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Short Communication

Minimum dataset for recording myringotomy and ventilation tube insertion

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Abstract
A minimum dataset for recording of findings during myringotomy and ventilation tube insertion for cases of otitis media with effusion is presented. With increasing pressures on surgeons to audit existing practices and hence improve standards of health care, it is appropriate to produce such a set of guidelines for a surgery that is frequently performed world-wide. We believe that the data presented is not too exhaustive and can be readily incorporated into the operative notes.

Key words: Otitis Media with Effusion; Surgical Procedures, Operative; Data Collection

Introduction

It is observed that hospital audit centres within NHS trusts request individual medical and surgical units to propose a set of guidelines and minimum datasets for specific disease states and surgical procedures. Most consultant otolaryngologists have their own 'plan' for data entry but a consensus dataset would make data-analysis, clinical audit and future multi-centric comparisons plausible. We propose here a minimum dataset for the recording of pre-operative data as regards myringotomy and ventilation tube insertion, which is one of the commonest ENT surgical procedures undertaken. This descriptive dataset is a simple modification of the surgical 'coding' protocol used in the TARGET (trial of alternative regimens for glue ear treatment) study of the Medical Research Council (MRC) Institute of Hearing Research, United Kingdom.

Dataset

Table I details a list of intra-operative findings that may be considered essential information for documentation and for comparative audits with respect to ventilation tube insertion. Each parameter is individually discussed hereunder.

TABLE I
MINIMUM DATASET FOR MYRINGOTOMY AND VENTILATION TUBE INSERTION

Parameter	Right ear	Left ear
1. External auditory canal (EAC)		
2. Pars flaccida (attic)		
3. Pars tensa (TM)		
4. Myringotomy site		
5. Fluid (characteristics)		
6. Middle-ear mucosa (MEM)		
7. Grommet (Gt)		
8. TM trauma		
9. Medication		
Any other:		

The External Auditory Canal (EAC)

The size of the EAC, presence of wax, presence and hence removal of previous grommets would be useful information.

Pars tensa (Tympanic Membrane – TM)

The state of the tympanic membrane in terms of position and evidence of pathology would be useful information. It may be necessary to use descriptive terms such as retraction (Sade grades of atelectasis, 0 to 4, Appendix 1),[1,2] focal atrophic segments, focal retraction pockets, tympanosclerotic plaques, chalk patches, features of inflammation, increased vascularity (prominent arcades), blue drum, herodions and granulomas. It has been noted in the longer term, atrophic changes in the pars tensa or atelectasis may affect the ossicular chain producing myringo-incudostapediopexy.[3] The surgeon may choose to use a simple schematic diagram of the features of the tympanic membrane dividing the pars tensa into three segments or four quadrants.

Appendix 1

Sade classification of pars tensa retractions[1,2]

Grade 0: Normal pars tensa without retraction
Grade 1: Pars tensa is slightly retracted, i.e. retraction to the level of the annular ligament
Grade 2: Pars tensa touches the ossicular chain
Grade 3: Pars tensa reaches the level of the promonotory without adhering to it
Grade 4: Pars tensa reaches the promontory and adheres to it

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Appendix 2

Sade classification of parts flaccida retractions[1,5]

Grade 0:	Normal pars flaccida without retraction
Grade 1:	Pars flaccida is slightly retracted but does not touch the neck of the malleus
Grade 2:	Pars flaccida reclines on the neck of the malleus
Grade 3:	Pars flaccida reclines on the neck of malleus, accompanied by partial destruction of the scutum without keratin accumulation
Grade 4:	Major retraction of pars flaccida with keratin accumulated in its fundus and not amenable to cleansing by suction; corresponds to attic cholesteatoma

Pars flaccida (Attic)

The state of the pars flaccida reflecting disease states in the attic (epitympanum) can be often overlooked by the surgeon. There are instances of 'missed' retraction pockets and frank cholesteatomas in this region (Sade and Tos grading of attic retractions, Appendices 2 and 3).[1,3–5] Wax and crusting in the attic may have an underlying cholesteatoma.

Myringotomy and fluid characteristics

Studies of epithelial migration from the tympanic membrane have suggested that grommets placed antero-superiorly remain in place longer than antero-inferiorly.[6] However, this has been refuted by Hern and Jonathan.[7]

Recording whether the tap was wet or dry followed by listing the features of the fluid is important, e.g. thin or thick glue, serous or mucinous fluid, purulent fluid, cholesterol granuloma etc (the TARGET form uses a coding scheme for the type of fluid). Persistent profuse watery otorrhoea in this situation may well be CSF. The amount of fluid may be recorded as scanty, moderate or excessive (+, ++ and +++ respectively).

Middle ear mucosa

Recently, molecular biological techniques have implicated bacteria in the aetiology of OME. *Alloiococcus otitidis* is one organism implicated, the exact role of which has not yet been fully elucidated.[8]

The state of the middle-ear mucosa (MEM), healthy or inflamed is a useful guide to the pathology of the case. The appearance of MEM can be assessed through the myringotomy incision after suction of the fluid especially under high power on the operating microscope. The mucosa can be thick, congested, granular, polypoidal or even fibrotic at the end-stage of otitis media with effusion. The senior author has routinely commented on the MEM in OME cases for nearly 25 years. In some ways, a myringotomy may be considered a 'mini-tympanotomy'.

Appendix 3

Tos classification of pars flaccida retractions[3,4]

Grade 0:	No attic retraction
Grade 1:	Retraction towards neck of malleus, air space visible
Grade 2:	Retraction to the neck of malleus, no air space visible
Grade 3:	Retraction beyond osseous annulus, bottom of retraction visible when head is tilted; may be slight bone resorption
Grade 4:	Distinct bone resorption of osseous annulus, retraction to the head of the malleus
Grade 5:	Attic cholesteatoma

Grommet

The type of grommet used is entered next with details of positioning of the grommet, if considered pertinent. The total duration a ventilation tube remains *in situ* is affected by the design of the tube, the insertion technique and presence of intercurrent infection.[7,9]

TM trauma

Trauma to the pars tensa during myringotomy or grommet insertion causing tear, abrasion, shredding of the epithelium and the degree of bleeding may be recorded. This may be useful information in predicting extrusion rates, incidence of grommet granulomas or the degree of tympanosclerosis post-insertion.[10]

Medication

It would be useful to record if the patient was prescribed a course of topical steroid-antibiotic drops or oral antibiotics and the rationale for the same.[11]

Any other comments

Any significant bleeding should warn the surgeon that the pathology is perhaps more than a simple glue ear, viz. acute suppurative otitis media, a dehiscent high jugular bulb, granulomatous diseases or neoplasms including glomus tumours.

Discussion

In this day and age of evidence-based medicine, clinical audit has gained tremendous importance in comparing existing standards of practice to best 'benchmark' practice. It has been noted in retrospective audit studies, time and again, that patients' case notes and charts lack the required information for data analysis and comparison of standards of practice between centres.

No other pathology has been talked about and attracted as much attention (of the general otolaryngologist and the NHS Executive) as otitis media with effusion (OME). The question, 'to grommet or not to grommet?' is being studied by the TARGET study of the MRC (Medical Research Council). The preliminary results of the study presented recently at the Royal Society of Medicine (Section of Otology deliberations, RSM, May 4, 2000, London) by authorities in the field indicated ventilation tube insertion improves hearing problems in OME, in addition to improved school performance and alleviation of behavioural disorders in children with OME.

There is no contention that there is a need for a consensus dataset in recording findings during tympanostomy tube insertions. The descriptive list above may seem exhaustive, but in actual practice takes only a few minutes to document in the operating theatre. A detailed and comprehensive 'Otomicroscopy and Surgery Coding Form' has been used for the TARGET study in the United Kingdom, the results of which should be available in the near future (G. Browning, personal communication). This system uses coded entry of findings minimizing the need for descriptive terminology. The TARGET coding strategy is detailed and would entail addition of the coding sheet with the appendices to coding. Such a strategy is ideal for prospective studies on glue ear management. We have described a minimum dataset that would be useful for clinical audit and may be readily reproduced in the available operative sheets with simple descriptive terms.

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