INTRODUCTION

Update on the treatment of acoustic tumors

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THIS issue of *Neurosurgical Focus* is dedicated to the evaluation and management of vestibular schwannomas (VSs). Perhaps there is no greater or longer-standing controversy in all of neurosurgery than how to evaluate and treat these lesions. Almost a century ago, the mortality rate from surgical treatment of VSs was higher than 70% at most prominent centers throughout Europe. Harvey Cushing deserves credit for advocating for an approach involving a wide bilateral posterior fossa decompression and subtotal “intracapsular” resection of the VS, which reduced the mortality rate to approximately 20%. This heralded an era in which having a VS was no longer a fatal diagnosis and patients could survive surgery and resume a reasonable quality of life after treatment. However, just a decade later, Cushing’s most prominent pupil, Walter Dandy, proposed a unilateral approach and complete VS resection (and the necessary sacrifice of the facial and vestibulocochlear nerves). During the mid-20th century, many advances remarkably improved the outcomes of VS treatment, including improvements in neuroanesthesia, the introduction of the operating microscope (and subsequent improvements in mechanics, lighting sources, and optics), and cranial nerve monitoring, to name just a few. Also, it became common that a team consisting of a neurosurgeon and neuro-otologist worked in tandem, bringing together unique areas of expertise to improve intraoperative and postoperative patient care.

As is so often the case in medicine, some of the original controversies from almost 100 years ago still surface today. This issue of *Neurosurgical Focus* offers a wide variety of interesting articles that provide insight into current surgical techniques, controversies, and new technological advancements. Hoshida et al. provide an impressive series of 45 patients with moderately large tumors (> 3.0 cm) surgically treated through a “key-hole” or tailored approach. The outcomes were outstanding; 84% of patients had good VII nerve function at last follow-up; and useful hearing was saved in 3 (37.5%) of 8 patients who had hearing preoperatively. The authors from the University of Wisconsin

also demonstrate equally good outcomes in their group of patients when the results obtained in 33 cystic VSs were compared with those acquired in a group with solid VSs. Whether or not cystic VSs are more difficult to remove has been extensively debated over the past several decades, as these authors discuss. In their time, Cushing and Dandy sparred in the literature and by personal communication about the advisability of complete versus subtotal removal of VSs. Starnoni et al. provide a nice review of the literature to date on the technique of subtotal resection and stereotactic irradiation of large VSs performed in an attempt to maintain excellent cranial nerve function. Reviewing 9 studies encompassing 248 patients, good facial nerve function (House-Brackmann grade I–II) was achieved in 96.1% of cases and serviceable hearing was preserved in an incredible 59.9%! Advances in technology to aid surgical resection include the handheld CO₂ lasers and the use of the angled endoscope to view the very fundus of the internal auditory canal (below the transverse crest) during a middle fossa approach. These advancements can carry over into the management of complications as Lucke-Wold et al. describe in their submission regarding a minimally invasive way to repair refractory lateral skull base CSF leaks. Finally, the authors from Curitiba, Paraná, Brazil, dos Santos Neto and colleagues provide an intriguing discussion of hearing rehabilitation in VS patients who have undergone cochlear implantation (CI). There is a lot of evidence that CI can effectively suppress tinnitus, which can indeed be very disabling to some patients. Whether or not insurance companies will agree to cover CI for unilateral deafness remains to be seen.

We hope you enjoy this issue of *Neurosurgical Focus* and find the articles informative and thought provoking.

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Disclosures

The authors report no conflict of interest.