Cochlear Implant Surgery in the Chronic Draining Ear
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Abstract

Three patients are presented who underwent cochlear implantation in the presence of chronic suppurative otitis media (CSOM). All three patients presented with active disease. One had a draining perforation, and two had cholesteatoma. All patients had a staged procedure. The initial surgery was a canal wall down (CWD) mastoidectomy, oversewing of the external ear canal, obliteration of the Eustachian tube, and partial obliteration of the mastoid cavity with a musculoperiosteal Palva flap. The second stage was performed 3 months later to confirm that the middle ear cleft was healthy and insert the cochlear implant. There were no postoperative complications and all patients are performing well in respect to their implants. Successful cochlear implantation can be achieved in patients with active chronic ear disease when a staged approach is utilized that eradicates chronic ear disease with the primary surgery.

Introduction

Cochlear implantation has been proven to be a reliable aural rehabilitation treatment option for bilaterally, profoundly deaf patients. Most patients evaluated for cochlear implant have a normal, disease free middle ear. Individuals with this common presentation are implanted with a single staged operation. Profound deafness can be caused by chronic suppurative otitis media (CSOM). These patients present the otolaryngologist with a more complex treatment dilemma, the opportunity for postoperative complications and device failure. It was previously thought that cochlear implantation was contraindicated in an ear with CSOM and/or cholesteatoma. Feared complications include recurrence of middle ear/mastoid disease, device extrusion, and intracranial complications (i.e. meningitis). Despite the assumed risks with implanting patients with chronic ear disease, cochlear implants have been successfully placed in this population. The success of this procedure is dependent on the establishment of a disease free ear.

<table>
<thead>
<tr>
<th>Patient</th>
<th>Age</th>
<th>CSOM</th>
<th>Surgery</th>
<th>Complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>68</td>
<td>TM perforation</td>
<td>Staged*</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>78</td>
<td>Cholesteatoma</td>
<td>Staged*</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>85</td>
<td>Cholesteatoma</td>
<td>Staged*</td>
<td>None</td>
</tr>
</tbody>
</table>

*1st stage - CWD mastoidectomy and oversewn EAC, 2nd stage - cochlear implant

Results/Conclusion

There were no postoperative complications with any of the three patients. They are all successful users of their implants. All patients are still seen for routine follow up and treatment of contralateral ear disease. A staged procedure for cochlear implantation in the setting of CSOM and cholesteatoma is a safe and successful treatment plan for patients with bilateral profound SNHL.

Methods and Materials

Between November 1988 and July 2008 164 patients received cochlear implants at Loyola University Medical Center under the care of the senior authors. Three of these patients were found to have CSOM as the cause of their profound hearing loss. The choice to implant a diseased ear was due to the presence of bilateral disease or the presence of some contralateral aidable hearing. The patient’s ages ranged from 68-85. Preoperative CT scans were obtained to review extent of middle ear disease and to assess cochlear patency. All patients underwent a canal wall down mastoidectomy, oversewing of the external ear canal, obliteration of the Eustachian tube, and partial obliteration of the mastoid cavity with a musculoperiosteal Palva flap. The second stage was performed 3 months later to confirm that the middle ear cleft was healthy and insert the cochlear implant.

References