Epitympanic development and mastoid pneumatization in chronic otitis media

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ABSTRACT

- The causes of middle ear disease could be explained by genetic and environmental theories.
- Degrees of mastoid pneumatization and development of anterior epitympanic space could be important causative factors for developing middle ear disease.
- We investigated several anatomical indexes that represent attic and mastoid air cell systems to find out their relationships with different types of chronic ear media with or without cholesteatoma.

INTRODUCTION

- The causes of middle ear disease could be explained by genetic and environmental theory.
- Degrees of mastoid pneumatization and development of anterior epitympanic space could be important causative factors for developing middle ear disease.

METHODS

- Temporal bone computed tomography (TBCT) were obtained from 55 patients with cholesteatoma, 50 patients with COM without cholesteatoma and 50 normal subjects.
- Height of epitympanic, degree of mastoid pneumatization and degree of attic pneumatization were measured.
- AES was classified into three categories: undevoloped, single cell and multiple cells.
- Cholesteatoma cases were grouped into attic and pars tensa type.

RESULTS

- Anterior epitympanic space height (mm): COM patients = 5.10mm, Cholesteatoma patients = 5.40mm.
- Mastoid pneumatization was higher in cholesteatoma ear.
- We could consider that poor development of anterior epitympanic space was related to pathogenesis of cholesteatoma.

CONCLUSIONS

- In patients with chronic otitis media without cholesteatoma, height of epitympanic and mastoid pneumatization were significantly lower than those of control group. However, height of anterior epitympanic space was more poor than that of control group.
- There were significant difference in development of anterior epitympanic space between contralateral ear of cholesteatoma patients and control group.
- We could suggest that genetic factor might be more important factor for developing middle ear disease rather than environmental factors.
- Between cholesteatoma and COM, height of epitympanic is lower in cholesteatoma ear. On the other hand, degree of mastoid pneumatization was higher in cholesteatoma ear.
- We could consider that poor development of anterior epitympanic space might play more important role than degree of mastoid pneumatization.