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ORIGINAL RESEARCH

Comparative study of coblation versus conventional adenoidectomy

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Abstract

Background: Adenoidectomy with or without tonsillectomy, is one of the most often carried out surgical operations in the paediatric population. Adenoid enlargement is recognised to be the most common cause of nasal blockage in children. It was initially detailed how to perform the traditional curette adenoidectomy. Other techniques, such as powered-shaver adenoidectomy, bipolar electrocautery, coblation, and LASER were used as a result of dissatisfaction with this one.

Methods: Based on the history, clinical examination, and radiography, forty patients had enlarged adenoids. The patients were separated into two groups and had either conventional or coblation adenoidectomy. Group A patients underwent conventional adenoidectomy, whereas group B patients underwent coblation adenoidectomy. Operative time, intraoperative bleeding, and the extent of adenoidectomy were the intraoperative parameters examined. Assessments of postoperative pain was done.

Results: It was discovered that, despite coblation's lengthier operating time, it is a safer and more accurate procedure than curette adenoidectomy, results in less intraoperative blood loss, postoperative discomfort, and quick recovery, and has less problems.

Conclusion: Although coblation adenoidectomy has been shown to be both safe and successful, its cost must first be reduced before it can be seriously considered as a modality for adenoidectomy.

Keywords: Adenoidectomy, Conventional, Coblation

Introduction

The adenoids, also known as nasopharyngeal tonsils, are lymphoepithelial organs that are crucially positioned anatomically in the roof of the nasopharynx and play a significant role in upper respiratory tract disease [1]. Over time, instruments and techniques have seen significant development. With an improved patient outcome and more physician satisfaction, endoscopic sinus surgery instrumentation has recently developed the traditional surgical approach used with an adenoid curette or an adenotome [2].

The best adenoidectomy technique should remove the adenoids safely with the least amount of time spent operating, blood lost, postoperative morbidity, and/or recurrence [3]. Different adenoidectomy procedures, such as the microdebrider, bipolar electrocautery, and coblation, have been introduced in recent years to lower morbidity and surgical risk [4]. Adenoidectomy with coblation has become common practise. According to several writers, coblation has

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major advantages over other techniques because it operates at lower temperatures than diathermy, which may cause less harm to the surrounding tissue, lessen postoperative discomfort and bleeding, and speed up healing [5]. This study compared the safety, effectiveness, outcomes, and consequences of employing a coblator during an endoscopic adenoidectomy to a standard cold curettage.

Methods

40 children (3–10 years old, 21 males and 19 females) randomly chosen from the Hospital outpatient clinic between December 2021 and June 2022 and exhibiting symptoms and signs that might indicate adenoid hypertrophy obstructing the nasopharynx underwent a prospective, randomised study:

Participants in the study had to be between the ages of 3 and 10 years, have obstructive symptoms like long-lasting nocturnal snoring, sleep apnea, and open mouth breathing, as well as bilateral nasal obstruction and/or nasal discharge, adenoid hypertrophy as the only cause of nasal obstruction, and radiographic evidence of adenoid hypertrophy encroaching on the airway column.

Presence of chronic diseases such as chronic heart diseases, chronic liver diseases, chronic renal diseases, and diabetes mellitus, other causes of nasal obstruction such as acute rhinitis, allergic rhinitis, septal deviation, or anatomical deformities (Choanal atresia), cases with submucous cleft palate and cases with a previous history of cleft palate repair, patients with bleeding or coagulation defects ,younger than 3 years or older than 10 years of age and recurrent cases were excluded from the study.

A review of the patient's medical history and physical examination, a radiographic evaluation of the nasopharynx (lateral view), and routine preoperative laboratory tests such CBC, APTT, PT, INR, etc. were done.

In this study, 40 individuals of both sexes with adenoid hypertrophy were included (with or without chronic tonsillitis). There were two groups of patients. The cases were randomly split into two equal groups (the coblator and curette adenoidectomy groups), each of which had 20 patients. All of the surgeons who took part in the study had about the same surgical training and the same professional credentials.

Operative time, intraoperative bleeding, and the extent of adenoidectomy were the intraoperative parameters examined. The Wong-Baker faces rating scale was used to assess postoperative pain, including with postoperative complications (such as bleeding) and resolution time.

The statistical programme for social science (IBM, Manhattan, New York City, USA), version 20.0, was used to analyse the data. Quantitative information was presented as mean ± SD. Frequency and percentage were used to express qualitative data.

Results

This study comprised 40 individuals of both sexes with adenoid hypertrophy (with or without tonsillitis). Two groups of patients were created.

20 individuals, 11 males and 9 Females, with ages ranging from 3 to 10 years and an average of 6.25±2.47 years, were part of Group A and received a conventional curette adenoidectomy. Nine of them had adenotonsillectomy procedures.

Group B included 20 individuals who underwent transoral video endoscopic adenoidectomy with a coblator. There were 10 males and 10 females in this group, and an average of 5.85 ±1.98. Eight of them had tonsillectomy procedures (Table 1).

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Table 1: Gender and age distribution among groups:

Variable	Group 1 (n=20)	Group 2 (n=20)	Chi square	P value
Age (years) Mean ± SD Range	 6.25±2.47 3-10	 5.85±1.98 3-10	 0.575	 0.319
Gender (%) Male Female	 9(45) 11(55)	 10(50) 10(50)	 0.100	 0.752

Patients in group A underwent operations that lasted between 5 and 30 minutes on average, whereas those in group B underwent operations that took between 13 and 35 minutes on average. It was determined that the variation in intraoperative blood loss was statistically significant (Table 2). In the first 24 hours following surgery, there was a substantial difference between the two groups' pain assessments (Table 3).

Table 2: Comparison between the two groups in the operative time and blood loss

Variable	Group 1 (n=20)	Group 2 (n=20)	T test	P value
Operative time Mean ± SD Range	 10.55±7.23 5-30	 22.30±6.50 13-35	 29.225	 < 0.001
Bleeding Mean ± SD Range	 64.00±79.43 20- 370	 9.70±6.88 5-33	 9.277	 0.004

Table 3: Postoperative pain

Variable	Group 1 (n=20)	Group 2 (n=20)	T test	P value
Operative time Mean ± SD Range	 4.50±1.93 2-8	 2.70±1.49 0-6	 10.876	 0.002

Discussion

In this study, coblation adenoidectomy took longer to complete than conventional adenoidectomy, however coblation adenoidectomy resulted in less blood loss overall. The two techniques employed differed significantly in terms of time required and blood loss.

According to this study, the average operating time for a conventional adenoidectomy was 10.55 minutes, compared to 22.30 minutes for a coblation adenoidectomy, and the average blood loss for a conventional adenoidectomy was 64 millilitres (ml; range, 20-370 ml), as opposed to 9.7 millilitres (ml; range, 5-33 ml) for a coblation adenoidectomy. According to this study, using the coblation approach reduced postoperative pain and allowed patients to resume their regular diet and activities sooner than using the conventional method.

These results are analogous to those of earlier research by Di Rienzo Businco et al. [6], which demonstrated that the main benefits of coblation adenoidectomy over cold curettage procedure were as follows: (a) fewer complications; (b) a lower risk of residual adenoid tissue after coblation; (c) the ability to reach all areas of the nasopharynx up to the Eustachian tube opening; (d) suitability for patients of all ages, although the decrease in pain intensity and duration is significant in paediatric patients; and (e) a decrease in the use of postoperative medications and loss of working days for parents. Endoscopic coblation adenoidectomy also permits selective and accurate ablation of the adenoid tissue as compared to conventional cold curettage. There was no intraoperative or postoperative bleeding noted, and nearby structures like the tubes, nasal, and pharyngeal mucosa were properly protected.

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Additionally, coblation adenoidectomy is linked to decreased postoperative neck pain than curette adenoidectomy, according to Timms et al. [7]. As we have previously noted after extensive follow-up, the respiratory findings following endoscopic coblator adenoidectomy are stable and within the normal range, with no risk of recurrence (based on our histology data) or persistence of adenoid tissue. The main cause of the high nasal resistance values in the patients who underwent cold curettage, according to data from the nasal decongestion test, is the persistence of adenoid tissue.

Conclusion

Endoscopically aided coblation adenoidectomy allows for precise, thorough, and secure removal of adenoid tissue while taking more time during surgery. Additionally, patients have less postoperative pain and quicker healing thanks to less intraoperative bleeding and improved haemorrhage control. The sole and major drawback of the coblator is its exorbitant price. In order to make it the modality of choice for this frequently performed surgery, it is crucial to lower the cost.

References

1. van Cauwenberge PB, Bellussi L, Maw AR, Paradise JL, Solow B. The adenoid as a key factor in upper airway infections. International journal of pediatric otorhinolaryngology. 1995 Jun 1;32:S71-80.
2. Koltai PJ, Chan J, Younes A. Power-assisted adenoidectomy: total and partial resection. The Laryngoscope. 2002 Aug;112(S100):29-31.
3. Shapiro NL, Bhattacharyya N. Cold dissection versus coblation assisted adenotonsillectomy in children. Laryngoscope 2007; 117:406–410.
4. Songu M, Altay C, Adibelli ZH, Adibelli H. Endoscopic-assisted versus curettage adenoidectomy: a prospective, randomized, double-blind study with objective outcome measures. Laryngoscope 2010; 120:1895–1899.
5. Rabbani MZ, Iqbal Z, Zafar MJ. Post-tonsillectomy haemorrhage: is day care surgery safe? J Pak Med Assoc 2010; 60:559–561.
6. Di Rienzo Businco L, Angelone AM, Mattei A, Ventura L, Lauriello M. Paediatric adenoidectomy: endoscopic coblation technique compared to cold curettage. Acta Otorhinolaryngol Ital 2012; 32:124–129.
7. Timms MS, Ghosh S, Roper A. Adenoidectomy with the coblator: a logical extension of radiofrequency tonsillectomy. J Laryngol Otol 2005; 119:398–399