Trans-Canal Endoscopic Ear Surgery for Pediatric Congenital Cholesteatoma

Wan-Hsuan Sun MD. Tzu-Chin Huang MD. MSc.
Dept. of Otolaryngology, Cathay General Hospital, Taipei, Taiwan

Introduction
The cause of congenital cholesteatoma remains controversial. The theory of retained epithelial cell seems most favored and supported empirically. Compare to cholesteatoma in adult, pediatric congenital cholesteatoma is relatively aggressive with rapid growing and high recurrent rate. Good Eustachian tube function and mastoid pneumatization can provide better ventilation and prevent the recurrence of cholesteatoma. Therefore, mastoid cavity preservation is crucial during the operation of cholesteatoma removal. Besides, with high recurrent rate, radical disease clearance is important [1]. Transcanal Endoscopic Ear Surgery (TEES) has become one of the most influential methods to deal with cholesteatoma. The goal of this study is to discuss the feasibility of transcanal endoscopic management of congenital cholesteatoma in pediatric patients.

Methods and Materials
Two children with diagnosis of congenital cholesteatoma in 2015 underwent transcanal endoscopic tympanotomy and extended atticotomy to completely remove the cholesteatoma. Ossiculoplasty with artificial prosthesis was performed simultaneously during the surgery to rebuild the decayed ossicle chain. The tympanic cavity was reconstructed with tragus cartilage and perichondrium. (The procedures that TEES dealing with congenital cholesteatoma were present as Figure 1-10.)

Results
There were no post-operative complications in both cases. Both patients had excellent clinical appearance and significant hearing improvement during the follow-up period. Post-operative HRCT was performed 6 months after the surgery and second look surgery was done one year after the surgery. No residual or recurrent cholesteatoma were noted in both cases, and the TORP were in the right place. With TEES, the only surgical wound in the inner surface of tragus was almost invisible. Figure 11-14.

Discussion
The TEES is particularly valuable in dealing with children’s disease. The children may have smaller ear canals than adults. TEES can provide a closer surgical view as well as a satisfying operating space without a large retro-aural wound and wide-ranged mastoidectomy [5]. The smaller surgical wound can also diminish the recovery time after surgery and has fewer physical and psychological burdens on patients, especially for the children. Most of the healthy structure and mastoid air cells can be preserved as well as their functions like mucosal gas exchange and mastoid buffer, which is all crucial for the restoration of middle ear and the reducing the post-operative morbidity [1][4]. Nevertheless, the TEES can offer a wider “around the corner” vision of middle ear and is helpful in eradicating the lesions in facal recess and sinus tympanum [1][2]. According to the study of Adrian et al., compared to microscopic middle ear surgery, endoscopic dissection can relatively reduce the risk of residual disease in middle ear include mesotympanum and retrotympanum [8].

Conclusions
These two cases imply that TEES could be a good alternative to traditional microscopic ear surgery in the management of pediatric congenital cholesteatoma. It can achieve a satisfying outcome with less physical and psychologic burden on children. Of course, more case analyses are still required to enforce the benefits of TEES.

Contact
Wan-Hsuan Sun MD
Dept. of Otolaryngology, Cathay General Hospital, Taipei, Taiwan
Email: steve88085@gmail.com
Website: https://www.cgh.org.tw/
Phone: +886-9-2633-8563

References