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CSOM: Intra-Operative Findings, A Clinical Study

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ABSTRACT
The middle ear mucosa is essentially mucus-secreting respiratory mucosa bearing cilia on its surface. The extent of the mucociliary epitheium varies in normal middle ears, being more widespread in the young. Three distinct mucociliary pathways can be identified-epitympanic, promontorial and hypotympanic, the latter being the largest. Each of these pathways coalesces at the tympanic orifice of the Eustachian tube. Intra operative findings of middle ear cleft in such patients was noted and compared with the pre-operative HRCT TEMPORAL BONE scan findings. External auditory canal was diseased in 5.6% of patients. Tympanic membrane was perforated in 80.6% of patients. Cholesteatoma (Mesotympanum) was found in 10.6% of patients.

INTRODUCTION

The tympanic cavity contains the ossicles, two muscles, the chorda tympani and the tympanic plexus. The ossicles are the malleus, incus and stapes that form a semi-rigid bony chain for conducting sound[1]. The malleus is the most lateral and is attached to the tympanic membrane, whereas the stapes is attached to the oval window. The middle ear mucosa is essentially mucus-secreting respiratory mucosa bearing cilia on its surface[2]. The extent of the mucociliary epitheium varies in normal middle ears, being more widespread in the young. Three distinct mucociliary pathways can be identified-epitympanic, promontorial and hypotympanic, the latter being the largest[3]. Each of these pathways coalesces at the tympanic orifice of the Eustachian tube. The mucous membrane lines the bony walls of the tympanic cavity, and it extends to cover the ossicles and their supporting ligaments in much the same way as the peritoneum covers the viscera in the abdomen[4,5]. The mucosal folds also cover the tendons of the two middle ear muscles and carry the blood supply to and from the contents of the tympanic cavity. These folds separate the middle ear space into compartments. As a result, the only route for ventilation of the epitympanic space from the mesotympanum is via two small openings between the various mucosal folds-the anterior and posterior isthmus tympani. Likewise prussak's space is found between the pars flaccida and the neck of the malleus, bounded by the lateral malleolar fold. This space can play an important role in the retention of keratin and subsequent development of cholesteatoma[6].

MATERIALS AND METHODS

Source of Data: CSOM patients presenting to hospital which is a tertiary care centre and who are undergoing ear surgery.

Methods of Collection of Data:

- CSOM patients who are planned for surgical management underwent HRCT TEMORAL BONE SCAN before surgery.
- Intra operative findings of middle ear cleft in such patients was noted and compared with the pre-operative HRCT TEMPORAL BONE scan findings.

Design of Study: Cross Sectional Comparative.

Study:
Sample Size: 180 patients.

Inclusion Criteria: CSOM patients above 10 years who are undergoing ear Surgery.

Exclusion Criteria:

- Patients with revision surgery.
- Patients with congenital anomalies of temporal bone.
- Patients with other temporal bone diseases.

RESULTS AND DISCUSSIONS

Table 1: Intra-Operative Findings

Findings	Number	Percentage
External auditory canal		
Normal	170	94.4
Diseased	10	5.6
Tympanic membrane		
Normal	3	1.7
Retracted	31	17.2
Perforated	145	80.6
Absent	1	0.6
Mesotympanum		
Normal	97	53.9
Cholesteatoma	19	10.6
Mucosa thickened	17	9.4
Granulation	47	26.1
Attic		
Normal	115	63.9
Cholesteatoma	37	20.6
Mucosa thickened	15	8.3
Granulation	13	7.2
Malleus		
Intact	130	72.2
Eroded	50	27.8
Incus		
Intact	120	66.7
Eroded	60	33.3
Stapes		
Intact	154	85.6
Eroded	26	14.4
Facial canal		
Intact	175	97.2
Dehiscent	5	2.8
Lateral sac		
Intact	173	96.7
Eroded	6	3.4
Dural plate		
High	99	97.1
Low	3	2.9
Sinus plate		
Normal	94	92.2
Anterior	3	2.9
Both anterior and posterior	1	1.0
Posterior	4	3.9
Sinus tympani		
Normal	168	93.3
Cholesteatoma	7	3.9
Mucosa thickened	2	1.1
Granulation	3	1.7
Facial recess		
Normal	168	93.3
Cholesteatoma	7	3.9
Mucosa thickened	2	1.1
Granulation	3	1.7
Mastoid bone (n=102)		
Normal	9	8.8
Cholesteatoma	33	32.4
Mucosa thickened	8	7.8
Granulation	52	51.0

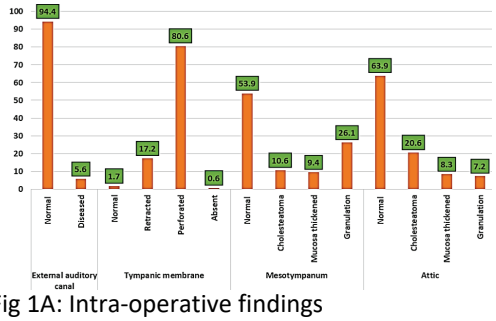

Fig 1A: Intra-operative findings

Fig 1B: Intra-operative findings

Fig 1C: Intra-operative findings

Fig 1D: Intra-operative findings

CONCLUSION

- External auditory canal was diseased in 5.6% of patients.
- Tympanic membrane was perforated in 80.6% of patients.
- Cholesteatoma (Mesotympanum) was found in 10.6% of patients.

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