INTRODUCTION

A modified radical mastoidectomy (MRM) aims to produce a safe and dry ear, while eradicating disease. However, the large mastoid bowl implies slower healing, need for water precautions, and difficulty with conventional hearing aid usage.

Numerous techniques are employed to avoid what is known as ‘a problem cavity’. The utilization of mastoid reduction techniques using vascularized soft tissue flaps composed of muscle and periosteum not only reduces dead space, but promotes epithelization, proving to be invaluable instrument in improving outcomes. When combined with a well-designed meatoplasty, this controlled cavity can be easily surveyed and cleaned.

The aim of this poster is to describe the surgical techniques and evaluate the outcomes of patients who underwent mastoid reduction by means of a superiorly-based middle temporal artery (MTA) and inferior-based musculoperiosteal (IMP) flap, in combination with our technique of a ‘corner-tag’ meatoplasty.

METHODS

Retrospective review of 24 consecutive patients who underwent mastoid reduction and meatoplasty at our institution from 2010 to 2012 was performed.

The primary end-point measure of the study was the assessment of the low-maintenance mastoid cavity as described on a semi-quantitative scale developed by Merchant et al.² (Table 1) The summary grade is defined as the worst score obtained at any point during the entire follow-up. Grades 0–2 are considered adequate control of infection, whereas grade 3 indicates failure of control of infection.³

Table 1. Grading system to assess control of infection after surgery.

<table>
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<tr>
<th>Grade</th>
<th>Description</th>
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<tbody>
<tr>
<td>0</td>
<td>No episode of otitis, and no pus or granulation tissue on otoscopy</td>
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<tr>
<td>1</td>
<td>One episode of otitis of &lt; 2 wk duration in a 3-mo period or no otitis but a subjective feeling of wetness in the ear</td>
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<tr>
<td>2</td>
<td>More than one episode of otitis in a 3-mo period, or an episode of otitis lasting &gt; 2 wk, or demonstration of localized granulation tissue that was promptly cured with antibiotic drops, dry nose drops, or salbutamol therapy</td>
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<tr>
<td>3</td>
<td>Constant purulent otitis on a daily basis, or examination showing extensive granulation tissue, or need for revision procedure to control infection</td>
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RESULTS

24 patients were identified over 3 years. There were 13 males and 11 females with a mean age of 42.6 years (range 17-76) were included. All except three cases were primary ear cases. None had previous reduction procedures done. 19 cases were MRM, three were revision mastoidectomies, and two were canalplasties. A well-epithelized, dry mastoid cavity was achieved in 12 patients by 1-month post surgery, with another nine patients achieving this by 3 months. 23 cases (96%) resulted in cavities with adequate control of infection based on Merchant’s summary grade. The cavities took an average of 1.75 months to epithelize. Three patients had recurrent tympanic membrane perforation with one requiring revision surgery. Our technique of meatoplasty allowed excellent visualization of the mastoid bowl affording bimanual instrumentation in the clinic setting.

Conclusion

The middle temporal artery and inferior musculoperiosteal flap in combination with the ‘Corner-Tag’ meatoplasty is an effective technique in reducing the mastoid cavity, aids epithelization, and allows good surveillance post-operatively.

REFERENCES