External Auditory Canal to Mastoid Fistula

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ABSTRACT

Objective: To describe Computed Tomography (CT) findings of 113 patients with external auditory canal (EAC) to mastoid fistula (EF). The purpose was to determine the incidence of EF in patients with EAC to mastoid fistula (EF).

Methods: Seventeen patients were identified from the clinical database at University of Texas Southwestern Medical Center. The retrospective review of patients diagnosed with EAC to mastoid fistula from January 2000 to January 2012. Data collected included demographics, symptoms, tympanometry (CT) scans, audiograms, and operative findings.

Results: Seventeen patients were identified (6 female, 9 males). The average age was 37.2 years, ranging from 11 to 81 years. Eleven patients (65%) were noted to be in the right ear and 5 (29%) on the left. Eighteen (82%) of the patients presented with symptoms of serous otitis media, tympanic membrane perforation, and/or eustachian tube dysfunction. All patients had history of eustachian tube dysfunction. Of those, 15% (3 patients) had history of mastoiditis. The remaining (13%) patients had a history of tympanoscopy. Fifty-nine (59%) had history of surgery in the affected ear. Of those, 87% (13 patients) were noted to have intact tympanic membrane.

Conclusions: The EAC to mastoid fistula is a potential complication of otologic surgery. This entity can sometimes be identified on exam, but CT is highly sensitive in confirming the diagnosis. Most patients require a canal wall down procedure but the canal wall can be reconstructed in select cases. Review, Otolaryngology, Ear, Cholesteatoma.

INTRODUCTION

A cholesteatoma is a cystic lesion lined with keratin producing squamous epithelium that develops most commonly from congenital tympanoskrotoma. Cholesteatoma typically presents with otitis media and hearing loss and has the potential to spread into the inner ear, skull base, tegmen, and the external auditory canal (EAC). The process of bone erosion in the setting of cholesteatoma is not well studied. But patients present with spontaneous osteoclast stimulating and differentiating factors in human bone, cholesteatoma, and otitis media with effusion.

RESULTS

Fifteen (85%) of the patients had tympanoskrotoma. Twelve patients (86%) had type B and two patients (14%) had type C tympanoskrotoma. Six patients (35%) had hearing loss in the affected ear. Fifty-three (50%) of these patients had CT imaging in the operating room. One had one type C patients (4%) were noted to have intact tympanic membranes on exam and ear canal volumes greater than 2 mL. Of these, three patients (60%) had type B tympanoskrotoma and 1 patient (18%) had type C tympanoskrotoma. Of those, 80% (14 patients) had CT scans of which all demonstrated the fistula between the mastoid and EAC. The process of bone erosion in the setting of cholesteatoma is not well studied. But patients present with spontaneous osteoclast stimulating and differentiating factors in human bone, cholesteatoma, and otitis media with effusion. None of these patients required any canal wall down procedure but the canal wall can be reconstructed in select cases. Review, Otolaryngology, Ear, Cholesteatoma.

DISCUSSION

This study demonstrates that EAC to mastoid fistula are more commonly seen as the result of EAC wall down procedure. The canal wall down procedure may result in a canal wall defect due to mastoidectomy or canal wall down, which is noted to be a cause of ear discharge. This entity can sometimes be identified on exam, but CT is highly sensitive in confirming the diagnosis. Most patients require a canal wall down procedure but the canal wall can be reconstructed in select cases. Review, Otolaryngology, Ear, Cholesteatoma.

CONCLUSIONS

Detection of EAC to mastoid fistula requires thorough otoscopy and careful examination of the tympanic membrane. This entity can sometimes be identified on exam, but CT is highly sensitive in confirming the diagnosis. Most patients require a canal wall down procedure but the canal wall can be reconstructed in select cases. Review, Otolaryngology, Ear, Cholesteatoma.