Hearing impairment in 385 middle ear cholesteatomas

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INTRODUCTION

Acquired middle ear cholesteatoma is a gradually expanding destructive epithelial lesion of the temporal bone, which results in a progressive erosion of adjacent bony structures (Louw, 2010).

Although the auditory function is a preoccupation for both patient and surgeons, the way that the cholesteatoma affects the hearing and its consequences are still poorly understood.

The magnitude of the hearing impairment, the most affect audiometric frequencies and the repercussion in the pure tone average are some of the unknown topics that could help us to better understand the cholesteatoma pathogenesis. Recent studies compare surgical treatments between children and adults without concern about the distinct cholesteatoma pathogenesis and then clinical and audiological differences that can occur according to the patients age.

OBJECTIVES

1. Analyze the hearing loss in ears with cholesteatoma.
2. Verify differences between children and adults.

MATERIAL AND METHODS

This is a cross sectional study involving 385 consecutive ears with middle ear cholesteatoma and no previous surgery submitted to pure tone audiometry between August 2000 and January 2013. The air and bone conduction thresholds and the air-bone gaps were compared, both by the pure tone average and by each frequency separately. The statistical analyzes was performed using student t test.

RESULTS

The mean age was 31.5 ± 18.1 years old, 53.4 % were men and 65.3 % adults. The air and bone conduction pure tone average thresholds media were 43.2 ± 18.7 dB and 14.3 ± 12.8 dB, respectively. The air-bone gap pure tone average was 28.9 ± 13.8 dB. Profound hearing loss was found in only 3.4% (8 adults and 4 children). The air and bone conduction thresholds were significantly greater in the adult group in all frequencies (P<0.001). When we compared the air-bone gaps between the two groups, however, children had greater values in 500Hz (P=0.05). There were no other differences between the groups in the further frequencies.

CONCLUSIONS

Middle ear cholesteatoma is associated with significant hearing impairment although profound hearing loss is rare. Adults have greater thresholds in air and bone conduction than children. The air bone gaps are similar between the groups but can be greater in children.

REFERENCES