Video Report

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An Improved Technique of Subtotal Cochleoectomy for Removal of Intracochlear Schwannoma and Single-stage Cochlear Implantation

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Cochlear implantation in patients with intracochlear schwannomas has been reported anecdotally in case reports or small case series (1–5). The applied techniques have varied considerably ranging from extended cochleostomy (2–4), ''push-through'' and ''pull-through'' techniques (3, 4), partial and subtotal cochleoectomy (4) to cochlear implant insertion through the tumor (5). We here illustrate (see Video, Supplemental Digital Content 1, http://links.lww.com/MAO/A999) our improved surgical technique of subtotal cochleoectomy for tumor removal, cochlear implantation, and cochlear defect reconstruction with a ''cartilage-in-perichondrium-bed'' technique. The perimodiolar electrode array was closely placed around the preserved modiolus of the basal and second turn. It was stabilized and the electrodes were further approximated to the spiral ganglion cells in Rosenthal's canal with cartilage chips peripheral to the array. Despite substantial trauma to the cochlear capsule, surprisingly good results with respect to hearing rehabilitation were observed (word recognition score for monosyllables: 75% at 65 dB SPL, 18 mo after surgery). This good outcome is in accordance with recent case series on cochlear implantation after intracochlear tumor removal (6,7).

Key Words: Acoustic neuroma—Cochlear implant—Intracochlear—Intralabyrinthine—Vestibular schwannoma.

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