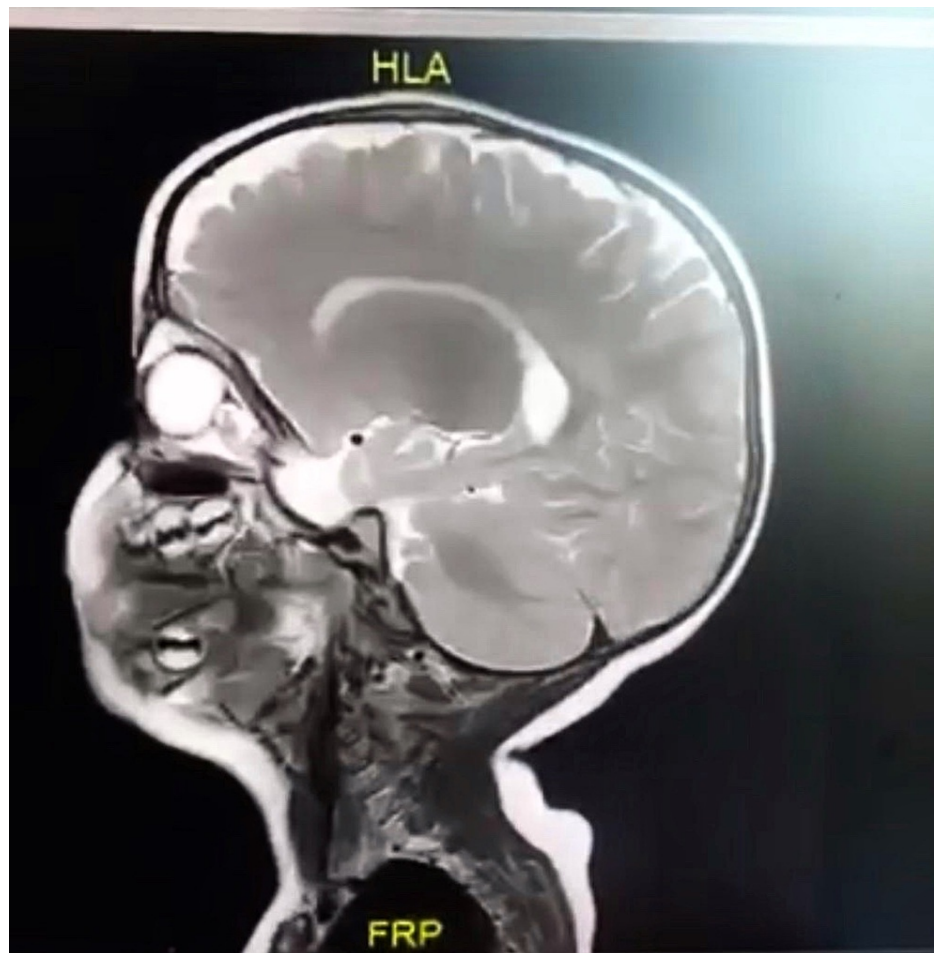


FIGURE 2: MRI of the face showing the nasal dorsum lesion measuring 10 × 16 × 10 mm with draining sinus tract anterior to the nasofrontal junction with no intracranial extension.

MRI: magnetic resonance imaging

Based on these findings and clinical presentation, a diagnosis of DC without intracranial extension was made. The patient was referred to a pediatric surgeon, and the lesion was excised and sent for histopathological examination. The histopathology report confirmed the diagnosis of DC, showing a polypoidal tissue covered by unremarkable keratinized stratified squamous epithelium and underlying skin adnexal, including hair follicles and sebaceous glands (ectodermal in origin). Lobules of mature adipose tissue and skeletal muscle bundles separated by a thin, fibrous capsule (mesodermal in origin) were also noted (Figure 3).

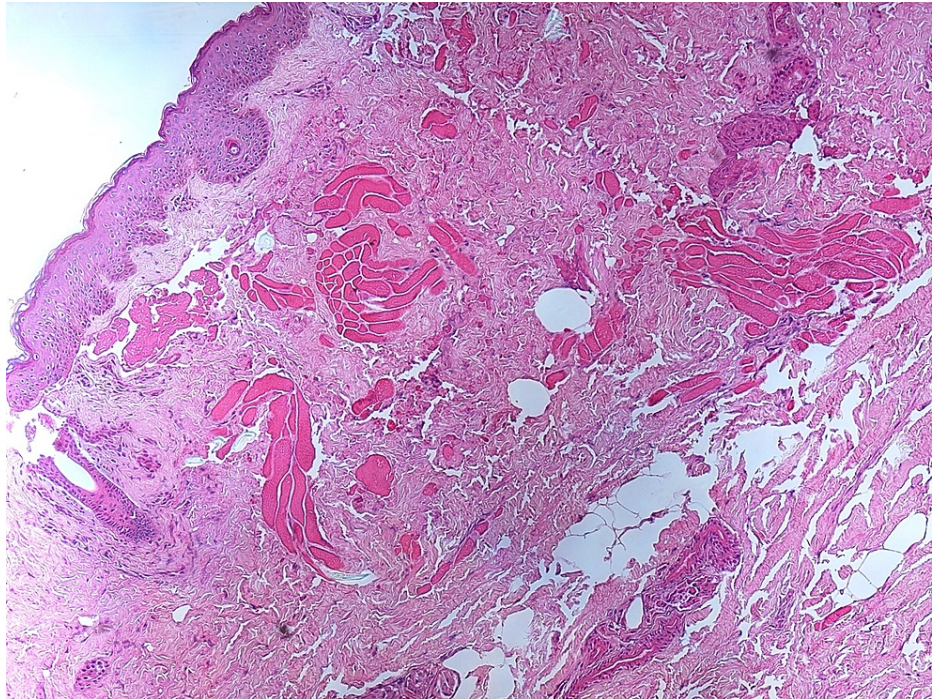


FIGURE 3: Histopathologic features of the excised skin lesion showing a polypoidal tissue covered by unremarkable keratinized stratified squamous epithelium with underlying skin adnexal including hair follicles and sebaceous glands (ectodermal in origin). Lobules of mature adipose tissue and skeletal muscle bundles separated by a thin, fibrous capsule (mesodermal in origin) were also noted.

Discussion

A nasal DC is a rare congenital and developmental condition. It presents as a nontender, mobile subcutaneous nodule. Although it commonly appears around the ages of 1-3 years, it can appear at any age [1,5]. It can also occur anywhere on the skin, deep under the skin, or in the interosseous space [5]. The most common location is in the orbital ridge region, with no association or deep extension [3,6]. Approximately 3% of DCs are located in the nasal midline, including the glabella, nasal dorsum, and columella. Because of the connection between the nasal and cranial cavities, the presence of deep extension and central nervous system communication is possible. Therefore, MRI should be performed for midline masses before further invasive procedures to prevent complications, such as meningitis [5,7]. Moreover, some experts recommend performing imaging for lesions close to the midline area [3,5]. In our case, the DC was present near the nasal midline; however, imaging did not show any intracranial extension or communication. Therefore, surgical excision could be safely performed by a pediatric surgeon. In addition, the removed cyst was histopathologically analyzed, which confirmed the diagnosis of DC.

The differential diagnoses in our patient included nasal glioma, encephalocele, congenital hemangioma, sebaceous cyst, and lipoma [5,8]. A nasal glioma is an ectopic, neuroectoderm from early development that presents as a firm, noncompressible, flesh-colored nodule. It is typically found at the root of the nose [6,9]. In contrast, an encephalocele is a herniation of cranial contents through a defect in the skull. It is formed when the separation of the neuroectoderm from the surface ectoderm fails during embryogenesis [6,10]. Encephalocele is usually found at the occiput, dorsal nose, orbit, or forehead. It is characterized by an increase in size when the child cries, compressibility to palpation, and a positive transillumination test [5,6,11].

Conclusions

Nasal DC is a rare congenital skin lesion that should be differentiated from nasal glioma and encephalocele. Imaging studies should be performed for midline masses to rule out intracranial connections and prevent the occurrence of complications. In our case, the presenting DC was near the midline; therefore, imaging was performed with caution before any surgical intervention.

Additional Information

Disclosures

Human subjects: Consent was obtained or waived by all participants in this study. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

References

1. Howard R: Cutaneous markers of congenital malformations: diagnosis and management. *Adv Dermatol.* 1999, 15:1-30.
2. Paller AS, Pensler JM, Tomita T: Nasal midline masses in infants and children. Dermoids, encephaloceles, and gliomas. *Arch Dermatol.* 1991, 127:362-6.
3. Menditti D, Laino L, Ferrara N, Baldi A: Dermoid cyst of the mandibula: a case report. *Cases J.* 2008, 1:260. [10.1186/1757-1626-1-260](https://doi.org/10.1186/1757-1626-1-260)
4. Pushker N, Meel R, Kumar A, Kashyap S, Sen S, Bajaj MS: Orbital and periorbital dermoid/epidermoid cyst: a series of 280 cases and a brief review. *Can J Ophthalmol.* 2020, 55:167-71. [10.1016/j.jcjo.2019.08.005](https://doi.org/10.1016/j.jcjo.2019.08.005)
5. Denoyelle F, Ducroz V, Roger G, Garabedian EN: Nasal dermoid sinus cysts in children. *Laryngoscope.* 1997, 107:795-800. [10.1097/00005537-199706000-00014](https://doi.org/10.1097/00005537-199706000-00014)
6. Montolio-Marzo S, González-Valdivia H, Casas-Gimeno E, Sebastian-Chapman L, Prat-Bartomeu J: Dermoid cyst: outcome analysis in a pediatric referral hospital. *Ophthalmic Plast Reconstr Surg.* 2020, 36:478-80. [10.1097/IOP.0000000000001608](https://doi.org/10.1097/IOP.0000000000001608)
7. Gasparella P, Singer G, Spindel S, et al.: Nasal glial heterotopia: a rare interdisciplinary surgical challenge in newborns. *Pediatr Med Chir.* 2021, 43:10.4081/pmc.2021.240
8. Hoffmann TK, Scheithauer MO, Sommer F, Lindemann J, Haberl EJ, Friebe-Hoffmann U, Theodoraki MN: Surgery of anterior skull base lesions in children. *Ann Otol Rhinol Laryngol.* 2017, 126:245-53. [10.1177/0003489416685321](https://doi.org/10.1177/0003489416685321)
9. Cauchois R, Laccourreye O, Bremond D, Testud R, Küffer R, Monteil JP: Nasal dermoid sinus cyst. *Ann Otol Rhinol Laryngol.* 1994, 103:615-8. [10.1177/000348949410300806](https://doi.org/10.1177/000348949410300806)
10. Eldesouky MA, Elbakary MA: Orbital dermoid cyst: classification and its impact on surgical management. *Semin Ophthalmol.* 2018, 33:170-4. [10.1080/08820538.2016.1182636](https://doi.org/10.1080/08820538.2016.1182636)
11. Klein O, Simon E, Coffinet L, Joud A, Ghetemme C, Marchal JC: [Nasal dermal sinus in children: a review based on a series of 6 cases]. *Neurochirurgie.* 2014, 60:27-32. [10.1016/j.neuchi.2013.10.123](https://doi.org/10.1016/j.neuchi.2013.10.123)