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An analysis of the literature addressing tonsillectomy knowledge gaps

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ABSTRACT

Importance: The ability of clinical practice guidelines to improve patient outcomes depends on the quality of evidence that they are built upon. Research into tonsillectomy in children is lacking, and the gaps in evidence were identified by guideline authors.

Objective: The objective of this study is to evaluate the extent that new research is addressing the gaps identified in the AAO-HNS Tonsillectomy in Children Guideline.

Design: For each recommendation in the AAO-HNS guideline Tonsillectomy In Children, we created PICO (Participants, Intervention, Comparator, Outcome) questions and search strings. PubMed was searched to locate studies undertaken after the final literature search performed by the AAO-HNS work group. These studies were then extracted and analyzed.

Setting: This study is relevant to all invested in focusing otolaryngological research on questions which currently lack strong evidence.

Participants: Trials in tonsillectomy that started after the development of the AAO-HNS clinical practice guidelines.

Main outcome measures: The main outcome measures of this study is the extent to which tonsillectomy research is addressing the evidence gaps listed in the clinical practice guideline.

Results: Of the 2519 studies included in our sample, 276 (11%) were relevant to the 18 recommendations made within the Tonsillectomy in Pediatric Patients clinical practice guideline. All but one of the recommendations was met by at least one study.

Conclusions: and Relevance: Our findings indicate that knowledge gaps within the guideline at publication may have since been addressed and a guideline update may thus be warranted.

Level of evidence: NA.

1. Introduction

Tonsillectomy is a surgical procedure, performed with or without adenoidectomy, that involves complete removal of the tonsils and their capsule by dissection of the peritonsillar space between the tonsil capsule and the muscular wall [1]. This procedure is very common in the United States, representing > 15% of all surgical procedures in children under 15 years of age [2]. The American Academy of Otolaryngology–Head and Neck Surgery (AAO-HNS) reports that more than 530,000 tonsillectomies are performed in children and adolescents in the United States each year owing to recurrent throat infections or sleep-disordered breathing such as sleep apnea [3]. Complications of tonsillectomy include pain, bleeding, damage to oral structures, voice change, and in rare cases death [1].

The diversity of patients requiring tonsillectomy and the potential risk of complications arising from this procedure prompted the AAO-HNS to create an evidence-based clinical practice guideline to help clinicians identify patients who might benefit most from this procedure [3]. As with all clinical practice guidelines, the quality of the guideline is determined by the quality of the research that underpins them. Chalmers and Glasziou [4] estimated that up to 85% of research is wasted or has little value because of poor methodology, underpowered sample sizes, different types of biases, the wrong research questions being addressed, and other factors. Despite the considerable amount of research produced during the past 4 decades, evidence to guide patient care and policies regarding tonsillectomy procedures remains insufficient [5].

Evidence gaps in pediatric tonsillectomy research were first

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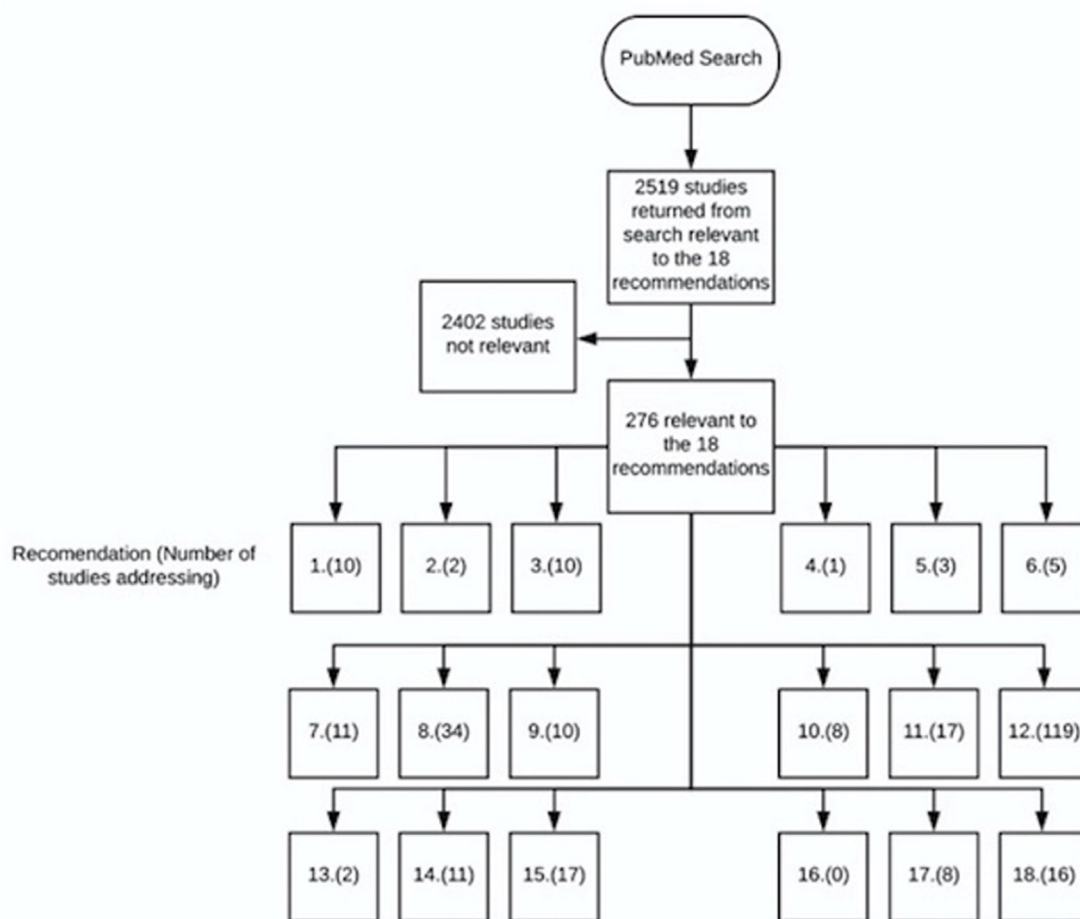


Fig. 1. Flow diagram detailing screening and results.

highlighted over 40 years ago [6]. A recent study by Mandavia et al. [5] evaluated key research challenges for informing health policies with regard to tonsillectomy. Their findings indicate that despite recognition of these evidence gaps, tonsillectomy research is still not adequately addressing them. The authors offered recommendations on how to ensure that future research better addresses these gaps, such as improved collaboration between researchers and policy makers during the research process. Piccirillo et al. [7] elaborated on those findings further, detailing 6 themes that impede advances in the care of otolaryngology patients. The themes include excess focus on basic explicative science research, not asking the right clinical research questions, poorly designed or executed research, nonpublication of completed research, poor reporting quality of research, and failure to disseminate and implement important findings.

It is important to conduct research that can be used to guide policy and clinical decision making regarding tonsillectomies and that minimizes research waste and improves outcomes for otolaryngology patients. The primary objective of this study was to explore whether otolaryngology researchers are addressing the research gaps identified within the AAO-HNS guidelines. The authors of the guidelines identified 18 areas of needed research regarding tonsillectomies. Using these recommendations, we replicated the AAO-HNS's PubMed search strategy from within the tonsillectomy guideline to determine the extent to which new published research was undertaken to address areas of deficiency.

2. Methods

2.1. Oversight and reporting

We located the latest clinical practice guideline for tonsillectomy from the AAO-HNS website. Within this guideline, the authors gave 18 recommendations for future research [1]. We extracted these recommendations and created one or more research questions using the PICO format (Participants, Intervention, Comparator, Outcome) for each recommendation. The PICO method is a tool used to identify clinical elements for systematic reviews and is recommended by the Cochrane Collaboration [8]. This approach was used in order to increase the accuracy of evaluating which studies addressed the recommendations. The PICO method was chosen over other methods because evidence suggests that it produces searches with greater sensitivity.

2.2. Search strategy

We located the search string used by the authors of the tonsillectomy guideline, and we replicated this search in PubMed. The search string was deployed as follows: tonsillectom*, adenotonsillectom*, tonsillotom*, posttonsillectom*, (tonsil* OR adenotonsil*) AND (surg* OR operat* OR remov* OR preop* OR periop* OR postop*).

2.3. Searching PubMed

Using the search string for PubMed, we retrieved studies using the

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