

Role of revision adenoidectomy in paediatric otolaryngological practice

A LIAPI, DOHNS, G DHANASEKAR, FRCS(ED), N O TURNER, FRCS

Abstract

Objectives: We aimed to determine the need for revision adenoidectomy following the standard technique of blind curettage with digital palpation.

Methods: Within a district general hospital, we undertook a retrospective study of 3231 children who underwent adenoidectomy between 1996 and 2003, 53 of whom required revision adenoidectomy. The main outcome measure was the number of children needing revision adenoidectomy.

Results: A total of 53 children required a repeated operation for recurrence of symptoms (1.6 per cent); of these, 42 were for treatment of glue ear, five were for nasal symptoms and six were for adenoidal infection.

Conclusion: Adenoidectomy performed without vision may be one of the reasons for recurrence of symptoms. Residual adenoids are acknowledged in the literature as one of the complications of the traditional technique. We highlight the fact that the need for revision adenoidectomy is not uncommon and suggest that we should improve our surgical technique in the UK by visualization of the postnasal space either by a mirror or an endoscope.

Key words: Surgical Revision; Adenoidectomy

Introduction

Adenoidectomy is one of the most commonly performed procedures in paediatric otolaryngological practice. The main indications in children include recurrent adenotonsillitis, otitis media with effusion, upper airway obstruction and chronic rhinosinusitis.¹

Wilhelm Meyer, the famous Danish otolaryngologist, first described adenoidectomy in 1885 and recommended curettage through the nose assisted by a finger in the postnasal space.² Since then, many alternative techniques have been described, including suction electrocautery ablation performed transnasally³ or transorally,^{4,5} power-assisted adenoidectomy^{6–8} and laser adenoidectomy.⁹ The traditional technique, by means of adenotomes,¹⁰ remains quite popular and, although simple and time-honoured, has certain pitfalls, such as incomplete removal and trauma to underlying tissues.¹¹

In this paper, we assess the need for revision adenoidectomy following initial conventional curettage.

Patients and results

We studied 3231 children undergoing adenoidectomy between 1996 and 2003. In 85 per cent of the

cases, the procedure was accompanied by insertion of ventilation tubes. The standard method was blind curettage. After being anaesthetized, the patient was positioned supine with the neck extended and a Boyle–Davis mouth gag was inserted. The bulk of the adenoid tissue was felt digitally by the surgeon and then removed blindly with several passes of the curette. Haemostasis was achieved using plain packs or adrenaline packs. The procedures were performed by registrars, middle-grade surgeons and the senior author (NT), who had been prospectively collecting such cases from his own practice since April 1996. Out of the 3231 patients, 53 required a second operation for recurrence of symptoms (1.6 per cent). The details of these 53 children were obtained from the theatre records and their notes reviewed. The mean age at first operation was 5.2 years (ranging from 1.5 to 10 years) and the mean time interval between the first and the second procedure was 3.5 years (ranging from one to 15.5 years). The male to female ratio was 26/27. Of the 53 patients who received revision surgery, 48 did so for recurrence of glue ear and five for recurrence of nasal obstruction. Glue ear was defined as the presence of middle-ear fluid

From the Department of Otolaryngology, Manor Hospital, Walsall, UK.

Presented at the 6th International Conference on Paediatric Otolaryngology in Athens, Greece, 16–19 May 2004, and at the British Association of Paediatric Otolaryngology meeting in Bristol, UK, 8 October 2004.

Accepted for publication: 23 August 2005.

associated with a type B tympanogram and a conductive hearing loss >20 dB. Nasal obstruction was defined as the presence of snoring, mouth-breathing and/or a hyponasal voice. In six of the 48 patients who had recurrent otological symptoms, the adenoids were not greatly enlarged, however they were covered with pus and it was felt that they were acting as a reservoir for pathogens and should therefore be removed.

The limitation of this study was that none of the children who underwent primary adenoidectomy had any routine long term follow up. Only the children with recurrence of symptoms presented back to our department. There were also the possibilities of children relocating, being referred to other departments and being lost to follow up.

Discussion

The aim of adenoidectomy is to remove the hypertrophied adenoid tissue, which is present in the nasopharynx and can cause symptoms of obstruction. Adenoids cause symptoms not only due to their size but also due to the fact that they act as a reservoir for upper respiratory tract pathogens.¹² The regrowth of adenoids as a consequence of incomplete primary surgery, especially if performed at a younger age, is not unknown in the literature.^{13–17} Cannon *et al.*,¹³ in a prospective study, assessed the amount of residual adenoid tissue following conventional adenoidectomy under vision and found that 'invariably there is tissue left behind'. In a very similar study, Havas and Lowinger¹⁴ demonstrated a 39 per cent rate of inadequate removal of adenoids by blind curettage, documented intra-operatively with an endoscopic check after the procedure was felt to be completed. On the other hand, Buchinsky *et al.*,¹⁵ in their cross-sectional follow-up study of 175 children, did not find any case of symptomatic adenoidal regrowth. However, they performed all their procedures by curettage under vision and completed them with suction electrocautery. They also looked specifically at recurrence of nasal symptoms. The authors do speculate that a higher incidence of 'regrowth' might have been seen if the blind method had been used.

Another issue that has been considered to contribute to unsuccessful adenoidectomies is choanal adenoids.^{18,19} Rarely, adenoid tissue is present inside the choanae rather than the nasopharynx and can therefore be left unrecognized and lead to repeated operations. Blind curettage is not an adequate method for identifying and especially removing choanal adenoids. Pearl and Manoukian¹⁸ performed a mirror inspection during adenoidectomy and found that 9 per cent of the 330 patients they studied had adenoid tissue inside the choanae. Orntoft and Bonding,¹⁹ using stricter criteria and an endoscope, estimated that about 2 per cent of patients who require revision operations have 'ectopic' choanal adenoid tissue.

The clinical importance of adenoidal regrowth or residuum has yet to be specified. It is now well established that adenoidectomy can be efficacious

in the management of otitis media with effusion, without hyperplasia of the tissue.^{20,21} In our preliminary study, we show that 1.6 per cent of children who had already undergone adenoidectomy had persistent otological symptoms and required a second operation. This figure undoubtedly underestimates the true rate of recurrence, as some children might have moved to other areas or been referred to other departments, while others, although symptomatic, did not seek a specialist opinion. Furthermore, none of the primary cases underwent formal post-operative follow-up assessment of the nasopharynx and we relied only on recurrence of symptoms as an indicator of adenoidal regrowth.

We believe that symptomatic recurrent adenoid growth following the blind curettage technique is not uncommon. To our knowledge, there have not been other similar studies estimating the frequency of revision adenoidectomies following primary traditional curettage without vision.

We have distributed a follow-up questionnaire survey regarding the predominant method of adenoidectomy in this country and the preferred method of intraoperative assessment of the adenoids. This, we hope, will help us define the role of revision adenoidectomy in the United Kingdom.

Conclusions

Adenoidectomy performed without vision is an imprecise technique that does not achieve perfect results and may lead to recurrence of otological symptoms or symptoms of nasal obstruction.

The possibility of residual adenoid tissue must be considered in patients with recurrent middle-ear disease, and the nasopharynx should be re-evaluated even after prior surgery.

We highlight the fact that the need for revision adenoidectomy is not uncommon, and we recommend that current practice be improved by visualization of the postnasal space, either by a mirror or an endoscope.

- **Adenoidectomy performed without vision is an imprecise technique that does not achieve perfect results and may lead to recurrence of otological symptoms or symptoms of nasal obstruction**
- **This study reports 53 children undergoing revision adenoidectomy. A total of 3231 patients underwent adenoidectomy during the same period**
- **Residual adenoid tissue must be considered in patients with recurrent middle-ear disease and the nasopharynx re-evaluated even after prior surgery. The authors suggest that more complete adenoid removal would be achieved if the adenoids were removed under direct visual control**

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Address for correspondence:
Mr G Dhanasekar, FRCS,
6, Woodhayes Croft,
Westcroft,
Wolverhampton WV10 8PP, UK.

Fax: 08701334008
E-mail: DhanasekarENT@aol.com

Mr G Dhanasekar takes responsibility for the integrity of the content of the paper.
Competing interests: None declared
