

## Adenoidectomy techniques: UK survey

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### Abstract

**Objectives:** To determine (1) the preferred adenoidectomy technique among UK ENT consultants, and (2) the need for revision adenoidectomy following the standard technique of blind curettage with digital palpation.

**Method:** Postal questionnaire.

**Participants:** We included 539 consultant members of the ENT–UK.

**Main outcome measures:** Commonly used adenoidectomy techniques, and whether revision adenoidectomy was considered a problem.

**Results:** The response rate was 66.6 per cent (359 respondents). Twenty-seven respondents did not perform adenoidectomy, while 332 did. A total of 312/332 respondents (94 per cent) believed that adenoidectomy had a role in the treatment of chronic serous otitis media. The majority of respondents (232/332; 69.9 per cent) reported examining the postnasal space digitally at adenoidectomy. The preferred routine adenoidectomy technique was blind curettage for 263 respondents (79.2 per cent), suction diathermy ablation for 27 (8.1 per cent) and curettage under direct vision (using a mirror) for 13 (3.9 per cent). In response to the question ‘Do you recognise the need for revision adenoidectomy as a problem?’, 205 (61.7 per cent) respondents replied ‘never’, 39 (11.7 per cent) ‘rarely’, 54 (16.3 per cent) ‘< 2 per cent’ and 36 (10.8 per cent) ‘>2 per cent’.

**Conclusions:** The most commonly used adenoidectomy technique in the UK is digital palpation followed by blind curettage, according to this postal questionnaire survey. Few respondents reported performing adenoidectomy under direct vision: only 10 per cent used a mirror during the procedure and only 8 per cent used an endoscope.

**Key words:** Adenoidectomy; Great Britain; Questionnaires

### Introduction

Adenoidectomy is one of the most commonly performed procedures in paediatric ENT practice. The main paediatric indications for this procedure include recurrent adenotonsillitis, otitis media with effusion, upper airway obstruction (i.e. obstructive sleep apnoea) and chronic rhinosinusitis.

Previously, we had conducted a study in the same department<sup>1</sup> to assess the need for revision adenoidectomy following the standard adenoidectomy technique of blind curettage with digital palpation. This retrospective study investigated 3231 children who had undergone adenoidectomy between 1996 and 2003 in a UK district general hospital. Of these 3231 children, 53 (1.6 per cent) had required revision adenoidectomy. Of these 53 revision procedures, 42 were for treatment of chronic serous otitis media, five for nasal symptoms and six for adenoidal infection. We concluded that a lack of direct vision when performing adenoidectomy may be one of the reasons for recurrence of symptoms. Residual

adenoidal tissue is acknowledged in the literature as one of the complications of the traditional technique. This result prompted us to consider the need for a survey assessing the preferred adenoidectomy techniques of UK ENT consultants.

The traditional adenoidectomy technique, using adenotomes, remains quite popular. Although simple and time-honoured, it has certain pitfalls such as incomplete removal and trauma to underlying tissues. The last two decades have seen the introduction of new adenoidectomy techniques, such as use of the surgical microdebrider, suction diathermy and coblation diathermy. However, contemporary UK practice has not previously been assessed – another reason to conduct the current survey.

In this study, we aimed to determine (1) the most commonly used adenoidectomy techniques among UK ENT consultants, (2) visualisation of the adenoids during the procedure and the need for revision adenoidectomy following initial, conventional curettage.

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**Materials and methods**

A postal questionnaire (see Appendix 1) was mailed to 539 consultant members of the ENT-UK.

The questionnaire consisted of five questions regarding (1) whether they believed in the role of adenoidectomy in the treatment of glue ear?, (2) percentage of primary ventilation tube insertion patients undergoing adenoidectomy, (3) mode of intra-operative inspection of the adenoids, (4) routine adenoidectomy technique, and (5) whether the respondent considered the need for revision adenoidectomy to be a problem.

Replies were collected over a 16-week period.

**Results**

The response rate was 66.6 per cent (there were 359 respondents to 539 questionnaires mailed). Of these 359 respondents, 27 stated they did not believe in the role of adenoidectomy in the treatment of chronic serous otitis media. The remaining 332 respondents stated that they did believe in the role of adenoidectomy in this clinical setting. These 332 replies were analysed, and are the basis for the following results.

The most commonly used technique for routine adenoidectomy was blind curettage (263 respondents (79.2 per cent)) (Figure 1). Suction diathermy ablation was used by 27 respondents (8.1 per cent), curettage under direct vision (using a mirror) by 13 (3.9 per cent), power-assisted adenoidectomy by 15 (4.5 per cent), a coblator by four and a combination of the above modes by two.

The majority of respondents (232 (69.9 per cent)) reported using digital palpation to examine the post-nasal space at adenoidectomy. Thirty-four (10.2 per cent) reported using a mirror, and 28 (8.4 per cent) an endoscope (Figure 2).

In response to the question ‘Do you recognise the need for revision adenoidectomy as a problem?’, 205 (61.7 per cent) respondents agreed with the response

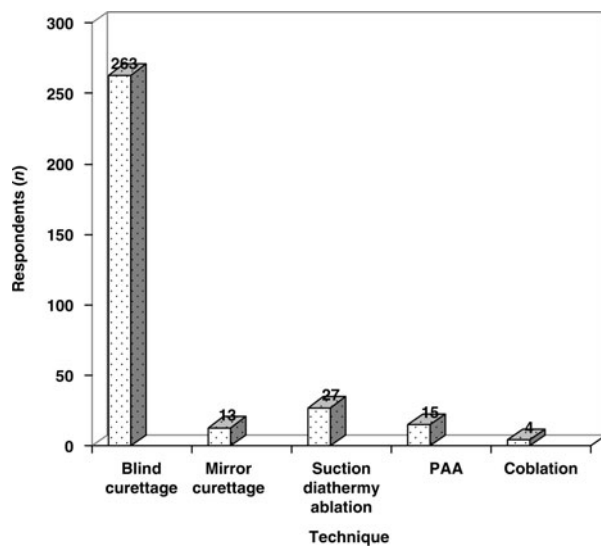


FIG. 1

Reported adenoidectomy techniques. PAA = power-assisted adenoidectomy.

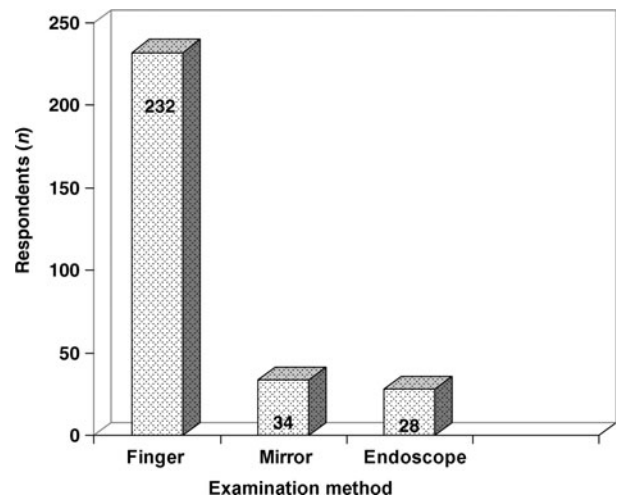


FIG. 2

Reported methods of examining the postnasal space at adenoidectomy.

option ‘never’, 39 (11.7 per cent) with ‘rarely’, 54 (16.3 per cent) with ‘< 2 per cent’ and 36 (10.8 per cent) with ‘> 2 per cent’ (Figure 3).

Percentage of primary ventilation tube insertion patients undergoing adenoidectomy? <5 per cent is 235 (70.7 per cent), 5–30 per cent is 65 (19.5 per cent), 30–80 per cent is 22 (6.6 per cent) and >80 per cent is 10 (3 per cent). Majority of the consultants (70.7 per cent) do not perform adenoidectomy during primary or first set of ventilation tubes insertion (Figure 4).

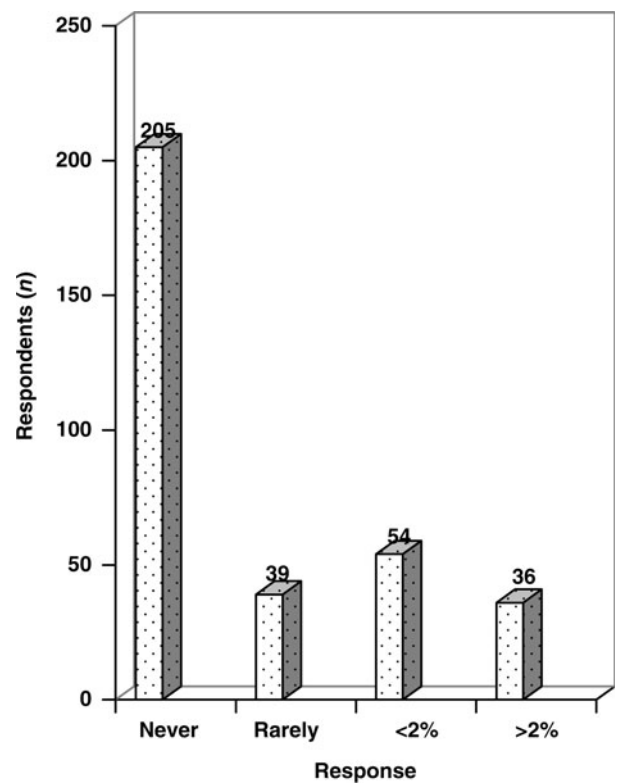


FIG. 3

Responses to the question ‘Do you recognise the need for revision adenoidectomy as a problem?’

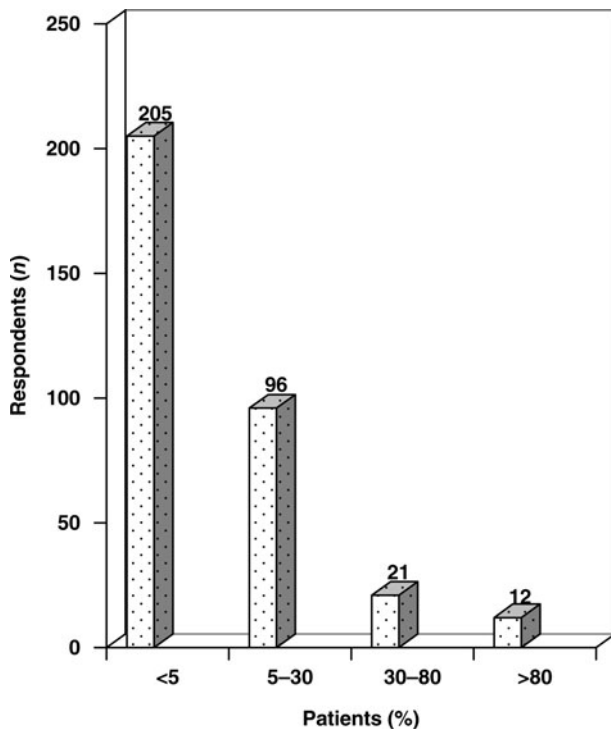


FIG. 4

Reported estimated percentage of primary ventilation tube insertion patients undergoing adenoidectomy.

## Discussion

The last two decades have seen the advent of new adenoidectomy techniques, such as use of the surgical microdebrider, suction diathermy and coblator. Below, we discuss the advantages and disadvantages of these innovations, as well as the need for revision adenoidectomy following each technique.

Bross-Soriano *et al.*<sup>2</sup> evaluated the efficacy of the conventional adenoidectomy technique, using trans-operative endoscopic vision of the nasopharynx, and also evaluated the need to include telescopes as part of the standard instrumentation available for adenoidectomy. This study was prospective, comparative and open. It included 150 consecutively recruited patients with an absolute indication for adenoidectomy. These patients underwent 150 adenoidectomy procedures, using conventional technique and Beckman and La Force adenotomes. Once the surgeon considered the procedure to be complete, the authors observed the condition of the nasopharynx (using a laryngeal mirror) and operated adenoid area (using 0° and 30° Hopkins rod telescopes). If any residual adenoids were evident, these were eliminated with Guggenheim forceps, adenotomes or a curved 40° microdebrider tip. Endoscopic visualisation aided in the complete removal of adenoidal tissue and also assisted bleeding control. The authors observed total removal of adenoids in only 43 patients; residual adenoids were found in the remaining 107 cases. Of these cases, 45.3 per cent had adenoidal tissue occluding the pharyngeal part of the both eustachian tubes. Bross-Soriano *et al.* concluded that conventional adenoidectomy

was effective in less than 30 per cent of cases; therefore, they considered the use of endoscopes during every such procedure to be essential.

The clinical importance of adenoidal regrowth or residuum has yet to be clarified. It is now well established that adenoidectomy can be efficacious in the management of otitis media with effusion, in the absence of hyperplasia of the tissue. In our preliminary study,<sup>1</sup> we found that 1.6 per cent of children who had already undergone adenoidectomy had persistent otological symptoms and required a second operation. This figure undoubtedly underestimated the true rate of recurrence, as some children should have moved to other areas or been referred to other departments, while others would not have sought a specialist opinion even though symptomatic. Furthermore, none of our primary cases underwent formal follow-up nasopharyngeal assessment post-operatively, and we thus relied only on recurrence of symptoms as an indicator of adenoidal regrowth.

Adenoidal regrowth is a poorly understood phenomenon. While parents often express concern regarding the potential for such regrowth, there is little published information about its incidence and causation. However, a study by Monroy *et al.*<sup>3</sup> did address this problem, aiming to establish the incidence and possible contributing factors leading to adenoidal regrowth in children. These authors undertook a retrospective case series review within a tertiary care children's hospital. They identified 106 children who had undergone revision adenoidectomy between 1995 and 2006. Thirty-four children were excluded because the primary adenoidectomy had been performed elsewhere or was only partial. In the remaining 72 patients, demographic data, clinical presentation, associated medical conditions and surgical findings were recorded. During the 11-year study period, 13 005 adenoidectomies or adenotonsillectomies were performed; of these, 72/13 005 (0.55 per cent) were revision adenoidectomy procedures. The mean  $\pm$  standard deviation (SD) for age at presentation was  $3.68 \pm 2.9$  for primary adenoidectomy and  $7.69 \pm 4.04$  years for secondary (revision) adenoidectomy, with an average time interval of 4.3 years between primary and secondary procedures. Age at initial adenoidectomy was not a significant factor in predicting revision adenoid surgery. Of the 72 children who underwent revision adenoidectomy, 29/72 (40 per cent) also underwent reflux investigation, including scintiscan with gastric emptying, 24-hour pH probe testing, or laryngoscopy; 28/29 (96 per cent) were diagnosed with reflux. At least 15 of the 72 children who underwent revision adenoidectomy (21 per cent) were reported to have symptoms consistent with adenoidal regrowth, which was found to be caused by tubal tonsillar hyperplasia. Monroy *et al.* concluded that revision adenoidectomy is rarely required. Tubal tonsillar hyperplasia, as opposed to regrowth of residual adenoidal tissue after a previous removal procedure, accounts for some cases. The authors also speculated that extra-oesophageal reflux was a possible cause in some cases, and that this required further study.

Hartley *et al.*<sup>4</sup> retrospectively reviewed 410 adenoidectomies undertaken over a 13-month period. A suction diathermy technique was used in 240 cases and conventional curettage in 170. Five patients who haemorrhaged in the post-operative period had undergone traditional curettage. The authors concluded that suction diathermy ablation had the primary advantage of a clear view of the nasopharynx and the adenoids during the actual resection. This allowed controlled removal of adenoid tissue. It also assisted removal of choanal adenoids, which can be present in 10 per cent of children. The clear view during resection also allowed the surgeon to avoid injury to adjacent structures, e.g. eustachian tube orifices. A secondary advantage of suction diathermy ablation was reduced haemorrhage during and after the procedure.

Stanislaw *et al.*<sup>5</sup> compared the safety and efficacy of power-assisted adenoidectomy versus traditional adenoidal curettage adenoidectomy, in a prospective, randomised study within a tertiary care children's hospital. Ninety patients underwent power-assisted adenoidectomy and 87 adenoidal curettage adenoidectomy. The authors evaluated operating time, blood loss, completeness and depth of resection, injury to surrounding structures, short- and long-term complications, surgeon satisfaction with the procedure, and parents' assessment of the patient's post-operative recovery period. The authors concluded that power-assisted adenoidectomy was faster and resulted in less blood loss, more complete resection, better control of resection depth, and greater surgeon satisfaction, compared with traditional adenoidal curettage adenoidectomy.

Shin and Hartnick<sup>6</sup> used suction diathermy for adenoid ablation via a solely endoscopic transnasal approach, in an older paediatric population. They found this procedure to be effective and convenient to perform during other transnasal endoscopic procedures. Suction diathermy provided excellent visualisation of both the superior and inferior parts of the nasopharynx, with minimal or no bleeding in the adenoid bed. They encountered no post-operative complications such as bleeding, infection, nasopharyngeal stenosis or velopharyngeal insufficiency. The authors felt that transnasal adenoid ablation was not appropriate for the entire paediatric population, but that it had multiple benefits when another endoscopic, sinonasal procedure was planned, when there was neck instability or when enhanced visualisation of the nasopharynx was desired. The operative time for the endoscopic adenoidectomy procedure, including endoscopic equipment preparation and photo-documentation, was 10–15 minutes. Blood loss was less than 1 ml during the procedure. When adenoidal tissue is left behind following a traditional curettage procedure, it is invariably in the superior half of the nasopharynx. Shin and Hartnick found that an endoscopic, transnasal, suction diathermy procedure avoided this problem; endoscopic visualisation of the superior half of the nasopharynx was excellent. This may be crucial for patients who require adenoidectomy for improvement of nasal airway or middle-ear aeration. Shin and Hartnick concluded

that endoscopic transnasal adenoidectomy was relatively safe and effective, with less chance of retaining residual adenoids.

Skilbeck *et al.*<sup>7</sup> assessed the use of suction diathermy for adenoidectomy, analysing complications and risk of recurrence. When introduced, suction coagulation was initially utilised for haemorrhage control, following curettage of the adenoid pad. Later, the whole procedure was performed using this technique. Skilbeck and colleagues' study aimed to assess post-operative haemorrhage rates and risk of recurrence following adenoidectomy performed solely by suction diathermy in children. In this retrospective study of 1411 consecutive children, all surgery was performed using suction diathermy. No patients were excluded, and all patients were followed up. No cases of post-operative haemorrhage were encountered. Only 1.7 per cent of patients remained symptomatic and underwent revision adenoidectomy. None required a third procedure. The incidence of regrowth was similar to that reported in patients undergoing conventional adenoidectomy by curettage. The authors suggested suction diathermy as the most appropriate method for adenoidectomy in children.

Skilbeck and colleagues' study found a similar revision adenoidectomy rate (1.7 per cent) to our previous study<sup>1</sup> (1.6 per cent). Our current study assessed respondents' recognition of the need for revision adenoidectomy as a problem; a total of only 90 consultants (27 per cent (16.2 per cent + 10.8 per cent)) recognised such a need as a problem.

The questionnaire used in the study consisted of mainly closed set questions except for question 4. It is a well recognised fact that the depth or "richness" of the respondents' answers would have greater if open set questions had been used as well. If open set questions had been used this aspect could have been addressed, however the analysis would have been more difficult and would probably require a qualitative approach.

- **Adenoidectomy is a very commonly performed ENT procedure**
- **Amongst UK ENT consultants responding to this postal questionnaire, digital palpation followed by blind curettage was the most commonly used adenoidectomy technique**
- **Only 10 per cent of respondents reported using a mirror during adenoidectomy, and only 8 per cent an endoscope; thus, only these respondents reported performing adenoidectomy under direct vision**
- **Residual adenoidal tissue (rather than adenoid regrowth) is a complication of traditional curettage adenoidectomy**
- **We recommend improvement of current adenoidectomy practice by peri-operative visualisation of the postnasal space using a mirror or an endoscope**

One of the problems with the study was the response rate (66.6 per cent). This was a reasonable response rate for a postal questionnaire study. In addition, we did not send out reminders to non-respondents, which could have increased the response rate. Electronic surveys of ENT–UK contacts, conducted via e-mail, have had a response rate of only approximately 50 per cent. In our study, the non-responder rate was 33.4 per cent. If all our questionnaire recipients had responded, our results may have differed, as non-respondents' attitudes, beliefs and treatment policies may have differed compared with respondents. We did not contact non-responders by telephone, as we felt this was an inappropriate breach of their privacy.

The other main limitation of the current study was that we did not specifically ask respondents for their revision adenoideotomy rates, to enable a comparison of direct vision and blind techniques in this respect. Although the final question in our questionnaire aimed to assess the percentage of respondents recognising the need for revision adenoideotomy, it did not specifically differentiate between these two groups. However, most respondents would not have had this information available, except as rough estimates and unaudited data.

### Conclusion

According to this postal questionnaire survey, digital palpation followed by blind curettage is the most commonly used adenoideotomy technique amongst UK ENT consultants.

The most commonly used adenoideotomy technique reported by our respondents was blind curettage (263 respondents (79.2 per cent)). Only 10 per cent of our respondents reported using a mirror to examine the postnasal space, and only 8 per cent an endoscope; these were the only respondents reporting performance of adenoideotomy under direct vision.

Only 90 respondents (27 per cent (10.8 + 16.2 per cent)) reported recognising the need for revision adenoideotomy as a problem. Therefore, more than 70 per cent failed to recognise this possibility in symptomatic children, who might thus be denied potentially beneficial revision adenoideotomy.

Various other studies have clearly shown that complete removal of the adenoids is better performed when the postnasal space is visualised. Our survey identified an under-recognition of this problem. Residual adenoids are acknowledged as one of the complications of traditional technique adenoideotomy. We recommend improvement of current adenoideotomy practice by peri-operative visualisation of the postnasal space with a mirror or an endoscope.

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### Appendix 1. Postal questionnaire: adenoideotomy technique

- (1) Do you believe in the role of adenoideotomy in the treatment of glue ear?
  - Yes
  - No (If no, please exit questionnaire)
- (2) Please estimate what percentage of your primary ventilation tube insertion patients undergo adenoideotomy?
  - <5 per cent
  - 5–30 per cent
  - 30–80 per cent
  - >80 per cent
- (3) How do you examine the postnasal space at adenoideotomy?
  - Finger
  - Mirror
  - Endoscope
- (4) What is your routine technique of adenoideotomy?
  - Blind curettage
  - Curettage under direct vision (mirror)
  - Suction diathermy ablation
  - Power-assisted adenoideotomy
  - Other (please specify)
- (5) Do you recognise the need for revision adenoideotomy as a problem?
  - Never
  - Rarely
  - <2 per cent
  - >2 per cent

Thank you for taking time to complete the questionnaire.

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Mr G Dhanasekar takes responsibility for the integrity of the content of the paper.  
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