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Short Communication

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Modification of endoscopic adenoid grading: introduction of Grade 5 Adenoids

Abstract

Background: Adenoid hypertrophy is a common cause of upper airway obstruction in children and is associated with mouth breathing, Halitosis, recurrent upper respiratory infections, otitis media with effusion, sleep-disordered breathing, and craniofacial changes.[1] Existing radiological and endoscopic grading systems, such as the Fujioka adenoid–nasopharyngeal ratio and the Clemens and McMurray endoscopic classification, primarily assess the degree of choanal obstruction and aid in determining the need for adenoidectomy. However, these systems do not adequately address the surgical difficulty encountered in extremely large adenoids.

Objective: To propose a modification of the existing endoscopic grading system by introducing a Grade 5 category for massive adenoid hypertrophy and to highlight its surgical implications.

Methods: Based on intraoperative endoscopic observations, a new Grade 5 classification is proposed for adenoids that extend anteriorly into the nasal cavity, resulting in non-visualization of surgical instruments such as the curette or coblation wand during transnasal endoscopic assessment under general anesthesia. The surgical challenges and technical considerations associated with these cases were analyzed.

Results: Grade 5 adenoids represent a subset of severe hypertrophy not encompassed by current classifications. These adenoids significantly increase operative complexity and often require modification of the surgical approach, including transoral visualization with angled endoscopes, retropalatal debulking and staged clearance under direct vision. Recognition of this category allows surgeons to anticipate technical difficulties, select appropriate instruments, and plan operative strategies to achieve complete adenoid removal while minimizing residual tissue and recurrence.

Conclusion: Massive adenoid hypertrophy extending into the nasal cavity is not uncommon and poses unique surgical challenges. This necessitates a modification of existing classification of Adenoids to anticipate and circumvent surgical challenges.

Keywords: adenoids, surgical techniques and challenges, residual adenoids

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Introduction

Adenoid hypertrophy with or without faucial Tonsillar hypertrophy is a leading cause for upper airway obstruction in children leading to a spectrum of diseases – Breathing difficulty, mouth breathing, facial dysmorphism (Adenoid facies), recurrent upper respiratory infections, Middle ear effusion with hearing loss, Sleep disorders and its associated morbidities.[2]

The Adenoids hypertrophy has been classified by lateral X ray neck soft tissue and nasal endoscopic assessment of its size compared to the choanal space and relation with surrounding structures.

The classifications presently used are helpful in correlating symptoms with Adenoid size helpful in establishing indications for Adenoidectomy.[3]

Grading of the adenoid hypertrophy in X ray was done according to the system devised by Fujioka M, et al.[2] using adenoid nasopharyngeal ratio & Clemens and MacMurray endoscopic grading in patient who underwent nasal endoscopy (Table 1).[3]

Table 1 Radiological grading of Adenoid hypertrophy[2]

Grade	A/N Ratio (Adenoid Nasopharynx Ratio)
1	¼ to 1/3
2	1/3 to 2/3
3	2/3 to near complete occlusion
4	Complete occlusion

Clemens and macmurray endoscopic grading of adenoid hypertrophy

This is a four-grade endoscopic system for adenoid hypertrophy, which categorizes obstruction based on the percentage of the nasopharyngeal choana (airway) covered by adenoid tissue. It is widely used to determine the severity of obstruction and suitability for surgical intervention.

Grade 1: Adenoid occupying less than 25% of the choanal area.

Grade 2: Adenoid occupying 25–50% of the choanal area.

Grade 3: Adenoid occupying 50–75% of the choanal area.

Grade 4: Adenoid occupying 75–100% of the choanal area.

Methods

Based on intraoperative endoscopic observation, modification of existing classification by adding a new grade 5 is proposed for Adenoids extending anteriorly into the nasal cavity posing surgical challenge and increasing risk of excessive bleeding, collateral tissue damage and residual Adenoids due to non visualisation of the Curette or Coblation tip while examining using nasal endoscopy under general anesthesia at the time of surgery (Figure 1).

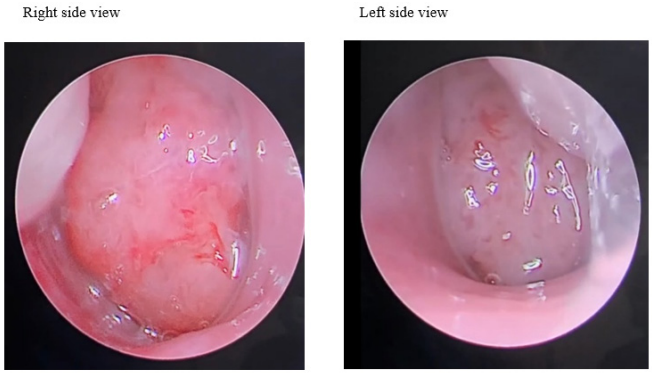

Figure 1 Preoperative endoscopic views of the nasopharyngeal lesion

Various methods are used for Adenoidectomy including various shapes and sizes of curettes with or without nasal endoscopic visualisation, Trans oral coblation under nasal or oral endoscopic visualisation, bipolar cauterisation, Suction cauterisation etc.

The attempt is to remove the Adenoids till its limits – superiorly till its periosteal bed and posteriorly till perimysium fascia to minimise residual Adenoid tissues and prevent its recurrence.[4]

This additional grade in classification of Adenoid hypertrophy helps to anticipate surgical difficulty and need for modifying the surgical technique and instruments during surgery.

To operate on these Grade 5 Adenoids, it is imperative that the surgeon is familiar with Transoral examination with angled telescope and retropalatal surgical debulking after retracting the soft palate using thin suction catheter or infant feeding tube. There is a learning curve to visualize and operate through Trans oral route using angled scopes and instruments.

Once debulking is done under vision using either Coblator, curved microdebrider or curette, further clearance can be done under endonasal endoscopic visualisation or through the transoral visualization itself.

Results

The Adenoids extending anteriorly into the nasal cavity poses unique surgical challenges due to non-visualization of anatomy. In our initial few cases, this increased the surgical time by about 20 minutes and resulted in excessive bleeding about 25 – 30 ml in an attempt of debulking by blind curettage to allow nasal endoscopic visualization of anatomy. By improvising our surgical method, we have been able to avoid these challenges and achive good clearance of Adenoids while minimizing trauma to adjacent structures (Figure 2).

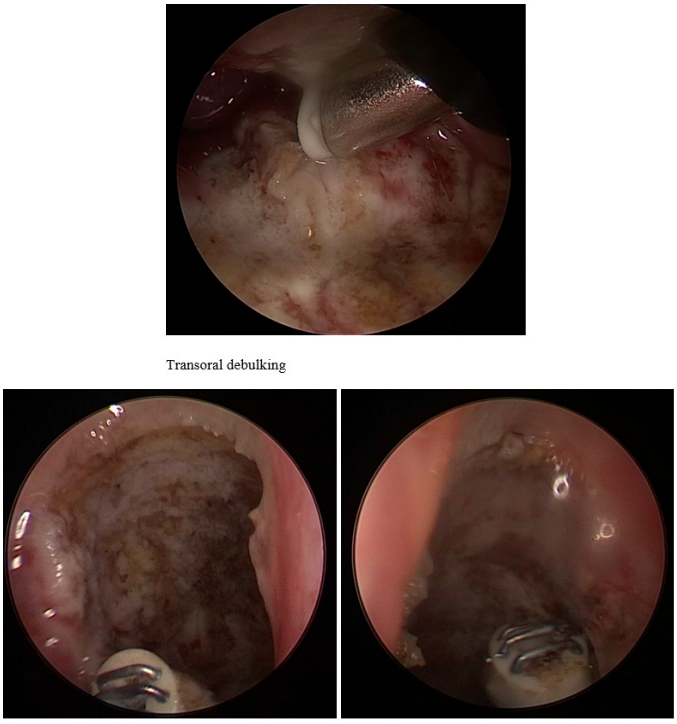

Figure 2 Intraoperative endoscopic views during transoral excision of the nasopharyngeal mass.

Conclusion

The addition of a Grade 5 category to the current endoscopic classification system will provide a practical means of predicting operative difficulty and facilitating surgical planning. Adoption of this modification may improve communication among surgeons and contribute to more effective management of advanced adenoid disease.

Acknowledgement

None

Conflicts of interest

All authors declare that there is no conflicts of interest.

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