Mastoid obliteration with S53P4 bioactive glass in surgery for paediatric cholesteatoma

D.R. Colnot, P.A. Borggreven, R. van de Langenberg, J.J. Quak

Conclusions
We conclude that S53P4 bioactive glass is effective as obliteration material in surgery for paediatric cholesteatoma.

Objectives
To investigate the efficacy of mastoid obliteration using S53P4 bioactive glass granules in surgery for paediatric cholesteatoma. Clinical outcome was determined as the incidence of cholesteatoma recurrence during follow-up.

Methods
Retrospective follow-up study in children < 17 years. The mean age was 11 years, range 5-17 years. A total number of 42 patients (48 ears) was treated for primary (n=30 ears) or recurrent cholesteatoma (n=18 ears). Patients underwent tympanomastoidectomy with obliteration of the mastoid with S53P4 bioactive glass granules in the period 2012-2017. Both canal wall up (n=20 ears) and canal wall down (n=28) procedures were performed. Outcome was monitored with diffusion-weighted MRI and clinical otoscopy.

Results
No adverse events were observed after S53P4 bioactive glass obliteration. During a mean follow-up period of 18 months recurrent cholesteatoma was observed in 7 patients (14.5%). No residual or recurrent cholesteatoma was encountered in the obliterated mastoid.

- Obliteration of the mastoid reduces the incidence of recurrent cholesteatoma.