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Original research article

CSOM: Clinical, radiological diagnosis and intra-operative diagnosis

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Abstract

Tubotympanic disease is characterized by a perforation of the tympanic membrane, which does not heal because of the persistence of infection and if this continues for long enough, the edges of the perforation are covered by the squamous epithelium from the outer surface joining the mucosa of the middle ear so that the perforation is lined by epithelium. CSOM patients who are planned for surgical management underwent HRCT Temporal 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. The external auditory canal abnormalties were accuratively detected by HRCT scan with 100% sensitivity and 9.1% false positivity. Tympanic membrane abnormalities like perforation, retraction absence were identified with 79.3%, 83.9% and 100% sensitivity respectively by th HRCT scan.

Keywords: CSOM, radiological diagnosis, intra-operative diagnosis

Introduction

COM has been divided into two main clinical types. The first variety is virtually always a complication of acute otitis media with a persisting perforation in the tympanic membrane and/or persistent mucosal disease, referred to as tubotympanic disease [1]. The second variety is more aggressive and follows a relentless course of destruction of the middle ear, mastoid antrum referred to as the atticoantral disease [2]. Tubotympanic disease is characterized by a perforation of the tympanic membrane, which does not heal because of the persistence of infection and if this continues for long enough, the edges of the perforation are covered by the squamous epithelium from the outer surface joining the mucosa of the middle ear so that the perforation is lined by epithelium [3]. The perforation is always central, that is, it is surrounded by part of the pars tensa throughout its circumference [4].

Pars tensa is intact with abnormalities like tympanosclerotic patches, thin membrane suggestive of old perforations which has healed without middle fibrous layer [5].

Permanent perforation in pars tensa and middle ear mucosa is inactive.

Inflamed middle ear mucosa sometimes with granulation tissue which can become polypoidal [6].

Retractions in the pars tensa or pars flaccida which has the potential to become active with retained debris.

Retraction in the pars tensa or pars flaccida that has retained squamous epithelial debris and is associated with inflammation and production of pus often from adjacent mucosa.

Methodology

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 Temporal Bone Scan

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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 Discussion

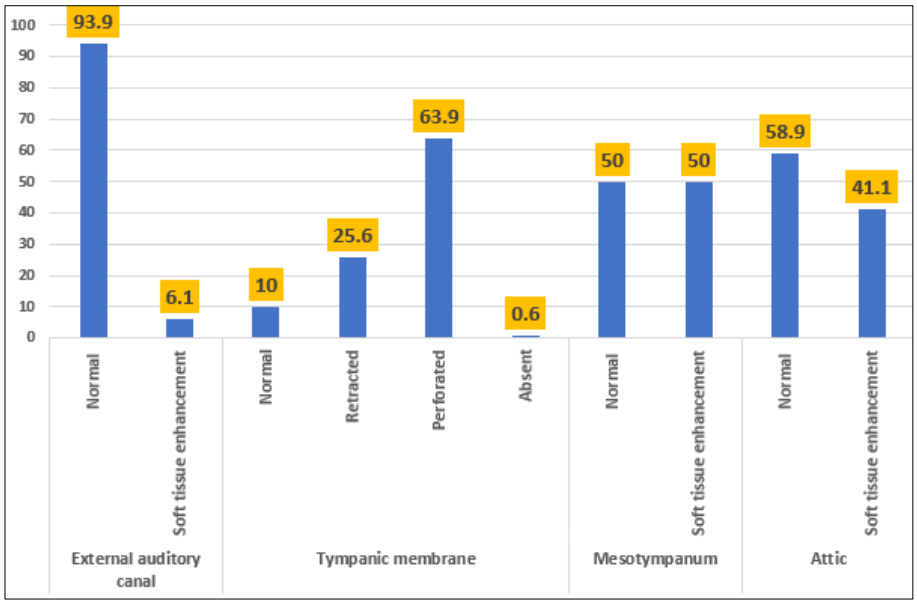

Fig 1: HRCT temporal bone scan findings

Table 1: Clinical, radiological diagnosis and intra-operative diagnosis

Clinical diagnosis	Radiological diagnosis	Intra-operative diagnosis
COM mucosal-120 (66.7%)	COM mucosal-120 (66.7%)	COM mucosal-120 (66.7%)
Adhesive otitis media-1 (0.5%)	COM mucosal-1 (0.5%)	Adhesive otitis media-1 (0.5%)
COM squamosal -59 (32.8%)	COM squamosal -59 (32.8%)	COM squamosal -59 (32.8%)

Conclusion

The external auditory canal abnormalties were accuratively detected by HRCT scan with 100% sensitivity and 9.1% false positivity.

Tympanic membrane abnormalities like perforation, retraction absence were identified with 79.3%, 83.9% and 100% sensitivity respectively by th HRCT scan.

References

1. Blaney SP, Tierney P, Oyarazabal M, *et al*. CT scanning in second look combined approach tympanoplasty. Rev. Laryngol. Otol. Rhinol. (Bord). 2000;121:79-81.
2. Alzoubi FQ, Odat HA, Al-Balas HA, *et al*. The role of preoperative CT scan in patients with chronic otitis media. Eur. Arch Otorhinolaryngology. 2009;266:807-809.
3. Jackler RK, Dillon WP, Schindler RA. Computed tomography in suppurative ear disease: A correlation of surgical and radiographic Findings. Laryngoscope. 1984;94:746-752.
4. O'Reilly BJ, Cheverton I, Wylie C, *et al*. The value of CT scaning in chronic suppurative otitis media. J Laryngol. Otol. 1991;105:990-994.
5. Mafee MF, Levin BC, Applebaum EL, *et al*. Cholesteatoma of middle ear and mastoid. A comparison of the CT scan and operative findings. Otolaryngol. Clin. North Am. 1988;2:265-293.

ISSN:0975 -3583,0976-2833 VOL 15, ISSUE 08, 2024

6. O'Donoghue GM, Bates GJ, Anslow P, *et al*. The predictive value of high resolution computed tomography in chronic suppurative otitis ear disease. Clin. Otolaryngol. 1987;12:89-96.