Repair of Horizontal Canal Fistula in a Child with Chronic Recurrent Cholesteatoma

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INTRODUCTION

Labyrinthine fistulas are uncommon potential complications of chronic cholesteatoma sufferers. Prompt recognition and surgical repair are important to limit functional disability.

OBJECTIVE

To discuss the development of a horizontal canal fistula in a patient with stable cholesteatoma

DESIGN

Case Report and Review of the Literature

SETTING

Tertiary Care Pediatric Referral Center

CONCLUSION:
Horizontal Canal Fistula is an uncommon complication of chronic cholesteatoma requiring prompt recognition in order to prevent longterm sequelae.

CASE REVIEW

• 13-year-old female with recurrent left middle ear cholesteatoma underwent initial middle ear exploration in 2011 for classic attic retraction cholesteatoma within a contracted mastoid. Subsequent look procedures revealed residual cholesteatoma. In 2014 she reported discrete, transient dizziness with compression of antihelix.

• Physical Exam: horizontal gaze nystagmus towards the left upon palpation of left antihelical region.

• Imaging: Temporal Bone CT Scan demonstrating post-operative mastoidectomy changes, as well as residual cholesteatoma within mastoid cavity, with dehiscence (arrow) of left horizontal semicircular canal, consistent with diagnosis of horizontal canal fistula (Fig. 1)

• Surgery: underwent revision canal wall down tympanomastoidectomy, with removal of cholesteatoma and closure of a 3mm horizontal canal fistula with cartilage and tissue glue. Postoperatively, all symptoms resolved with no further reported dizziness.

DISCUSSION

• Incidence of cholesteatoma related complications has decreased in the past two decades, with the advent of antibiotics, improved imaging technique, and advances in surgical management.

• The incidence of labyrinthine fistula however, has remained unchanged in the literature. The horizontal semicircular canal is the most commonly affected, with a reported rate of 5.7-10%.

• Vertigo or a positive fistula test are often associated with diagnosis of a labyrinthine fistula, these are only present in less than 50% of patients. More commonly, otorrhea and/or sensorineural hearing loss (SNHL) are seen.

• Familiarity with the anatomy of the mastoid cavity and middle ear space, and their 3D relationship to the cochlea and labyrinthine structures, are essential to the surgeon attempting to eradicate cholesteatoma.

• When cholesteatoma matrix is noted overlying labyrinthine structures, the decision to leave matrix behind to cover or carefully dissect matrix off must be made. When leaving matrix behind, secretion of collagenase continues from the cholesteatoma, which may lead to progressive erosion of the labyrinth.

• In our case, residual cholesteatoma likely contributed to progressive erosion of the horizontal semicircular canal, leading to the patient’s symptomatology.

• Revision tympanomastoidectomy with closure of the fistula using cartilage and tissue glue led to complete resolution of symptoms.

CONCLUSION

• Development of Horizontal Canal Fistula is an uncommon longterm complication of chronic cholesteatoma.

• Prompt recognition and diagnosis is essential in order to institute surgical repair and prevent longterm functional disability.

REFERENCES


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