



EFFECTIVENESS OF SUCTION CLEARANCE OVER SYRINGING FOR EAR WAX REMOVAL IN PREVENTING OTOMYCOSIS

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ABSTRACT

Background: Ear wax (Cerumen) is a common complaint with which a person presents to the clinic. It can be removed by methods such as suction clearance, syringing.

Aim: The aim of the study was to assess the effectiveness of suction clearance over syringing for removal of ear wax.

Materials and methods: This cross-sectional study was carried out in the ENT department of Saveetha Medical College and Hospital from February 2022 to April 2022. About 60 patients with a diagnosis of bilateral impacted cerumen were included in this study. Suction clearance was done on one side and syringing on the other side. Patients were advised to come for follow up at the end of first week and second week and the outcome of the procedure was studied.

Conclusion: Suction clearance is more effective in preventing Otomycosis than syringing.

Introduction:

Earwax or Cerumen is composed of secretions of sebaceous glands, ceruminous glands, hair, desquamated epithelial debris, keratin, dirt.¹ The secretions of the two glands mixes with the desquamated epithelial cells and keratin shed from the tympanic membrane and deep bony meatus to form wax. As it lubricates the ear canal and retains any foreign objects that enter the canal, it serves a protective purpose. Wax is fungistatic and bacteriostatic and also has an acidic pH.²

Normal wax secretion occurs in little amounts, dries, and then is ejected from the meatus by jaw motions.³ When this mechanism fails it gets deposited as a plug. Other reasons that can cause wax retention include a narrow ear canal, stiff hair, or a canal lesion that is obstructive.

Hearing loss, otalgia, tinnitus, giddiness, fullness, and cough are all signs of ear canal blockage by cerumen. There are several ways to remove wax. They are cerumenolytic agents, irrigation, manual removal. Ear wax can be removed manually using forceps, a probe or suction.⁴

Otomycosis, also known as fungal otitis externa, is a fungus most frequently caused by *Aspergillus niger* or *Candida albicans* that affects the external auditory canal with rare complications affecting the middle ear.⁵ It is more prevalent in hot humid areas of tropical and subtropical countries. It can be a primary fungal infection or secondary to bacterial infection. It causes severe itching, pain, ear blockage, discharge. Predisposing factors consists of ear wax, self-cleaning, use of ear drops.⁵ Treatment includes ear toileting to remove all discharge and epithelial debris which are conducive to the growth of fungus.

Hence this study was conducted to compare the effectiveness of syringing and suction clearance for removal of ear wax in preventing otomycosis.

MATERIAL AND METHODS:

This cross-sectional study was conducted in the outpatient department of ENT of Saveetha Medical College and Hospital. It was conducted from February 2022 to April 2022. The total number of patients included in this study were 60. Patients with perforation of tympanic membrane, age less than 10years, infection of ear canal were excluded from the study. Patients were informed about the details of the procedure, terms of inclusion in study, advantages and side effects of the procedure with the help of a written informed consent. Cerumen diagnosis was done by otoscopic examination.

Patients from 10-60 years of age with bilateral earwax were included. Suction clearance was done in one ear of the patient, syringing was done in the other ear. The variables that were considered in this study were name, age, gender and success at first attempt, pain, tinnitus, vertigo, trauma, bleeding and failure. The data were analysed using SPSS software in which the two groups were compared for the variables for Chi-square test. P value less than 0.05 was considered statistically significant.

SUCTION CLEARANCE:

After guarding the external auditory canal with an appropriate size ear speculum, suction was performed in a sitting position using a standard suction machine under direct view and appropriate size suction nozzles. Ear was inspected on completion of the procedure. Cerumenolytics were prescribed for five days for hard wax. Patients were advised to visit the OPD again if any symptoms developed like ear pain, or discharge.

SYRINGING:

The patient was made to sit and a towel was placed around his neck. A kidney tray was held near the ear by the patient to collect the return fluid. Pinna was pulled upwards and backwards and the stream of water was directed along the posterosuperior meatal wall. Boiled tap water cooled to body temperature was used so as to not cause vertigo. Ear was inspected after each time for any remaining wax. For the hard wax, patients were prescribed cerumenolytics for five days and the procedure was repeated.

RESULTS:

Table-1 displays the analysis of demographic data. According to this table Males are more than the Females.

Table-2 provides a comparison of study variables. With the exception of failure, which is statistically significant ($p=0.009$), there is no statistically significant difference between the two groups for any of the factors.

TABLE-1

AGE	NO	GENDER	NO
10-20	14	MALE	38
21-30	13	FEMALE	22
31-40	16		
41-50	13		
51-60	4		
total	60		

TABLE-2

S.NO	STUDY VARIABLES	SUCTION-RIGHT EAR		SYRINGING-LEFT EAR		CHI-SQUARE TEST		
		No-60		No-60		Person Chi-square Value	Degree of Freedom	p-value
		No	Percentage(%)	No	Percentage(%)			
1	Success at 1st attempt	41	68.3	31	51.6	0.01	1	0.919
2	Pain	13	21.6	16	26.6	3.223	1	0.084
3	Tinnitus	2	3.3	5	8.3	0.188	1	0.552
4	Vertigo	5	8.3	9	15	0.963	1	0.192
5	Trauma	3	5	1	1.6	0.054	1	0.748
6	Bleeding	2	3.3	3	5	8.82	1	0.056
7	Failure	5	8.3	8	13.3	10.28	1	0.009

DISCUSSION:

In basic healthcare, cerumen impaction is frequently observed. During ancient times sea salt, olive oil, frankincense were injected into a suppurating ear as a form of treatment. Though typically thought to be risk-free, removing impacted cerumen does carry some dangers, such as the possibility of perforating the eardrum or rupturing the ear canal, as well as the possibility of unsuccessful removal. Techniques for removing cerumen that are frequently employed include irrigation, hand removal, and cerumenolytics (softening agents for cerumen). But manual removal requires more technical skill compared to other techniques.⁶

In this study, ear wax removal was successful on first attempt in 68.3% in group 1 and 51.6% in group 2. Failure to remove ear wax which was statistically significant ($p=0.009$) was seen in 8.3% in group 1 and 13.3% in group 2. According to another study conducted in Britain, the failure of removal of earwax was 29%, higher to our result. Factors contributing to failure include inadequate usage of cerumenolytics, non-cooperation, and very hard wax plug. Machine related factors include low suction pressure, insufficient illumination in syringing, poorly balanced syringe tip blocking the external auditory canal.⁷

Suction clearance and syringing are accompanied by several risk factors. Tinnitus was reported in 3.3% in suctioning group and 8.3% in syringing group. It may be due to noise produced by irrigation pressure or suction tip. In another study it was observed in 0.46% of the patients. Vertigo was observed in 8.3% in group 1 and 15% in group 2. But in another study vertigo was observed in 4% and 5% respectively which were lower to our results. The cause of vertigo is mainly the caloric effect of cool air after suction and the caloric effect of the water in syringing.⁴

CONCLUSION:

Hence in various aspects we can see that suction clearance is better than syringing. Therefore, suction clearance is more effective than syringing in removal of ear wax in preventing otomycosis.

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