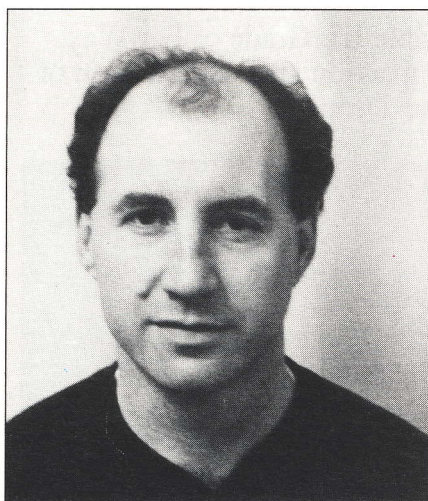


A Study to look at the efficacy of Almond Oil and Cerumol Ear Drops in the removal of ear wax — MJRR Vanlierde, JAM Murray, E Tse



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Curriculum vitae

Martin Vanlierde was born in Berendi in 1954, matriculated at Christian Brothers College in Cape Town and graduated at UCT where he obtained a BA, BSc and MBChB (1980). Martin completed his post graduate training in RSA, and is currently in private specialist practice in British Columbia, Canada. He is enrolled for a Master of Medicine degree with UCT, the thesis based on the use of tracheostomy in the management of laryngotracheobronchitis. His interests are also in head and neck surgery and paediatric otolaryngology.

Summary

To compare the efficacy of almond oil ear drops and Cerumol ear drops in dispensing ear wax without syringing, 40 elderly patients in continuing care with excessive amounts of ear wax which warranted syringing, were given almond oil or Cerumol in a randomised observer-blind fashion. After five days, 13 out of 35 ears (37%) in the Cerumol group had significant reduction in the amount of ear wax thus avoided syringing. Seven out of 34 (21%) in the almond oil group had similar reduction. There is no significant difference in the results between these two groups. Proprietary preparations of ear wax solvents, which are nine to 15 times more expensive than almond or olive oil ear drops, have never been shown in any standardised trial to be conclusively superior than these simple, non-toxic and cheap agents.

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KEYWORDS:

Oils; Ear; Waxes; Drug Evaluation; Syringes

Introduction

Ear wax (cerumen) is a mixture of the secretion of sebaceous and ceruminous glands in the outer third of the external auditory meatus. It has a protective function of trapping dust and foreign particles in the sticky secretion. This secretion dries on the surface of the skin and, with ordinary chewing movement and migration of squamous epithelial cells, is expelled. Occasionally, the wax forms a hard plug and blocks the external meatus, causing discomfort, a degree of deafness, occasionally tinnitus, and dizziness.¹ It is important to be able

to see the tympanic membrane if any pathology is suspected and for insurance or preemployment medical examinations.^{2,3} The common habit of using cotton tipped swabs to remove the wax from the external meatus is to be deplored.^{4,5} This regularly causes the wax to be pushed further into the meatus, thereby making spontaneous expulsion impossible. Curetting the wax plug is possible under optimum conditions, including a good light and an experienced otolaryngologist but, in turn, may cause traumatic bleeding in the ear canal. The most acceptable commonly used method of removing the ear wax is syringing but this, in turn, has its complications of perforation of the tympanic membrane, and otitis externa. Facilitation of ear syringing by the prior use of ear wax solvents is routine practice.¹ The evidence to substantiate the value of this practice is lacking. Traditionally, sodium bicarbonate or almond oil ear drops were used and these agents were cheap and relatively non-toxic. More recently, several proprietary preparations containing organic solvents have been available. There are seven of these preparations listed in the current issue of the British National Formulary.⁶

This study is designed to compare two commonly used ear wax solvents, almond oil and Cerumol in their efficacy to disperse ear wax without the necessity for syringing.

Patients and Methods

The ears of a stable population of geriatric patients in seven continuing care wards, were examined by one doctor. Each patient's ear wax was assessed as shown in Table 1.

Table I. Grading of Wax Amounts

| Wax Amount | Grading |
|--|---------|
| No wax | 0 |
| Scanty wax | 1 |
| Some wax present but not enough to occlude the tympanic membrane | 2 |
| An excessive amount of wax presenting at site of the tympanic membrane | 3 |
| Wax completely occluding the external meatus | 4 |

Each patient was reassessed two days after initial assessment to standardise the findings. Intraobserver variability was negligible due to prior self standardisation.

Patients who had either a Grade 3 or Grade 4 amount of wax in either ear were eligible for the study. In a randomised observer-blind fashion, Cerumol drops were given to one ear and almond oil drops given to the other. Five drops were given twice daily for five days. Some patients with excessive unilateral wax were entered into the trial. The drops in these patients were given in the same blind randomised fashion as above.

Results

One hundred and thirty two patients were initially assessed and 41 were accepted onto the trial. Thirty had bilateral excessive wax, 11 unilateral wax. One patient developed otitis externa in the ear given Cerumol ear

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drops and was withdrawn. Thirty four ears received almond oil and 35 ears were given Cerumol. Pretreatment standardisation confirmed there was no significant difference in the wax findings between the groups (Table II).

After five days in the Cerumol group, 13 out of 35 ears (37%) improved their amount of wax grading from Grade 3 and 4 to Grade 2, thus removing them from the potential ear syringing group. In the almond oil group, seven out of 34 ears (21%) improved to Grade 2. There is no significant difference in the results between these groups (Table III).

The colour or consistency of the wax did not appear to have any bearing

Cotton tipped swabs just push the wax deeper into the meatus making spontaneous expulsion impossible

on diminution of the amount of wax. In seven Cerumol ears and 10 almond oil ears, the wax consistency appeared to be softer.

Table II. Grade of Ear Wax Impaction Before Application of Ear Drops

| | Grade 3 | Grade 4 | Total |
|------------|---------|---------|-------|
| Cerumol | 21 | 14 | 35 |
| Almond Oil | 15 | 19 | 34 |
| Total | 36 | 33 | 69 |

Table III. Grade of Ear Wax Impaction after Application of Ear Drops

| | Significantly Reduced | (No Significant Improvement) | Total |
|------------|-----------------------|------------------------------|-------|
| | Grade 2 | Grade 3 or 4 | |
| Cerumol | 13 | 22 | 35 |
| Almond Oil | 7 | 27 | 34 |
| Total | 20 | 49 | 69 |

$X^2 = 2,304, p < 0,05$, ie no significant difference between the 2 groups

A review of the relevant literature over the last 20 years revealed a paucity of information on this subject. In 1970, Fraser compared the ease of syringing after olive oil, Cerumol, Waxsol, Dioctyl and Xerumenex versus sodium bicarbonate. Cerumol alone was found to be significantly more effective than sodium bicarbonate but not conclusively superior to olive oil and Waxsol.⁷ A multicentre trial in 1982 found Exterol to be superior to Cerumol ($p < 0,001$).⁸

Our study did not confirm that Cerumol was significantly better at avoiding ear syringing than almond oil. It is interesting to note that the cost of sodium bicarbonate ear drops is 2p (10c) per 10 ml, olive oil is 6p (30c) per 10 ml, almond oil is 8p (40c) per 10 ml, Cerumol is 72p (R3,60) per 11 ml, Waxsol is 86p (R4,30) per 10 ml and Exterol, which is ureahydrogen peroxide complex in glycerol, is 214p (R10,70) per 12 ml. In the current economic climate, it would appear that greater attention

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should be placed on the cost-effectiveness of the common practice of the use of wax softeners.

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