Postoperative closure rate of minimally invasive myringoplasty
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Abstract
We evaluated the outcome of 133 ears with a perforation of tympanic membrane (TM) treated by minimally invasive myringoplasty. The postoperative closure rate was 88% at 6 months and 77% at 12 months after surgery, which was slightly lower than the results previously reported.

Methods and Materials
We evaluated 133 ears with perforation of TM treated by minimally invasive myringoplasty.

Introduction
A minimally invasive myringoplasty through the external auditory canal by the under-lay method is commonly performed in Japan. This study investigated the relationship between the perforation size of the TM and the postoperative closure rate or hearing result after minimally invasive myringoplasty.

Results
1. The overall postoperative closure rate was 88% at 6 months and 77% at 12 months after surgery, which was slightly lower than the results previously reported.

2. There were no significant differences in the closure rate based on perforation size of tympanic membrane (Kruskal-Wallis test).

3. Postoperative hearing improvements (Air-bone gap was reduced to 15dB or less) were achieved in 124 ears (93.3%).

4. In 31 cases showing recurrent perforation, pin hole’s size was in 14 ears, comprised 50% or less of the preoperative size was in 10 ears, and comprised more than 50% in 7 ears.

Conclusions
1. The closure rate 12 months after surgery was 77%, which was slightly lower than the short-term results previously reported.

2. There were no significant diagnosis or size related differences in the rate of closure. In this study, we considered that this method may be indicated for patients with large perforation.

3. The results of hearing examinations were good regardless of the diagnosis, which was consistent with the results of previous studies.

4. In the patients with recurrent perforation, pin hole-like perforation, which is not clinically significant, was frequent. There was no enlargement of the perforation size or reduction of hearing level in any patient in comparison to the preoperative state.