



How I do it

Adjuvant Transnasal Endoscopic Adenoidectomy

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Adenoidectomy is one of the most common ENT surgical procedures. One of the most common sequelae after adenoidectomy is recurrence, and the most common cause for recurrence is incomplete removal. Accordingly, we present in a stepwise fashion our technique for complete adenoidal removal.

Keywords: Adenoidectomy, endoscopic, microdebrider, shaver, remnants, recurrence.

INTRODUCTION

Adenoidectomy (alone or in association with tonsillectomy) is one of the oldest and most frequent ENT procedures performed in children.⁽¹⁾ Despite its frequency and history, investigators continue to seek improvement in many factors relating to the performance of and postoperative recovery from adenoidectomy. Features characteristic of an ideal technique would include ease of performance including speed and intraoperative haemostasis as well as minimization of postoperative pain and bleeding complications. Needless to say, debate continues as to which technique yields the best outcome.⁽²⁾

New methods have been suggested for adenoidectomy utilizing nasal endoscopy, electrocautery, lasers, and microdebriders.^(3,4) Conventional adenoidectomy with curettage is still the most widely practiced method of adenoid surgery. Blind curettage cannot clear the adenoidal tissue within the posterior choana, which is sometimes the most important cause of airway obstruction, nor can it fully remove the adenoid tissue from the sides of the Eustachian tube orifices safely.⁽⁵⁾ The aim of this article is to highlight the surgical steps of our technique for effective adenoidectomy.

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TECHNIQUE

Preparations and positioning:

Surgery is done under general anaesthesia using orotracheal intubation. A neutral position of the neck, where it is neither flexed nor extended, is acquired. A Boyle-Davis gag is inserted into the mouth with the split blade of the gag holding the anaesthetic tube and the tongue in the midline as the gag is opened. The hard palate is carefully palpated first to exclude the presence of submucous cleft palate. The adenoid is then palpated with the index finger to exclude any pulsation or abnormal texture and to confirm the adenoidal size and extent, thus using the suitable curette.

Curettage of the adenoidal tissue:

The index finger is used to dissect the lateral extension of the adenoids towards the midline. A St Clair Thomson curette is used. It is inserted into the nasopharynx, and positioned against the posterior border of the nasal septum. Then it is embedded into the adenoidal tissue that is removed by sweeping the curette downwards into the oropharynx. The curette is chosen carefully in every case to fulfil the criteria of being sharp and of the correct size, that it can remove the whole adenoidal tissue without making damage to the Eustachian cushions. As the adenoidal mass is delivered into the oropharynx, the blade

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of the curette is brought forwards to avoid running down the posterior pharyngeal wall and stripping the mucosa.

Curettage of the adenoids is followed by blind shaving of the adenoidal bed by the back of the index finger, and this is followed by subsequent nasopharyngeal packing. A swab with a thread tail is introduced into the post-nasal space and left for 5 minutes.

Endoscopic shaving of the remnants:

After removal of the pack, the 30°, 4 mm rigid endoscope is introduced below the inferior nasal turbinate on the wider side until the nasopharynx. The 30°, 2.7 mm endoscope is resorted to in case of narrow nasal passage. An accurate endoscopic evaluation of the adenoidal bed is carried out to exclude any adenoidal remnants. Special care is directed to the remnants at the choana, posterior nasopharyngeal wall, vault, fossa of Rosenmuller, posterior lip of Eustachian tube and/or nasopharyngeal junction. In cases with detected remnants, the probe of the shaver is introduced through the other nostril until it reaches the nasopharynx. It is then used to remove the remnants by shaving. The procedure is then repeated via the other nostril to ensure complete removal of all the adenoid tissue. Bleeding is then secured by cauterization.

DISCUSSION

Frequency and sites of recurrence after curettage:

Adenoidectomy by curettage has yielded excellent results and was the standard technique for adenoidectomy until the late 20th century.⁽²⁾ Adenoidal remnants or regrowth are very common findings after adenoidectomy. Using intraoperative nasal endoscopy, Havas and Lowinger in 2002,⁽⁶⁾ have demonstrated that curette adenoidectomy does not achieve adequate removal of obstructive adenoid tissue in up to 39% of the patients. Bross-Soriano et al., in 2004,⁽⁷⁾ have evaluated the efficacy of conventional adenoidectomy in completely removing adenoidal tissue and concluded its efficacy in less than 30% of patients. In our experience, remnants were observed in 92.15% of the patients, before being removed endoscopically by shaver.

Remnants were detected at the roof, posterior wall of the nasopharynx, the junction between oropharynx and nasopharynx, the choana, the fossa of Rosenmuller, or the posterior rim of Eustachian tube. Fortunately, all these sites are accessible and could be properly visualized and manipulated by the endoscope and shaver.

Clinico-pathological explanation of recurrence:

In conventional adenoidectomy using curette, the approach to the nasopharynx is indirect, and as the adenoids are lymphatic vegetations without discrete borders, it is more difficult to completely remove them.⁽⁸⁾ A common problem seen is the phenomenon of hyperplasia of any remaining lymphoid tissue. Therefore, it is likely that an incomplete resection of the adenoids subjects the patient to an increased risk of recurrence of symptoms.⁽⁹⁾

Choanal adenoids:

Blind curettage cannot clear the adenoidal tissue within the posterior choanae, which is sometimes the most important cause of airway obstruction.⁽⁵⁾ Pearl and Manoukian (1994),⁽¹⁰⁾ reported that the improved visualization enables the surgeon to remove choanal adenoids, which are present in 10% of patients. Choanal adenoid was a subject of interest in our work. Interestingly, it was uncommon to find an adenoidal remnant attached to the choanal region (5.9%). It was also noticed that some cases had adenoidal remnants attached to other sites e.g. the roof of the nasopharynx and/or the posterior wall of the nasopharynx extending to the choana! It is worthy to state that choanal remnants could be easily identified and shaved completely transnasally.

How to detect remnants:

Classically, the adenoidal bed is blindly palpated by the back of the index finger to exclude remnants. However, visualization of the nasopharynx could be achieved via the transnasal, transoral, or combined routes.⁽⁶⁾ Some authors advised viewing the nasopharynx after retracting the soft palate using suction catheters, and others used the laryngeal mirrors.^(5,9) To enhance nasopharyngeal visualization, the 70° telescope was used transorally and the 0° telescope transnasally.⁽⁶⁾ Being simple, and direct, we usually adopt the transnasal route using the 30° telescope to detect and deal with any adenoidal remnants after curettage.

The ideal technique:

The search for an instrument to perform bloodless adenoidectomy successfully under direct vision has been the topic of numerous clinical trials. The transnasal direct endoscopic vision used combined with the powered shaver allowed precise removal of obstructive adenoidal tissue, intranasal adenoidal tissue, and tissue high in the nasopharynx while preserving mucosa and normal nasopharyngeal structures.⁽⁶⁾ We preferred not to do the adenoidectomy entirely transnasal and endoscopically utilizing the shaver, as we noticed that this technique takes more time and associated with more bleeding. Instead we prefer to use the endoscope transnasally to monitor

remnants, if any, after conventional curettage and utilize the shaver to take care of the remnants. We believe that this technique is simple and easy procedure with less operative time, and less blood loss, yet effective and ensures complete removal.

Experience and possible complications:

Adjuvant transnasal endoscopic adenoidectomy needs experience in transnasal endoscopic sinus surgery. The surgeon should avoid nasal mucosal damage that may preclude visualization via the nose due to bleeding. One should avoid complications e.g. Eustachian tube damage, uvula shaving, over shaving of the underlying muscle that may lead to inadvertent bleeding.

CONCLUSION

Adjuvant transnasal endoscopic power assisted adenoidectomy after conventional curettage is an easy and effective technique for adenoidal removal. But endoscopic experience is needed and possible complications should be born in mind.

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