

Tympanostomy Tubes: Indications for Referral Versus Indications for Surgery

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ABSTRACT

The purpose of this study was to compare reasons family doctors use for referral of children for tympanostomy tubes to the indications for this surgery used by otolaryngologists practicing in the same region. A checklist type of survey was sent to a random sample of family doctors and all of the practicing otolaryngologists in Nova Scotia in Spring 1995. There were significant differences between reasons for referral and indications for treatment in many areas. Education is needed to improve this situation.

There are many reasons why family doctors refer children to otolaryngologists. The purpose of this study as to examine only one of these reasons; specifically, why family doctors refer children for placement of tympanostomy tubes. Tympanostomy tube insertion is the most common operative procedure performed for children in North America(1). It is probably true that every Canadian family physician with a pediatric component to his or her practice is responsible for the care of children who either currently have tympanostomy tubes in place or who would benefit from having them inserted. Some knowledge about this type of medical intervention is necessary for this group of practitioners.

A child with ear disease may be referred to an otolaryngologist for a variety of reasons, among which may be hearing loss, speech delay, otorrhea, or recurrent otalgia, but many are referred specifically for consideration for tympanostomy tube placement. In this study, we discover what family doctors' criteria for referral for tympanostomy tube placement are, and whether these matched the criteria used for this procedure by the local otolaryngology community.D

METHOD

A two page survey with a cover letter was sent to a random sample of 300 (out of 833) family practitioners (FPs) and all otolaryngologists (ENTs) licensed by the Medical Board of Nova Scotia in 1995(2). Two mailings took place between May and June of 1995.

The survey included demographic data, professional qualifications, and practice characteristics. FPs were asked if there was an otolaryngologist in their community, and how many children they referred to otolaryngologists per month. This data has been reported elsewhere(3).

The survey contained a list of indications for tympanostomy tubes which was compiled from four current textbooks of otolaryngology(4-7). One was added as a test question to ensure that respondents would not check off all as correct because they all "sounded right". "Parental

insistence" as a reason for referral was also listed. The complete list of indications used in the survey is shown in Table 1.

Frequency of responses were compared between FPs and the ENTs using Mann-Whitney U tests.

RESULTS

Surveys were returned by 50% (N=148) of FPs and 87% (N=14) of ENTs.

Table 1 Indications for Tympanostomy Tubes in Children and Percentages of Respondents who Agreed

Indication	% FPs	% ENTs	P-Value
Failure to thrive	4	0	0.44
Chronic otitis media with effusion refractory to medical therapy after 3 months duration	67	93	0.05*
Chronic otitis media with effusion refractory to medical therapy after 2 months duration	30	14	0.21
Recurrent acute otitis media: 3 or more episodes during preceding 6 months	51	29	0.15
Recurrent acute otitis media: 4 or more episodes during preceding year	45	57	0.40
Acute otitis media with complications (mastoiditis, meningitis, facial paralysis)	56	86	0.03*
Tympanic membrane atelectasis	21	86	<0.0001*
Hemotympanum without spontaneous resolution	25	50	0.05*
Cholesterol granuloma	20	14	0.59
Patulous eustachian tube	7	42	<0.0001*
Otitis media not responding to 4 weeks of medical therapy	49	21	0.05*
Severe conducting hearing loss	66	42	0.09

Cleft palate	21	57	0.003*
Parents insist on referral	58	0	<0.0001*
Family history of otitis media	0.6	0	0.076

FPs= Family Physicians

ENTs= Otolaryngologists

*= Significant at $p < 0.05$

Of the FPs, 72% had been trained at Dalhousie University, 24% were still affiliated with the medical school, and 64% had CCFP certification. Fifty-three percent of FPs had an otolaryngologist in their community. They made an average of 3.69 referrals of children to ENTs per month which was not different regardless of whether the referring doctor was CCFP certified or not, had greater or less than 10 years in practice, or had an otolaryngologist in their community. The ENT group saw on average 34 patients per clinic day and 7 patients per surgery day, half of whom were children.

The frequency of indications for referral or surgery and P-values are listed in Table 1. There were 8 of 15 indications that were significantly different in the frequency indicated by the FPs and ENTs. FPs with less than 10 years in practice were in closer agreement with the ENTs; (5 of 15 were significantly different), but CCFP certified FPs were not different from the family practice group as a whole.

DISCUSSION

Indications for tympanostomy tube insertion vary to some degree and it was not the goal of this study to assess these, but to see if there was agreement between the primary care physicians and the otolaryngologists in Nova Scotia. Almost three quarters of the family physicians were trained at Dalhousie Medical School. Their undergraduate medical education may well have a significant impact on health care and its economics in the province.

Although the list of indications used in the survey was taken from textbooks, there are publications documenting the role of tympanostomy tubes in otitis media management which are results of consensus conferences(8,9). In no case did every ENT respondent in the province agree that a given indication was appropriate for tube placement. Most agreement was in the area of chronic otitis media, where 93% of ENTs agreed that a patient with an effusion persisting for more than three months would benefit from tube placement. Eighty-six percent of ENTs agreed that acute otitis media with complications and atelectatic tympanic membranes were appropriate situations for tympanostomy tubes.

Results suggest that FPs are unsure of when to appropriately refer children for tympanostomy tubes, where "appropriateness" reflects the probability that the child will undergo the procedure. Despite this fact they do refer children to otolaryngologist at very high rates.

Some of the areas of disagreement may be important. For example, only two-thirds of FPs would send a child with an effusion persisting for 3 months for tympanostomy tubes, even though there is widespread belief in the medical community that this is beneficial. FPs are more likely than ENTs to think that tympanostomy tubes are helpful in acute situations, such as otitis media not responding to 4 weeks of medical therapy, or for patients who have 3 episodes of acute otitis media in 6 months. FPs do not recognize the role of tympanostomy tubes to treat tympanic membrane atelectasis. The most significant difference was that a large proportion of FPs will refer children for assessment for tympanostomy tubes solely because of parental insistence. Why parents may insist on referral is not explored in this study. Is it that they are better informed than their FPs about when tympanostomy tubes are indicated? Is there a weakness in the FP-parent relationship such that the parent does not believe the FP when told that their child would not benefit from tympanostomy tubes?

Nunez looked at otolaryngological out-patient referrals at a British clinic in 1989 and estimated that 13% were inappropriate in that they had no evidence of otolaryngologic disease, and required no treatment, investigation or followup (10). Although we did not examine all reasons for referral, if this same pattern occurs locally, improvement in the area of referrals for tympanostomy tube insertion could be important for the province's health care spending.

How do we close the gap between the specialists' indications for a procedure and the FPs referrals for that procedure? Practice guidelines such as the American Academy of Otolaryngology-Head & Neck Surgery 1996 Revised Referral Guideline Kit (11) are available and may be helpful. This is an aid for otolaryngologists who are developing their own primary care referral guidelines, which they communicate to the physicians who refer patients to them. Referral guidelines have been shown to be effective in reducing unnecessary referrals (12). Practice guidelines are sometimes viewed with suspicion by practitioners who realize that some patients do not fit the typical criteria, and may be disadvantaged if such guidelines gain legitimacy with health care insurers. Previous work in Nova Scotia has suggested that non-medical considerations such as "patient's wishes" have influence on when FPs refer patients to consultants (13). Whether this is acceptable in a closed universal access government-funded medical care system is debatable, but what is clear is that this uses up finite resources. In the tiny area of medicine composed of tympanostomy tube referrals, we can do better.

Incorporation of appropriate otolaryngology training in residency programmes, such as family practice, paediatrics, and certain internal medicine specialties, would also help close this gap. Again, this training should not take the form of simply spending time on an otolaryngology service, since a tertiary care teaching institution may not provide the type of clinical exposure

that is relevant to these areas of medicine. An appropriate rotation with well-conceived objectives, perhaps with a community otolaryngologist, may be valuable.

Education in Nova Scotia can also mean undergraduate medical education since only a small proportion of family doctors in this province were trained elsewhere. Half of the medical class will become family physicians (14), where 20-30% of their practice is likely to be otolaryngological (15- 17). Very little curricular time is spent on common otolaryngological problems. This mismatch between curriculum and practice has been described previously (18,19). Despite the inauguration of a two week core rotation in Otolaryngology in the 1997-98 Dalhousie medical school year, without consensus among otolaryngologists, and appropriate curriculum design and evaluation, narrowing of this knowledge gap may not occur.

CONCLUSION

Nova Scotian FPs and ENTs do not have consensus in many areas with respect to when children should have tympanostomy tubes placed. Collaboration on the development of a general set of guidelines, combined with communication with the primary care community and education of trainees may correct this situation.

ACKNOWLEDGEMENTS

The author would like to acknowledge the contribution of Dr. Kevin Clarke who participated in the design of the questionnaire and financially supported the data collection phase of this project.

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