

Recurrent Rhinitis and Grade 4 Adenoid Hypertrophy in a 10-Year-Old: A Clinical Perspective

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Abstract:

Adenoid hypertrophy is a frequent cause of upper airway obstruction in children, leading to nasal congestion, mouth breathing, and snoring. This report discusses a 10-year-old girl with Grade 4 adenoid hypertrophy and recurrent infections, indicating possible immune dysfunction. Examination revealed purulent nasal discharge, and imaging showed significant nasopharyngeal soft tissue thickening (22 mm). Initial medical treatment provided limited relief, necessitating adenoidectomy. Post-surgery, the patient's symptoms improved significantly. This case highlights the need for early diagnosis and a comprehensive approach to managing severe adenoid hypertrophy in paediatric patients.

Keywords — Adenoid hypertrophy, Waldeyer's lymphatic ring, Snoring, Mouth breathing, adenoidectomy, Sinusitis.

I. INTRODUCTION

Adenoid hypertrophy is the enlargement of the adenoids (pharyngeal tonsil), which may occur with or without acute or chronic infection. This condition is associated with mechanical obstruction and chronic inflammation in the nasopharynx, leading to various local (nasal and ear-related) and systemic changes and sequelae [1,2]. It is a common cause of upper airway obstruction in paediatric patients, potentially leading to comorbid conditions such as nasal obstruction, snoring, sleep apnea, recurrent otitis media, sinusitis, and craniofacial abnormalities [3]. Adenoid is a part of Waldeyer's ring plays a crucial role in the development of "immunological memory" in younger children. Adenoid hypertrophy occurs in first 4 years of life and gradually involutes between ages of 6 and 16 years [4]. Waldeyer' lymphatic ring consists of lymphoid tissue masses located at the junction of the roof and posterior wall of the nasopharynx [5].

The symptoms of adenoid hypertrophy in children vary depending on the affected structure. Common symptoms include rhinorrhoea, nasal breathing difficulty, persistent cough, snoring, sleep-related breathing issues, and difficulty swallowing. When the adenoids become enlarged and obstruct the nasopharynx, they can cause eustachian tube dysfunction, leading to otitis media with effusion. Additionally, nasopharyngeal obstruction and related infections may contribute to the development of sinusitis [6].

Adenoid grading:

Adenoids were categorized into the following 4 grades based on the percentage of adenoid tissue that cause the blockage of posterior choana [6]

Grade	Percentage of obstruction	Description
Grade I	0%-25%	Mild obstruction
Grade II	26%-50%	Moderate obstruction
Grade III	51%-75%	Severe obstruction
Grade IV	76%-100%	Extreme obstruction

This case report presents a unique case of Grade 4 adenoid hypertrophy in a child with a history of recurrent infections, suggesting a possible underlying immune dysfunction.

CASE REPORT

A 10-yr old female patient presented to the department of ENT at SBMCH & RI In Renigunta, Tirupati, with chief complaints of nasal obstruction associated with running nose, mouth breathing and snoring. She had a history of recurrent episodes of rhinitis and frequent infections since childhood, suggesting a mildly immunocompromised status. She also had a history of hyperthyroidism and was on medication. Clinical examination revealed a nose filled with purulent discharge.

Diagnostic Work-up:

Radiographic findings showed marked posterior nasopharyngeal soft tissue thickening measuring approximately 22 mm, leading to a significant narrowing of the nasopharyngeal air column. Upon review, all laboratory investigations are within expected physiological limits.



Treatment and Outcome

The patient was initially managed with medical therapy, including xylometazoline nasal drops,

antibiotics and symptomatic relief with Sinarest syrup. Later she underwent an adenoidectomy. Postoperatively, she was prescribed with nasal steroids, antibiotics, and vitamin supplementation was continued. The patient showed significant symptomatic improvement, with the resolution of nasal obstruction, snoring, and mouth breathing. She was advised to maintain regular follow-up to monitor for recurrence and assess immune function.

DISCUSSION

This case highlights the complexity of adenoid hypertrophy management in children with recurrent infections and potential immune dysfunction. While conservative therapy with nasal steroids can be effective in mild cases, surgical intervention becomes necessary in severe cases with persistent symptoms.

CONCLUSION

Early identification and appropriate management of adenoid hypertrophy are crucial to prevent complications such as chronic otitis media, sinusitis, and sleep-disordered breathing. This case underscores the need for a multidisciplinary approach, considering both airway obstruction and potential immune dysfunction in paediatric patients with recurrent infections

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