Ulutas Med J 2023;9(2):106-109
DOI: 10.5455/umj.20230518033004

CASE REPORT OPEN ACCESS

An Unusual Mid-Line Nasal Mass in a Child: A Case Report

Anara K. Zhanbaeva[1] · **Oğuz Güvenmez**[2] · **Hüseyin Keskin**[3] · **Adylbek Zhanbaev**[4]

[1] *Department of Clinical Pharmacology, Osh State University, International Medical Faculty, Osh city, Kyrgyzstan*
[2] *Department of Otorhinolaryngology, Osh State University, International Medical Faculty, Osh city, Kyrgyzstan*
[3] *Department of Otorhinolaryngology, Mersin Private Su Hospital, Mersin, Turkey*
[4] *Department of General Surgery, Osh State University, International Medical Faculty, Osh city, Kyrgyzstan*

Congenital midline nasal masses are rare anomalies with a prevalence of 1 in 20,000 to 40,000 births. These masses include nasal glioma, dermoid cyst, lipoma, hemangioma, and encephalocele. Timely diagnosis and appropriate surgical management are essential for optimal outcomes. We report the case of a 3-year-old girl presenting with a firm, non-fixed, slightly erythematous midline nasal mass, and a right nasal encephalocele. Radiological evaluation, including computed tomography (CT) and magnetic resonance imaging (MRI), confirmed the presence of both lesions with no connection between them. The patient underwent successful excision of the nasal dorsal mass and endoscopic encephalocele repair. Postoperative recovery was uneventful, and the patient was discharged without complications. Pathological examination of the excised nasal dorsum sample revealed findings consistent with a dermoid cyst. This case report highlights the co-occurrence of an encephalocele and a dermoid cyst, emphasizing the importance of thorough radiographic evaluation for accurate diagnosis. The surgical management, which included skin closure using an advancement flap without grafting, resulted in a faster patient recovery time and a reduced hospital stay.

Keywords: Congenital midline nasal mass, dermoid cyst, encephalocele, computed tomography (CT), magnetic resonance imaging (MRI), endoscopic repair, advancement flap, surgical management, pediatric case report

Introduction

Pediatric nasal masses represent a diagnostic challenge due to their relatively rare occurrence and diverse differential diagnosis (1). An unusual mid-line nasal mass in a child may be indicative of various underlying conditions, which could range from benign congenital anomalies, such as a dermoid cyst or encephalocele, to more serious malignancy (2). The clinical presentation can be ambiguous, often including symptoms like nasal obstruction, epistaxis, or a visible external deformity. However, for instance, these masses may remain asymptomatic, leading to delayed diagnosis and treatment (3-5).

Corresponding Author: Oğuz Güvenmez, MD; Department of Otorhinolaryngology, 331 Lenin Avenue, Osh 723500, Kyrgyzstan
ORCID: 0000-0002-9318-1044
E-mail: Oguzguvenmez001@hotmail.com
Received: Mar 23, 2023 **Accepted**: May 9, 2023
Published: June 9, 2023

This is an Open Access article distributed under the terms of Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, or reproduction in any area, original work is properly cited.

The Ulutas Medical Journal © 2023

Case Presentation

A 3-year-old girl presented on the midline nasal dorsum with an atypical firm, non-fixed, slightly erythematous mass measuring approximately 2x2 cm, an uncommon size for such mass. Physical examination revealed a mass explicitly located in the anterior region of the right side of the nasal cavity, causing an obstruction. The patient experienced symptoms such as open-mouth sleeping, snoring, attention deficit, constant nasal congestion, nasal discharge, and difficulty learning due to the growth of the mass on the nasal dorsum. The mass had been present since birth and had progressively increased in size, noticed as a 2x3 mm lesion on the nasal dorsum at birth.

Visual examination was regular and confirmed that the mass did not obstruct the visual field, thus eliminating the potential risk for amblyopia. Imaging studies, including a computed tomography (CT) scan, revealed a mass on the nasal dorsum with smooth surfaces, solid components, and microcysts but caused no bone defects on the nasal bone, a relatively unusual finding. Furthermore, magnetic resonance (MR) imaging with contrast identified a right nasal encephalocele. Interestingly, the mass on the nasal dorsum was independent of encephalocele. A neurosurgery consultation was obtained as necessary.

The patient underwent excision of the nasal dorsal mass and endoscopic encephalocele repair. No graft was used following the nasal dorsal mass excision—the encephalocele repair involved harvesting a graft from the fascia lata. The patient experienced no postoperative complications, and no cerebrospinal fluid (CSF) leakage was observed during the 3-day follow-up. Pre- and postoperative photographs of the patient are shown in Figure 1.

Pathological examination of the excised nasal dorsum sample revealed hypertrophied fibrous tissue containing a foreign body reaction and eccrine gland structures in the dermis. The skin tissue was covered with stratified squamous epithelium. These findings are consistent with a dermoid cyst.

Materials and Methods

The surgical procedure was initiated with an endoscopic repair of the nasal encephalocele. The region of the encephalocele was cauterized using a nasal bipolar coagulator, facilitating a reduction in the mass size towards the cranium. Subsequently, a graft was harvested from the fascia lata and applied to the anterior ethmoid area's defect using fibrin tissue adhesive. Attention was then shifted to the mass on the nasal dorsum. A regional hydrodissection was performed to isolate the mass.



Figure 1. Pre-operative and Post-operative photograph

The mass excision was carried out from the upper to lower midline of the nasal dorsum. The defect was closed using an advancement flap with 5/0 polydioxanone sutures. Throughout the procedures, meticulous attention was paid to minimizing trauma to surrounding tissues. The patient was then closely monitored during the postoperative period for any potential complications, including cerebrospinal fluid leakage. The excised tissue sample from the nasal dorsum was sent for histopathological examination to confirm the diagnosis and further understand the nature of the mass.

Discussion

Congenital midline nasal masses are rare, with a prevalence of 1 in 20,000 to 40,000 births (1). Differential diagnosis of midline nasal masses includes nasal glioma, dermoid cyst, lipoma, hemangioma, and encephalocele (2). The nasal dermoid was commonly present as a midline mass and may be located on the nasal dorsum or the nasoglabellar region (3).

An exciting aspect observed during the treatment was a tissue resembling granulation tissue seen in foreign body reactions. A foreign body reaction is a complex process where the body responds to a foreign object, such as surgical sutures, splinters, or implants, forming granulation tissue. Further study on occurrence and implications of this in congenital nasal mass treatment could be a topic of interest.

Computed tomography (CT) and magnetic resonance imaging (MRI) scans are the gold standards for radiographic evaluation of nasal dermoids. MRI may be sufficient to determine intracranial extension (4,5). Advancement flaps are important reconstructive options after skin mass removal. The flaps are mainly used for defects located on the superior two-thirds region of the nose (6,7). A notable aspect of this case is the closure of the skin using an advancement flap without a graft following tumor excision. This approach facilitated a faster recovery for the child compared to grafted reconstruction.The length of stay was reduced due to the accelerated recovery (8).

The treatment of congenital nasal dorsal masses is typically surgical. It's crucial to approach surgeries, especially in children, with great caution, given the potential impact on their psychological development. The findings from this case highlight the importance of meticulous surgical techniques.

An encephalocele and a dermoid cyst co-occurred incidentally in this patient, as there is no physical connection between two lesions. This presents unique learning point and extends our understanding of the complexity and variability of congenital nasal dorsal masses. In the one-year follow-up period, no recurrence or growth was observed at the excision site.

In conclusion, this case report demonstrates the co-occurrence of an encephalocele and a dermoid cyst of the nasal dorsum, with no connection between the two. The successful surgical management, which included skin closure with an advancement flap without grafting, highlights the potential benefits of this technique in reducing patient recovery time and length of hospital stay. The careful handling of such cases, including long-term follow-up, adds to our understanding of congenital nasal dorsal masses and can potentially improve the overall outcomes for affected children.

Conflicts of Interest

The authors have no conflicts of interest.

Ethical Statement

The research conducted and reported in this case study, "An unusual mid-line nasal mass in a child: A Case Report", was carried out in full compliance with accepted international and national ethical standards for clinical research. The research procedures adhered to the principles of the Declaration of Helsinki and its subsequent amendments, which provide guidelines on the ethical aspects of medical research involving human subjects, including

research on identifiable human material and data. The clinical data presented in this report were collected and analyzed with the explicit consent of the patient's legal guardians. The consent process involved explaining the purpose, methods, potential benefits, and risks associated with the research. The patient's anonymity and privacy have been rigorously maintained throughout the study and the publication process, with any identifying information removed from the report. The study protocol was reviewed and approved by the Institutional Review Board (IRB) at the authors' home institution, ensuring that all procedures adhered to ethical standards for research and clinical practice. The IRB operates in accordance with ICH-GCP guidelines and the ethical principles that have their origin in the Declaration of Helsinki. In conclusion, the authors affirm that all clinical investigation was conducted according to the principles expressed in this Ethical Statement. No part of this research involved any undue risk to the participants, and all involved parties have been treated with dignity, respect, and with due regard for their rights and welfare.

Reference

1. Verney Y, Zanolla G. Midline nasal mass in infancy: a nasal glioma case report. Eur J Pediatr Surg 2001;11:324-7
2. Salati SA, Rather AA. Congenital intranasal glioma. Case Rep Surg. 2011;175-209
3. Rahbar R, Shah P, Mulliken JB, et al. The presentation and management of nasal dermoid: a 30-year experience. Arch Otolaryngol Head Neck Surg 2003;129:464–471
4. Bloom DC, Carvalho DS, Dory C, et al. Imaging and surgical approach of nasal dermoids. Int J Pediatr Otorhinolaryngol 2002; 62:111–122
5. Penslar JM, Bauer BS, Naidich TP. Craniofacial dermoids. Plast Renconstr Surg 1988;82:953–959
6. Salmon PJ. Repair of the nasal sidewall. Br J Dermatol. 2014; 171:17–22
7. Vinciullo C. Reconstructing the nasal dorsum. Br J Dermatol. 2014; 171:7–16
8. Ogawa Y, Ogawa Y. Lateral nasal advancement flap for reconstruction of the nasal sidewall and dorsum. Arch Plast Surg. 2020 Jan;47(1):102-105

Contact Details

Anara Keneshovna Zhanbaeva
Clinical Pharmacology, Osh State University, International Medical Faculty, Osh city, Kyrgyzstan
E-Mail: janbaeva.anara@mail.ru
ORCID: 0009-0005-4407-9130

Oğuz Güvenmez
Otorhinolaryngology, Osh State University, International Medical Faculty, Osh city, Kyrgyzstan
E-Mail: Oguzguvenmez001@hotmail.com
ORCID: 0000-0002-9318-1044

Hüseyin Keskin
Otorhinolaryngology, Mersin Private Su Hospital, Mersin, Turkey
E-Mail: drhuseyinkeskin@outlook.com
ORCID: 0000-0002-5256-329X

Adylbek Zhanbaev
General Surgery, Osh State University, International Medical Faculty, Osh city, Kyrgyzstan
E-Mail: mr.janbaev@mail.ru
ORCID: 0009-0008-0303-2848

How to cite?
Zhanbaeva AK, Guvenmez O, Keskin H, Zhanbaev A. An Unusual Mid-Line Nasal Mass in a Child: A Case Report. Ulutas Med J. 2023;9(2):106-109
DOI: 10.5455/umj.20230518033004