

Transoral Endoscopic Adenoidectomy: Initial Experience

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SUMMARY

Adenoidectomy is a common ENT procedure performed in hospitals in Malaysia. Adenoidectomy is indicated in patients with recurrent adenoiditis, nasal obstruction or sleep apnoea secondary to adenoid hypertrophy when conservative management has failed. Over the years, there are advances in the techniques of adenoidectomy, from the conventional transoral to endoscopic transnasal/transoral adenoidectomy. The purpose of this article is to describe the technique and emphasize the advantages of this procedure to that of the conventional technique.

KEY WORDS:

Transoral, Endoscopic, Adenoidectomy

INTRODUCTION

Adenoids are mass of lymphoid tissue that play a role in producing antibodies and it acts as first line immunity in the body in addition to tonsils. Recurrent acute upper respiratory tract infections will lead to hyperplasia and hypertrophy of adenoids. The sequelae of adenoid enlargement includes nasal obstruction, sleep apnoea, eustachian tube dysfunction and otitis media with effusion. Therefore, these patients who are unresponsive to conservative management will require adenoidectomy in due course.

There are various techniques for adenoidectomy. The conventional adenoidectomy is performed with adenoid curette after digital palpation of the adenoid¹. Pearl and Manoukian² removed the choanal adenoids under indirect visualization using a laryngeal mirror. Due to the misting and limited view of operative site, the complications that may occur include incomplete removal from the roof of nasopharynx or torus tubarius and possible eustachian tube injury. Therefore, many other techniques of performing a safe and complete adenoidectomy have been introduced. Cannon *et al*³ has described endoscopic assisted adenoidectomy where after the traditional transoral adenoidectomy, endoscopy is used to remove the residual adenoid tissue in the posterior superior choanae. In our experience, we encounter difficulties to introduce both the endoscopes and forceps with manipulations into the children's narrow nasal cavities. Wan *et al*⁴ introduced the methods of performing transoral adenoidectomy under endoscopic visualisation. We discovered that it is difficult to estimate the depth of curettage of the posterior nasopharyngeal wall via the direct transnasal endoscopic removal resulting in injury to the prevertebral fascia. Consequently, we prefer to perform transoral endoscopic adenoidectomy which was first introduced by Schaeffer⁵ in

which angled endoscopes is utilised to visualise the nasopharynx during adenoidectomy. The endoscopes provide adequate view of the adenoids, its relations to the torus tubarius, eustachian tube and prevertebral fascia. Besides that, any evidence of residual adenoid tissue is easily removed. Being a teaching institution, this procedure provides good education tool for documentation including anatomy of the adenoids and nasopharynx.

MATERIALS AND METHODS

Patients who had undergone transoral endoscopic adenoidectomy from January to June 2007 in Hospital Universiti Kebangsaan Malaysia were taken as samples. Patients who had undergone conventional adenoidectomy were taken as controls with their age and sex matching samples. The estimated blood loss and surgical duration were obtained. Three months post-operatively, patients were assessed symptomatically and endoscopically for residual disease.

Technique

The patient is put under general anaesthesia and intubated with a centrally placed Rae's tube of appropriate sizes. Then, the patient is positioned in Rose's position with a shoulder roll. Subsequently, the patient is cleaned and draped. A Boyle-Davis mouth gag with appropriate sized tongue depressor is placed and suspended with Draffin's bipod. Foley's catheter size 8 is inserted bilaterally into the nostril and withdrawn from the oropharynx with clamping of the catheter to retract the soft palate. A 70° angled endoscope is introduced transorally to visualize the adenoid and nasopharynx (Fig 1 and 2). The enlarged adenoids and its relation to the surrounding structures are assessed. Under endoscopic visualization, an appropriate sized St-Clair Thompson curette or adenoid microdebrider is selected to remove the adenoid. Curettage of the adenoid is gently performed endoscopically until all the adenoid tissue has been removed. Residual adenoid tissue in the roof of the nasopharynx and in relation to torus tubarius can also be removed with St. Clair Thompson curette or adenoid microdebrider. Thereafter, the raw area is packed with gauze to secure hemostasis. Finally, irrigation with normal saline is carried out. The patient is extubated and sent to recovery room. The patient is discharged home the next day with analgesic and antibiotics if indicated.

Analysis

Statistical analysis carried out with Mann-Whitney U test via SPSS version 13.

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Table I: Data of patients who underwent transoral endoscopic assisted adenoidectomy

Age	Sex	Estimated blood loss (mls)	Surgical duration (minutes)
5	Male	5	10
5	Female	10	8
6	Male	5	7
9	Female	5	7
12	Female	5	8

Table II: Data of patients who underwent conventional adenoidectomy

Age	Sex	Estimated blood loss (mls)	Surgical duration (minutes)
5	Male	15	15
5	Female	15	20
6	Male	10	17
9	Female	10	15
12	Female	15	18

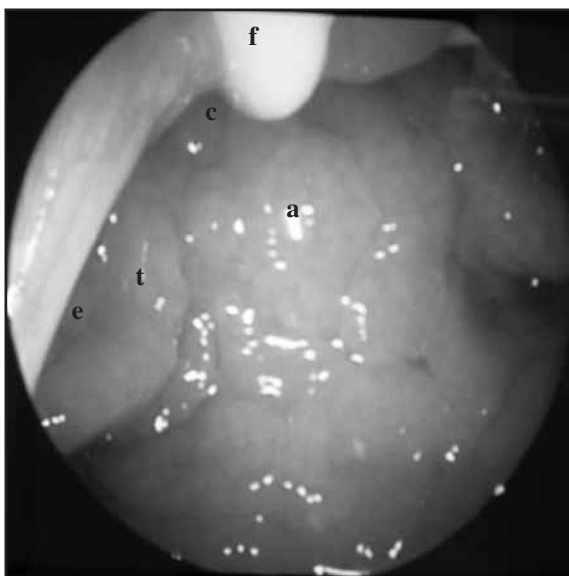


Fig. 1: Endoscopic view of nasopharyngeal anatomy viewed from above the patient's head: (a) adenoid pad, (t) torus tubarius, (c) nasal choanae, (e) eustachian tube opening, (f) Foley's catheter.



Fig. 2: Endoscopic view of nasopharyngeal anatomy viewed from above patient's head: (a) adenoid pad, (t) torus tubarius, (c) nasal choanae.

RESULTS

From January to June 2007, 5 patients (2 boys and 3 girls) were diagnosed to have adenoid hypertrophy and underwent transoral endoscopic assisted adenoidectomy at Hospital Universiti Kebangsaan Malaysia (Table I). Five patients of the many who had undergone the conventional adenoidectomy were taken as control (Table II).

The age for sample and control ranged from 4 to 12 with mean age of 7.4 years. The total estimated blood loss for patients who underwent transoral endoscopic adenoidectomy was minimal, ranging from 10 to 15 mls. The estimated blood loss for patients who underwent conventional adenoidectomy was significantly more than transoral endoscopic adenoidectomy (Mann Whitney U, $p = 0.008$). The surgical duration for transoral endoscopic adenoidectomy was short ranging from 7 to 10 minutes. This was significantly shorter than the surgical duration for the conventional adenoidectomy (Mann-Whitney U test, $p =$

0.008). Post-operatively, there were no complications such as nasopharyngeal bleeding noted in both groups of patients and all patients were discharged well a day later. Three months post-operation, all patients who underwent transoral endoscopic adenoidectomy were asymptomatic and nasendoscopy revealed normal mucosa of nasopharynx and patent Eustachian tube. However, two patients who underwent conventional adenoidectomy had recurrent symptoms indicating recurrent adenoid hypertrophy. Nasendoscopy revealed residual adenoid at the superior part of the nasopharynx.

DISCUSSION

Adenoidectomy is one of the commonest surgeries performed by otolaryngologists. There are few complications reported in the literature from the conventional techniques of adenoidectomy. Therefore, with the advancement of imaging technology provided by angled endoscopes, these

complications can be avoided. Transoral endoscopic adenoidectomy technique is easy to perform and it provides added advantages to surgeons and patients. Under optimum endoscopic visualization, the surgery is less traumatic and the adenoids removed completely. Therefore, the risk of residual or recurrent adenoid disease in the future is extremely low. It is a very safe surgical technique because injury to the vital surrounding structures such as the Eustachian tube can be avoided. Besides that, the operative time is shorter with direct visualization of the tissue bulk to be removed and precise hemostasis maintained. This will also reduce the duration of exposure and complications of general anaesthetic drugs. In addition, the surgery can be viewed from the monitor for the benefit of the trainees. Hospitalisation of the patients is shorter because of faster recovery. We also realized that the patients are healthier and had less visits to doctors or absentees from school post endoscopic adenoidectomy. The advantages of performing transoral endoscopic adenoidectomy were demonstrated in this preliminary study.

CONCLUSION

Transoral endoscopic adenoidectomy provides better outcomes to patients due to the minimal blood loss and shorter surgical duration. In addition, good visualization via endoscope prevents complications such as residual adenoid or injury to surrounding vital structures. Finally, this led to good quality of life for the patients in the future. Therefore, we advocate this technique over conventional techniques due to its added advantages.

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