

## Audit Article

# Management of paediatric otitis media with effusion in the UK: a survey conducted with the guidance of the Clinical Effectiveness Unit at the Royal College of Surgeons of England

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### Abstract

A survey was undertaken of the practice of all Otorhinolaryngologists in England and Wales looking both at practice in general and at management of individual patients, including a patient satisfaction questionnaire, under the auspices of the Clinical Effectiveness Unit at the Royal College of Surgeons. Postal questionnaires enquired about practice in general and management in particular of 20 sequential patients per consultant. Parent questionnaires were sent six weeks and one year post-operatively. Ninety consultants took part and 1503 individual patient proformas were returned. Results showed that these consultants are managing children with otitis media with effusion (OME) in a manner very close to the recommendations of the *Effective Healthcare Bulletin* (1992) and consistent with the recent *Clinical Effectiveness Statement* of the BAOHNS, and that the intervention is popular with parents.

**Key words:** Evaluation Studies; Otitis Media with Effusion; Guidelines

### Introduction

Chronic otitis media with effusion is an extremely common condition with a known prevalence of upto 17 per cent in five-year-olds,<sup>1</sup> and surgery for otitis media (usually grommet insertion) is one of the commonest procedures performed on children.<sup>2</sup> Recently much work has been done to characterize up-to-date best practice,<sup>3</sup> although this should not be considered definitive as long-term outcome measures for success following grommet insertion have yet to be validated.<sup>4</sup> In order to ascertain whether current best practice recommendations were being followed widely around the country, a survey was undertaken of the practice of all otorhinolaryngologists in England and Wales, looking both at practice in general and at management of individual patients, including a patient satisfaction questionnaire.

### Patients and methods

Under the auspices of the Comparative Audit Service at the Royal College of Surgeons, postal questionnaires were sent in October 1996 to all

consultant otorhinolaryngologists in England and Wales (Table I) regarding the surgical management in general of otitis media with effusion (OME). Each consultant was also asked to fill in a form for each of 20 sequential patients undergoing surgery for otitis media with effusion, describing their management (Table II). The forms were designed to be read by

TABLE I  
SUMMARY OF QUESTIONNAIRE REGARDING SURGICAL MANAGEMENT  
IN GENERAL OF OTITIS MEDIA WITH EFFUSION

Questions included in the questionnaire on practice in general:  
Are there written guidelines or protocols for the management of OME in your department?  
Do you routinely employ a “watchful waiting” period?  
Do you put patients on a provisional waiting list?  
Do all children have pre-operative audiological or impedance testing?  
Do you give parents an advice sheet on management of OME?  
Is there audiological support in all outpatient’s clinics?  
What tests are routinely performed during out-patient’s clinics?  
(PTA/VRA/impedance/electrophysiological/distraction)

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TABLE II

SUMMARY OF QUESTIONNAIRE REGARDING MANAGEMENT OF INDIVIDUAL PATIENTS UNDERGOING SURGERY FOR OTITIS MEDIA WITH EFFUSION

Questions included in proforma on individual patients:

- Time on waiting list.
- Has an age-appropriate hearing test been performed?
- If so, how long before surgery?
- Has the patient had medical management before surgery?
- What grade of surgeon put the child on the waiting list?
- What type of grommet was used?
- What type of effusion was found? (or dry tap)
- What surgery was carried out other than grommets?
- Were ear drops used pre-operatively or post-operatively?
- Were there any complications during admission?

optical scanning. Consultants were identified by a confidential number, and patients were identified by an anonymized number. Consultants returning data from more than one unit were given a separate number for each unit, and returned data on less than 20 patients, pro rata. All the data were transferred to an Access database (Microsoft) for analysis, and the results were subsequently transferred to a graphics program to produce charts such as Figure 1. Each chart shows the range of responses to a particular question, with the individual consultant's answers ranked in ascending order. A unique and confidential ranking sheet was provided for each consultant, allowing him or her to find his or her rank number on each chart but to recognize only his or her own place in the ranked order, and not that of other consultants.

Two separate patient/parent questionnaires were posted to all the patients identified by the participating surgeons. The first satisfaction form was posted approximately six weeks and the second approximately one year after surgery. The questionnaires asked items about perceived changes in hearing, schooling problems, speech problems and general satisfaction with the surgery. Free text comments were also invited.

**Results**

Ninety consultants returned a completed management form and 85 consultants returned individual patient proformas on 1503 patients. With respect to

Bilateral dry tap rate per consultant: surgery performed for bilateral deafness. Mean = 13.8% (166/1200); range 0-100%

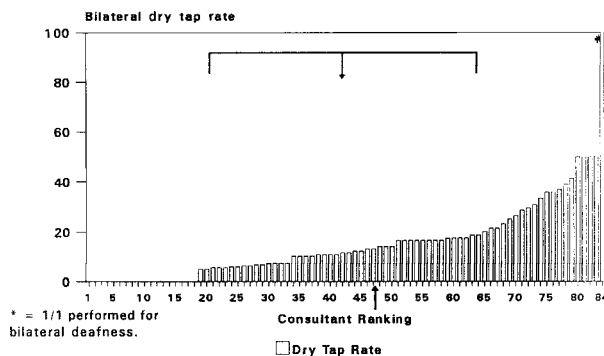


FIG. 1  
Dry tap rate per consultant

management in general, 46 per cent of 87 consultants replied "YES" to the questions: "Do you use guidelines or protocols?", and of 88 consultants 69 per cent gave an advice sheet to parents. (The total number of consultants responding to each question varied, hence a different n value for each question.) Fifty-four of 89 consultants (61 per cent) replied that they used "watchful waiting", and of the 35 consultants who replied "NO" to this question, 11 did use a provisional waiting list. Of the 90 consultants replying to the question about audiology facilities in clinic, 100 per cent had pure tone audiometry available in every clinic, but only 45 (50 per cent) had distraction available in every clinic, and 30 had visual reinforcement audiometry (VRA).

Individual patient proformas were returned on 1503 patients. The median time spent on the waiting list prior to surgery for otitis media was three months (range 0-23 months). Fifty-three per cent were listed by consultants and 94 per cent had audiometry or tympanometry pre-operatively. Thirty-three per cent underwent adenoidectomies as well as grommet insertion, and 31 per cent had had previous surgery for OME. The dry tap rate per consultant was 14 per cent and in 99 per cent of cases there were no complications (none of the complications related to the actual grommet insertion - see Table III). For each question, a ranking chart was given to each consultant. Figure 1 shows the dry tap rate per consultant.

TABLE III  
COMPLICATIONS REPORTED

Complication Reported	Severity	My	Procedure		
			G	A	T
Vomiting in first 6 hours	Minor	0	1	1	0
Slight ooze from nasopharynx	Minor	0	1	1	0
Post-anaesthetic vomiting	Minor	0	1	0	0
Post-adx - slight bleed	Minor	0	1	1	0
Lethargic post-operatively	Minor	1	1	1	1
L otalgia	Minor	1	1	0	0
Vomiting 12 hours	Minor	0	1	1	0
Anaesthetic complications	Minor	1	1	0	0
Post-op apnoea due to very large tonsils	Major	0	1	1	0
Bleed from adenoid bed return to theatre	Major	0	1	1	1
Haemorrhage post-tonsillectomy	Intermediate	1	0	1	1
Bronchospasm	Intermediate	1	1	0	0

TABLE IV

RESPONSES TO THE QUESTION: "AS FAR AS YOU ARE OR HE/SHE IS CONCERNED, CAN YOUR CHILD HEAR BETTER SINCE THE ORIGINAL OPERATION?"

Response	6 weeks, 673 patients	1 year, 523 patients
Yes	532 (79%)	329 (62.9%)
No change	65 (9.6%)	33 (6.3%)
Worse	2 (0.3%)	6 (1.1%)
Better initially but not so good now	-	119 (22.7%)
No initial improvement but gradually getting better	-	13 (2.5%)
Not sure	74 (10.9%)	23 (4.4%)

Of the original 1577 patients who were sent patient satisfaction forms in the 1996/1997 study, forms were returned at six weeks by 913 (58 per cent) and at one year by 701 (44 per cent). The patient age range was from less than one year to 16 years. The operations performed on these children were as follows:

No grommets	82
Grommets alone	876
Grommets + adenoids	293
Grommets + adenoids + tonsils	168
Grommets + tonsils	26
Grommets + other	45
Grommets + adenoids + other	8
Grommets + adenoids + tonsils + other	3
Grommets + tonsils + other	2

Table VI shows the answer to the question: "As far as you are or he/she is concerned, can your child hear better since the original operation?" when the surgery was performed for bilateral deafness. This subgroup was identified by cross-referencing with the operative records. (Children who had grommets inserted for recurrent acute suppurative otitis media, for instance, might not expect an improvement in the hearing). The 22.7 per cent who thought the hearing was better initially than at one year post-operatively may represent those with recurrence of glue ear after extrusion of the grommets.

Almost 60 per cent of patients thought that their children were performing better at school at six weeks, and this did not increase at one year (Table V). Of children who had had speech problems due to hearing trouble, 59 per cent seemed better to the parents at six weeks and 51 per cent at one year (Table VI). Eighty per cent of 683 children had been swimming, and of these 82 per cent had no problems such as pain or discharge as a result.

TABLE V

RESPONSES TO THE QUESTION: "IF YOUR CHILD WAS HAVING DIFFICULTIES AT SCHOOL BEFORE THE OPERATION, IS HE/SHE GETTING BETTER NOW?"

Response	6 weeks, 732 patients	1 year, 573 patients
Yes	438 (59.8%)	321 (56.0%)
No change	191 (26.1%)	125 (21.8%)
Worse	5 (0.7%)	5 (0.9%)
Better initially but not so good now	-	63 (11.0%)
No initial improvement but gradually getting better	-	25 (4.4%)
Not sure	98 (13.4%)	34 (5.9%)

TABLE VI

RESPONSES TO THE QUESTION "IF YOUR CHILD HAD SPEECH PROBLEMS CONFIRMED AS BEING DUE TO THE PROBLEMS WITH HIS/HER EAR(S), ARE THEY IMPROVING?"

Response	6 weeks, 438 patients	1 year, 358 patients
Yes	255 (58.2%)	183 (51.1%)
No change	129 (29.5%)	100 (27.9%)
Worse	1 (0.2%)	3 (0.8%)
Better initially but not so good now	-	17 (4.7%)
No initial improvement but gradually getting better	-	24 (6.7%)
Not sure	53 (12.1%)	31 (8.6%)

Overall 88 per cent of parents at one year were either glad or very glad that the operation had been performed (Table VII), though of course this question does not rule out the possibility that parents may be glad because of beneficial effects of any additional procedures performed with the grommets.

**Discussion**

This project is unique amongst those run by the Ear, Nose and Throat (ENT) Subcommittee of the Royal College of Surgeons Comparative Audit Service in that it not only compares individual practice against pooled data, but it also compares practice against published recommendations regarding best practice. (The term "standard" remains so controversial because of connotations of rigidity that it will be avoided here.) Individual surgeons can identify whether their ranking on a chart classifies them as an "outlier", in which case (unless there is a good explanation) the surgeon might examine his own practice with the aim of seeking an improvement. Individual surgeons can also compare their practice against recommendations which have been made. These comparative results remain confidential but results for the group of responders as a whole are not confidential, and would seem to suggest that best practice is being followed widely. For example, with respect to "watchful waiting",<sup>3</sup> a large majority of the responders either employ this practice or use a provisional waiting list, and those who do not may have access to an earlier audiogram performed in the community so that "watchful waiting" may already have occurred before the first outpatient appointment. The overall dry tap rate for the group was also low, although no guidelines have been suggested for this.<sup>5</sup>

TABLE VII

RESPONSES TO THE QUESTION: "ARE YOU GLAD OR SORRY THAT THE OPERATION WAS PERFORMED?"

Response	6 weeks, 897 patients	1 year, 682 patients
Very glad	661 (73.7%)	460 (67.4%)
Quite glad	157 (17.5%)	139 (20.4%)
The operation has had no effect	30 (3.3%)	31 (4.5%)
Sorry	10 (1.1%)	10 (1.5%)
Very sorry	-	1 (0.1%)
Not sure	39 (4.3%)	41 (6.0%)

It is unfortunately impossible to separate out-patients who had formal pure tone audiometry or an age-appropriate test of hearing pre-operatively from those who had only tympanometry to confirm the presence of otitis media. Although no one would doubt that a pre-operative age-appropriate hearing test is ideal, this is unlikely to be achieved in all cases while only 50 per cent of consultants have distraction testing available to them in the clinic and only 30 per cent have VRA. Whether more emphasis should be placed at local level on channelling young children who need VRA or distraction into special paediatric clinics before making a decision to operate is a matter of debate.

Poor response rates have been cited as a reason to consider making comparative audit compulsory or, conversely, discontinuing it altogether,<sup>7</sup> and there is no doubt that the result of this study would be more valuable if the response rate had been higher. However, compulsory comparative audit would be almost impossible to enforce, and it might lead to submission of inaccurate returns. If some form of national comparative audit is to continue, the solution may lie in providing incentives to encourage a larger number of otolaryngologists to submit returns. Alternatively, in the context of clinical governance, an alternative might be to publish the names of surgeons who did and who did not contribute data to the audit.

Results of parent satisfaction studies in this context should obviously not be confused with results of objective outcome measures. It is undeniable that some parents will underestimate or overestimate their child's hearing either before or after surgery, and satisfaction measures in this context are not as applicable as when a procedure is performed purely for symptom relief. However, given the current lack of simple valid long-term objective outcome measures in surgery for otitis media<sup>6</sup> it could be argued that parent satisfaction measures have a place.

It appears that interested otorhinolaryngologists are managing children with OME in a manner very close to the recommendations of the *Effective Healthcare Bulletin* (1992) and consistent with the recent *Clinical Effectiveness Statement* of the BAOHNS, and that the intervention is popular with parents.

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