Electrocautery adenoidectomy outcomes: a meta-analysis

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CRD summary
The review concluded that compared with curette adenoidectomy, electrocautery adenoidectomy decreased intraoperative haemorrhage and operative time in paediatric patients, but that evidence for long-term data was limited. Methodological limitations of the review suggest that the authors’ conclusions are not likely to be reliable.

Authors' objectives
To evaluate the efficacy of suction electrocautery adenoidectomy on clinical outcomes in paediatric patients.

Searching
MEDLINE was searched for articles published in English from 1963 to February 2008. Search terms were reported. Bibliographies of identified studies were checked.

Study selection
Studies that evaluated suction electrocautery adenoidectomy and reported subjective success were eligible for inclusion. Studies with less than five participants or insufficient extractable data were excluded.

Randomised controlled trials (RCTs), individual case-controlled studies and case series were included in the review. Studies evaluated electrocautery adenoidectomy alone or compared with curette adenoidectomy. Where reported, Bovie setting (device power setting) ranged from 25W to 40W. The mean age of patients ranged from 4.9 years to 6.6 years. Reported outcomes for treatment success included symptom improvement, adenoid regrowth, complications, intraoperative blood loss, haemorrhage and parental satisfaction.

The authors stated neither how the papers were selected for the review nor how many reviewers performed the selection.

Assessment of study quality
A hierarchy of evidence based on study design was used to determine study quality. The authors did not state how many reviewers performed the validity assessment.

Data extraction
Percentage success and success criteria were recorded for each study. Success rate was recorded as defined by the individual study. Data were independently extracted by all reviewers. Disagreements were resolved by consensus.

Methods of synthesis
Percentage success rates for each outcome were reported. Pooled success rates with 95% confidence intervals were calculated using random-effects models. Summary estimates of direct comparisons (electrocautery adenoidectomy versus curette) were reported as weighted mean difference (WMD) or standardised mean difference (SMD). Subgroup analysis in terms of patient age, follow-up time and electrocautery setting were planned a priori, but due to insufficient data were not completed.

Results of the review
Nine studies were included in the review (n=2,522). Sample sizes ranged from 23 to 1,387.

Subjective success for any form of adenoidectomy was high, ranging from 82.6% to 98.4% (eight studies). Overall success rate of electrocautery adenoidectomy (based on subjective reporting of improvement after surgery) was 95% (95% CI: 92.7 to 97.3%; six studies), complication rates were 1.9% (95% CI: 0.5 to 3.3%; eight studies), adenoid regrowth was 2.8% (95% CI: 0 to 5.5%; seven studies).

A reduction in intra-operative blood loss (weighted mean difference 19.8cc, 95% CI: 16.51 to 23.12cc; p<0.001 and
standardised mean difference 1.61, 95% CI: 1.35 to 1.86, p<0.001; three studies) and a small advantage in operative
time (weighted mean difference 1.86 minutes, 95% CI: 0.82 to 2.9 minutes, p<0.001 and standardised mean difference
0.50, 95% CI: 0.27 to 0.73, p value not reported; three studies) was found for electrocautery adenoidectomy when
compared with curette adenoidectomy.

Authors' conclusions
The available evidence favoured electrocautery adenoidectomy compared with curette adenoidectomy in terms of
decreased intra-operative haemorrhage and operative time. Long-term data on electrocautery adenoidectomy were
scarce, but findings indicated a low regrowth and complication rate.

CRD commentary
The review question was supported by broad inclusion criteria. The authors searched only one database (restricted by
language) and did not report any attempts to identify unpublished studies, which meant that some relevant studies may
have been missed. The authors reported using rigorous methodology to extract data, but it was unclear whether similar
methods were used to select studies. Study quality was not fully assessed, being crudely ranked by study design without
further systematic validity assessment. Pooling of studies may not have been appropriate given the differences between
studies in terms of study design, surgical technique and patient populations. Statistical heterogeneity did not appear to
have been assessed. Given the numerous methodological limitations, the authors' conclusions are not likely to be
reliable.

Implications of the review for practice and research
Practice: The authors stated that given the evidence that electrocautery adenoidectomy was comparable to curette
adenoidectomy in terms of regrowth and complication rate and demonstrated advantages in terms of blood loss and
operative time, combined with low cost, it was a reasonable method of choice.

Research: The authors recommend that future studies should be directed at analysing pain, long-term outcomes and the
comparability of electrocautery adenoidectomy with newer adenoidectomy techniques.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.