miR-21 mimics, as compared with cells transfected miR-21 inhibitor or control miRNA. The migrated cholesteatoma keratinocytes transfected miR-21 mimics was higher, as compared with the migrated cells transfected miR-21 inhibitor or control miRNA.

Conclusions: The present study showed that miR-21 promotes proliferation and invision of cholesteatoma keratinocytes. The results give a partial explanation for the more aggressive clinical behavior abserved in choleateatoma.

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The selection of surgical technique for middle ear cholesteatoma in pediatric patients

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Learning Objectives:

Method: A retrospective analysis of all cases of pediatric primary acquired cholesteatoma aged 6–14 years old between May, 2005 and August, 2009 was conducted. 86 patients(89 ears) were treated and followed from 1 to 7 years[the average is (3.8 ± 2.5) years].

Result: During the follow-up, intact canal wall mastoidectomy with tympanoplasty(ICW) was the primary surgical treatment in 38 patients(38 ears) initially, the recidivism rate was 18%(7/38), 48 patients(51 ears) underwent canal wall down mastoidectomy with tympanoplasty(CWD), the recidivism rate was 6%(3/51), the achieved rate of PTA was 68%(35/51).

Conclusion: ICW had the advantage which could preserve the physical structure of external auditory canal, however, the cholesteatomas in pediatric patients are more wide spread and erosive. The surgery should completely remove the diseased tissues and then preserve the hearing. Surgical techniques should be depending on the lesions extension, generally the tympanoplasty with open technique was more suitable.

Objective: To discuss the best strategy in surgical treatment for middle ear cholesteatoma in pediatric patients.

Method: A retrospective analysis of all cases of pediatric primary acquired cholesteatoma aged 6–14 years old between May, 2005 and August, 2009 was conducted. 86 patients(89 ears) were treated and followed from 1 to 7 years[the average is (3.8 ± 2.5) years].

Result: During the follow-up, intact canal wall mastoidectomy with tympanoplasty(ICW) was the primary surgical treatment in 38 patients(38 ears) initially, the recidivism rate was 18%(7/38), 48 patients(51 ears) underwent canal wall down mastoidectomy with tympanoplasty(CWD), the recidivism rate was 6%(3/51), the achieved rate of PTA was 68%(35/51).

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MicroRNA-17 Control Osteoclasts Through RANKL Targeting in cholesteatoma

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Learning Objectives:

Objective: Cholesteatoma is characterized by a extraordinary extensive bone destruction in the middle ear and mastoid cavities. MicroRNAs (miRNAs) are posttranscriptional regulators of gene expression. The goal of this study was to investigate the posttranscriptional regulatory effects controlling bone destruction in cholesteatoma. Specifically, the potential role of microRNA-17 is to control osteoclasts through RANKL targeting in cholesteatoma.

Methods: Cholesteatoma, taking from patients at the time of surgery, were processed for RNA and protein extraction. Specimens of cholesteatoma and normal post-auricular auditory skin served as the control. Real-time reverse-transcription polymerase chain reaction was used to assess the expression levels of microRNA-17. Also, western blot analyses were used to assess microRNA-17's downstream target protein.

Results: MicroRNA-17 showed an down-regulation in cholesteatomas compared to normal skin. MicroRNA-17 showed 2.75 fold higher in expression in skins as compared to cholesteatomas ($P = 0.019$). The downstream target of miRNA-17, RANKL protein, was found to greatly increase in cholesteatomas.

Conclusions: This study specifically identified the down-regulation of miRNA-17 concurrent with the up-regulation of the receptor activator of NF-[Kappa]B ligand (RANKL), which activates osteoclasts and plays a significant role in the mechanism of bone destruction in cholesteatoma.

The results give a partial explanation for the more extensive bone destruction in the middle ear and mastoid cavities which has been observed in cholestatoma.