CASE REPORT

DOI: 10.15713/ins.bhj.220

Congenital Unilateral Choanal Atresia with Adenoid Hypertrophy: A Case Report

ABSTRACT

Congenital choanal atresia is a rare developmental anomaly characterized by failure of communication between the nasal cavity and nasopharynx. Bilateral choanal atresia usually presents in the neonatal period with respiratory distress, whereas unilateral choanal atresia often presents late because of subtle symptoms. We report the case of a 6-year-old female child presenting with unilateral nasal discharge since birth. Diagnostic nasal endoscopy and computed tomography (CT) of the paranasal sinuses confirmed left-sided congenital choanal atresia associated with adenoid hypertrophy and pan-sinusitis. The patient underwent endoscopic repair of choanal atresia using a posterior septal flap along with coblator-assisted adenoidectomy. Postoperative recovery was uneventful, and the patient is on regular follow-up.

Key words: choanal atresia, pediatric skullbase surgery, pedicled nasoseptal flap

INTRODUCTION

Choanal atresia is a congenital malformation resulting from the persistence of the Bucco nasal membrane or abnormal mesodermal adhesions during embryological development, leading to obstruction of the posterior nasal aperture.[1] The estimated incidence is approximately 1 in 5,000 to 8,000 live births, with unilateral choanal atresia being more common than bilateral disease.[2] Females are affected more frequently, and the right side is more commonly involved in unilateral cases.[3]

Unlike bilateral choanal atresia, which presents as a neonatal emergency due to airway obstruction, unilateral choanal atresia may remain undiagnosed until later childhood because patients usually present with chronic unilateral nasal discharge, nasal obstruction, or recurrent sinusitis.[4] Diagnostic nasal endoscopy and computed tomography (CT) are essential for confirmation and surgical planning.[5]

We present a rare case of congenital unilateral choanal atresia associated with adenoid hypertrophy and pan-sinusitis in a 6-year-old child managed successfully with endoscopic choanal atresia repair and coblator-assisted adenoidectomy.

CASE REPORT

A 6-year-old female child presented to the otorhinolaryngology outpatient department with complaints of persistent unilateral nasal discharge from the left nasal cavity since birth. The discharge was non-foul smelling and associated with persistent nasal obstruction. There was no history of respiratory distress, cyanotic spells, epistaxis, trauma, or previous nasal surgery.

On anterior rhinoscopic examination, excessive nasal secretions were noted in the left nasal cavity. Diagnostic nasal endoscopy was performed under appropriate precautions, which revealed left-sided choanal atresia. The right nasal cavity demonstrated significant adenoid hypertrophy obstructing the nasopharyngeal airway.

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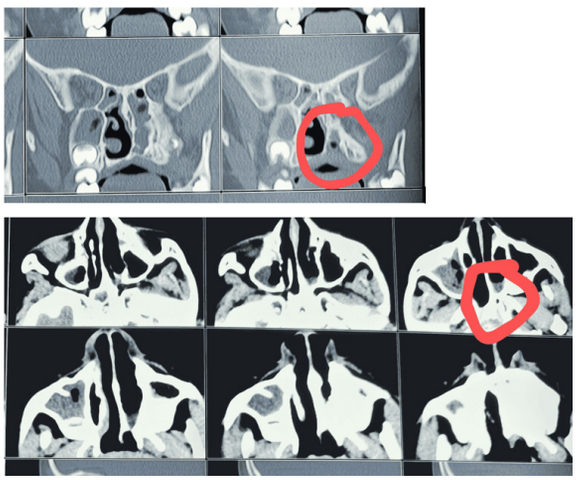
INVESTIGATIONS

Computed tomography (CT) scan of the paranasal sinuses was advised for further evaluation and surgical planning. CT imaging confirmed:

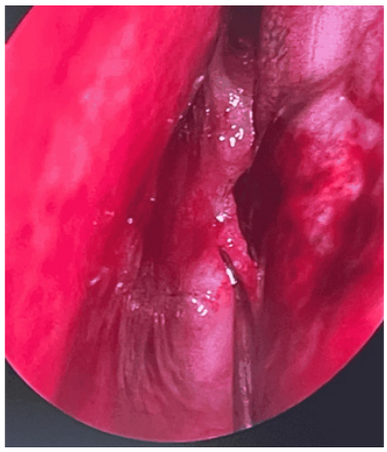
- Left congenital choanal atresia
- Pan-sinusitis involving multiple paranasal sinuses
- Significant adenoid hypertrophy

Preoperative CT Scan



The associated sinusitis was attributed to chronic nasal obstruction secondary to choanal atresia and adenoid hypertrophy.

Preoperative Endoscopic Photograph



SURGICAL MANAGEMENT

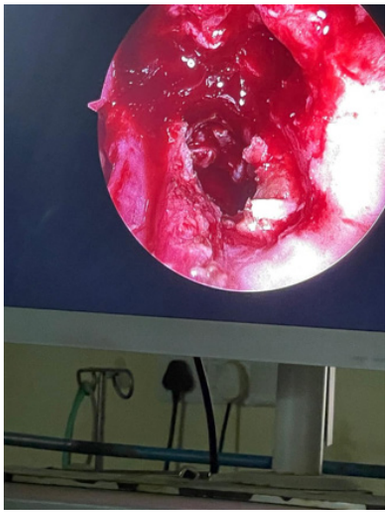
After obtaining informed consent from the patient's guardians and performing a complete pre-anesthetic evaluation, the patient was planned for surgical correction under general anesthesia.

Endoscopic transnasal repair of the left choanal atresia was performed. A posterior septal flap was elevated and utilized during reconstruction to reduce raw mucosal exposure and minimize restenosis. Adequate widening of the posterior choana was achieved under endoscopic guidance.

Simultaneously, coblator-assisted adenoidectomy was performed to address the associated adenoid hypertrophy and improve nasopharyngeal airway patency.

Hemostasis was secured, and the postoperative period was uneventful.

Postoperative Endoscopic Photograph



Postoperative Clinical Photograph

DISCUSSION

Choanal atresia is the most common congenital nasal anomaly.[1] Approximately 60–70% of cases are unilateral and frequently present later in childhood due to the absence of life-threatening airway compromise.[3] Chronic unilateral rhinorrhea and nasal obstruction are the hallmark symptoms in unilateral disease.[4]

The atretic plate may be bony, membranous, or mixed, with mixed bony–membranous types being the most common.[2] CT imaging remains the gold standard for diagnosis because it accurately delineates the thickness and composition of the atretic plate and identifies associated sinonasal abnormalities.[5]

In the present case, the patient had associated adenoid hypertrophy and pan-sinusitis. Chronic nasal obstruction caused impaired sinus drainage, predisposing the child to recurrent sinonasal infection and inflammation.

Endoscopic transnasal repair is currently considered the preferred surgical approach because it provides excellent visualization, reduced morbidity, and favorable long-term outcomes.[4,5] Various adjunctive techniques such as mucosal flaps, stenting, topical mitomycin-C, and postoperative dilatation have been described to reduce restenosis rates.[9,10]

The posterior septal flap used in our case helped in mucosalization of the neochoana and may contribute to reduced postoperative restenosis. Coblator-assisted adenoidectomy provided simultaneous management of nasopharyngeal obstruction with minimal tissue trauma and bleeding.

Long-term follow-up is essential because restenosis remains the most common postoperative complication after choanal atresia repair.[9,10]

CONCLUSION

Congenital unilateral choanal atresia should be suspected in children presenting with persistent unilateral nasal discharge

and nasal obstruction since birth. Diagnostic nasal endoscopy and CT scan are essential for accurate diagnosis and operative planning. Early surgical intervention can prevent chronic sinonasal complications. Endoscopic choanal atresia repair combined with management of associated adenoid hypertrophy provides favorable functional outcomes.

PATIENT CONSENT

Written informed consent was obtained from the patient's guardians for publication of clinical details and images.

How to cite this article: Mehta T, Patel A, Ganvit S, Hindia V. Congenital Unilateral Choanal Atresia with Adenoid Hypertrophy: A Case Report. Bombay Hosp J 2026;68(2):12-14.

Conflicts of Interest: None. **Source of Support:** None.

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