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Direct referral hearing aid provision in the over sixties age group

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Abstract

A prospective study was designed in which General Practitioners were issued with a standard referral letter for hearing aid provision. Unknown to the General Practitioner an independent otolaryngologist assessment was obtained at the time of first attendance. Three hundred consecutive patients selected by General Practitioners applying these guidelines were seen in a designated hearing aid clinic staffed by audiological technicians of senior grade or above. Referral pro formata were incomplete in 75 patients who were not assessed. Ninety-four patients (31 per cent) (95 per cent confidence interval 29–36 per cent) were accepted by the audiologist. Obstructing wax was the most common criterion failed. Clinical agreement between audiologist and otolaryngologist was 57 per cent greater than chance. None of the cases of clinical disagreement altered treatment. A direct referral system as proposed could have processed only 31 per cent of 300 referrals. However, experienced technical staff reliably detected otological pathology and with aural toilet facilities 91 per cent of 225 patients (confidence interval 88–94 per cent) were aided.

Introduction

The need for an ENT (Ear, Nose and Throat) specialist evaluation of patients prior to hearing aid provision, as is the practice in the NHS (National Health Service), is a point of contention recently highlighted by the RNID (Royal National Institute for the Deaf) document (1988) and is not a pre-requisite for hearing aid provision in the commercial hearing aid sector.

Studies aimed at evaluating a direct referral system for hearing aid issue in the United Kingdom have been carried out on samples of first G.P. (General Practitioner) referrals for hearing assessment or treatment (Prinsley *et al.*, 1989; Watson and Crowther, 1989).

When the G.P. refers a patient for a hearing aid, in the majority of cases s/he seeks to determine if the patient has a significant hearing impairment and not necessarily to diagnose the cause for this hearing impairment. The NHS system for hearing aid issue as it operates at present does not require the practitioner to be overly concerned with diagnosing the cause of the patient's hearing impairment since once the patient is referred to the hospital the diagnosis will be made by an otolaryngolist and the appropriate treatment arranged. It is in such a setting that previous studies have been done. The findings of Crowther and Watson (1989) and Campbell *et al.* (1989) that the majority of referral letters in their studies did not even mention the appearance of the tympanic membrane supports this.

In order to assess the impact of changing the present system of hearing aid provision within the Health Service, as suggested by the RNID document, the pattern of referral at source would have to change. The current study undertook such an experiment and altered the pattern of hearing aid referral in the South Cleveland area. Through the FPC (Family Practitioner Committee) all G.P.'s were circulated with a plan of the proposals and the new method of hearing aid referral.

Codes of practice for the Hearing Aid Dispenser have been published by the HAC (Hearing Aid Council) (1984) and the TTSA (Technicians, Therapist and Scientist in Audiology) (1988) which outline criteria requiring medical or ENT evaluation before fitting a hearing aid. The criteria used in determining if a patient was suitable for primary hearing aid issue was based on these. In order that all G.P.'s at all times were aware of these criteria when considering a hearing aid referral a pro forma was designed which incorporated the main criteria. These were then distributed to G.P. surgeries. A G.P., once satisfied that the criteria were met, then referred the patient with the findings recorded.

The referred patients were evaluated by the audiological technician and an otolaryngologist independently. The design of this study allows for the first report of a primary hearing aid referral service with full details of the otological findings of G.P.'s who were cognisant that their role was to provide the only medical opinion in determining patients suitability for hearing aid issue.

Patients and methods

G.P.s in the Cleveland area were circulated through the local Family Practitioner Committee with a letter outlining the establishment of a direct referral facility for first hearing aid issue in patients who satisfied certain criteria. In order to facilitate the G.P.'s recognition of the

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FIG. 1

If the following conditions are all met then the patient will be fitted with a hearing aid without seeing an otologist; otherwise they will be placed on the appropriate routine ENT waiting list.

History

The patient is over 60 [ ]
The hearing loss is not of sudden onset or deterioration [ ]
The hearing loss is not of short duration [ ]
The hearing loss does not fluctuate markedly [ ]
There is no severe unilateral or disabling tinnitus [ ]
There is no rotatory vertigo [ ]
There is no otalgia [ ]

Otoscopy

Both ears are free from wax and other obstructions [ ]
There is no external or middle ear infection [ ]
There are no perforations [ ]

Tuning fork tests

The hearing loss is not unilateral (Weber central) [ ]
The air conduction is better than bone conduction (Rinnie +ve) [ ]

Signed:..... Date:.....

patients who satisfied these requirements a pro forma was designed for the G.P.'s use (Fig. 1). The parameters are a composite of the TTSA and HAC criteria for direct hearing aid provision. Due to the large number of incorrectly completed or incomplete forms received a second circular reinforcing instructions was distributed three months after the start of the trial.

All referrals were screened to determine if the forms were adequately completed. Patients with adequately completed referral forms were seen independently by an Audiology Technician and ENT surgeon, who assessed the same parameters as the G.P., the only difference being the use of the pure tone audiometric findings by the Audiology Technician to complete the audiometric part of the form. The ENT surgeon used the same tests as the G.P. to assess the accuracy of the referral. The audiometric findings were, however, used for hearing aid prescription and to assess the need for further medical investigation or treatment. The referring G.P.'s received a letter either accepting their patient for direct referral or stating the reason for refusal.

The degree of concordance was estimated using the McMaster University Department of Clinical Epidemiology and Biostatistics Method (1980).

Results

Of the first 300 referrals received, 75 (25 per cent) were incorrectly completed and thus could not proceed in the direct referral scheme.

Of the remaining 225 referrals the ENT surgeon considered 98 suitable for direct referral and the technician 94 (Table I). There were 22 cases where the technician accepted a patient and the surgeon failed them and 26 where the reverse was true. The agreement was 57 per cent greater than chance. In none of these cases was significant or treatable disease missed or the final outcome altered (all were given a hearing aid and no other treatment).

TABLE I

A TABLE SHOWING THE AGREEMENT BETWEEN SURGEON AND TECHNICIAN

	Surgeon		
	Suitable	Unsuitable	
Technician Suitable	72	22	94
Technician Unsuitable	26	105	131
	98	127	225

Table II shows the frequency with which each criterion was failed as judged by the ENT surgeon. The acceptance rate increased to 121 patients aural toilet.

Ninety-one per cent (95 per cent confidence interval 88–94 per cent) of the 225 analysed referrals were given a hearing aid and no other treatment (except wax removal). The prevalence of pathology requiring further management in this study was nine per cent (95 per cent confidence interval 6–12 per cent), (Table III). Two of the patients with CSOM had cholesteatomas managed by suction clearance using an operating microscope, four had mucosal disease and were treated with antibiotic-steroid ear drops, the tinnitus sufferer was started on antidepressants and given a masker, the vertiginous patient and obscure auditory dysfunction patients were submitted for further investigations. Four patients with a unilateral hearing loss underwent further investigation, a stapedectomy was performed on the otosclerotic; two patients did not wish to have a hearing aid after counselling, and two patients required wax softeners and repeat visits for aural toilet because of impacted wax.

Discussion

This study on the requirements for hearing aid prescription practice in the over sixties age group in the United Kingdom is original in its design. It could be argued that a randomized trial of hearing aid prescription practice is 'the only reliable way to ascertain' which is the best method. Previous studies have made extrapolations of the possible outcome of direct referral systems, but only from within the current secondary referral pathway. The majority of these studies conclude that an ENT referral is essential (Harries *et al.*, 1989; Watson and Crowther, 1989; Bellini *et al.*, 1989). These studies by their design were almost certain to arrive at this conclusion.

The 91 per cent rate of hearing aid fittings with no other treatment beyond wax removal found in this prospective study illustrates that G.P.'s were referring patients who require such treatment accurately, irres-

TABLE II

FREQUENCY WITH WHICH ASSESSED CRITERIA WERE FAILED

Criteria	Frequency
	%
Hearing loss of sudden onset or deterioration	5
Hearing loss of short duration	6
Hearing loss fluctuates markedly	4
Severe unilateral or disabling tinnitus	4
Rotatory vertigo	5
Otalgia	3
Ears obstructed by wax or other obstruction	29
External or middle ear infection	6
Tympanic membrane perforations	7
Unilateral hearing loss	20
Conductive hearing loss	11

A patient may fail multiple criteria

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TABLE III
CONDITIONS REQUIRING ALTERNATIVE MANAGEMENT TO HEARING AID PRESCRIPTION N = 20

Diagnosis	Number
Active CSOM	6
Otosclerosis	1
Tinnitus	1
Vertigo	1
Obscure auditory dysfunction	3
Refused hearing aid	2
Obstructing wax	2
Unilateral sensory	4

pective of their ability to assess the criteria, and is in agreement with previous reports on patients referred for hearing aids (Harries *et al.*, 1989; Watson and Crowther, 1989).

However, we conclude, unlike previous reports, that a direct referral system operated by audiological technical staff can be safe, though reliance must be placed on the technical staff's ability to detect ear disease and not solely the referring G.P.

There are reasons which currently mitigate against the efficiency of such a system. The first is the very high number of ears with occluding wax, despite the short waiting time between referral and clinic assessment. Since technical staff may not remove wax, and ears must be dewaxed both for otoscopy and impressioning for an ear mould, this would preclude a large proportion of patients (29 per cent, 95 per cent confidence interval 23–35 per cent) from any direct referral scheme at present.

The second was the nine per cent incidence of disease requiring alternative management missed by the G.P. The technical staff reliably identified these patients, though it must be pointed out that these were senior staff with a high level of audiological and academic training and at least five years experience in a large teaching department. This is very different to the three month trained 'community dispensers' envisaged by the RNID.

In addition, from the difference between the 31 per cent satisfying the criteria for direct referral and the 91 per cent finally given a hearing aid and no treatment beyond wax removal, it can be seen that the published criteria were overridden in most cases. If one ignores the patients with normal pure tone audiograms and those who already had hearing aids (and had thus already attended an ENT clinic) the only cases not treated with a hearing aid had middle ear pathology. The usefulness of the 'history' and tuning fork criteria are questionable.

Key words: Hearing aid

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