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Vestibular Schwannomas

TO THE EDITOR: In their article (April 8 issue),[1] Carlson and Link state that because of surgical risks — in particular, risks to the facial nerve — the practice of intentionally leaving a tumor remnant has gained popularity. Such an approach is usually considered in the case of large vestibular schwannomas but not for small or medium-sized tumors, for which radiosurgery is the treatment of choice (supported by level II evidence),[2] since it offers a high degree of facial and cochlear functional preservation.[3] For large vestibular schwannomas, a "nerve-centered approach" with planned intracapsular resection offers equivalent functional outcomes[4] but may expose patients to further remnant growth. For this reason, we suggest a combined approach, including postoperative radiosurgery aimed at attaining better oncologic control.[5] However, tumor remnants render planning for radiosurgery difficult, as a result of complex shapes, variability in residual volume, and difficulties in delineating the target volume. To date, we have had high rates of tumor control with our approach, albeit slightly lower than those obtained with up-front radiosurgery for small and medium-sized vestibular schwannomas. The major advantage of this middle ground we advocate is preservation of facial and cochlear function for patients with large vestibular schwannomas that is equivalent to that achieved with up-front radiosurgery in patients with small or medium-sized schwannomas.

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No potential conflict of interest relevant to this letter was reported.

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TO THE EDITOR: Just as the treatment paradigm for intracranial aneurysms moved from the exclusive use of microsurgical clipping to a preference for endovascular embolization in the early 2000s,[1] the methods of treatment for vestibular schwannomas evolved during the same period.[2] Currently, most vestibular schwannomas are discovered early, when their maximal diameter is less than 3.0 cm.[3] Thus, such lesions are eligible for gamma-knife radiosurgery, which aims to stabilize or reduce the size of the tumor.

The few neurosurgical indications that remain include a tumor with a diameter greater than 3.0 cm (usually Koos grade IV, indicating a large tumor with compression of the brain stem and deformation of the fourth ventricle), the presence of edema of the pons and the middle cerebellar peduncle, and disabling neurologic symptoms, as well as a patient's wish to get rid of the tumor.[4] Nevertheless, there now is no place for the technical challenge of complete tumor excision, because the goal is to release the pressure over the brain stem and to preserve facial nerve function in order to achieve the best functional outcome possible. Dynamic retraction of the cerebellum and the decision to leave a tumor remnant in the porus acusticus are part

of such function-sparing surgery, which can be followed by radiosurgery if necessary.

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No potential conflict of interest relevant to this letter was reported.

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TO THE EDITOR: With regard to the article by Carlson and Link, we would note that the distinction between the different radiation therapy approaches is essential for a better understanding of therapeutic results and especially of long-term toxic effects up to 10 years after treatment. Stereotactic radiosurgery, which delivers a high single dose of radiation, achieves a very good rate of local control, but the hearing preservation rates of 50 to 70% at 3 to 5 years reported by the authors decrease to approximately 25 to 50% at 10 years, even with a single dose of 12 to 13 Gy.[1-3] The authors did not report the safety and efficacy of fractionated stereotactic radiotherapy, which has been found to provide local tumor control in 96% of patients at 5 and 10 years and to preserve hearing in 78% of patients at 5 years.[4] Fractionated proton-beam therapy is another technique not mentioned by the authors, despite the fact that it provides local tumor control in 95% and 94% of patients at 2 and 5 years, respectively, and has very minimal toxicity.[5]

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THE AUTHORS REPLY: In response to the somewhat similar opinions presented by Tuleasca and colleagues and by Beucler, who highlight the strategy of planned subtotal resection followed by radiosurgery to treat large vestibular schwannomas, we agree that this strategy leads to improved facial nerve outcomes at least in the short term.[1] However, in contrast to what these authors have proposed, we generally do not advocate for planned subtotal resection. Instead, we enter each operation with the intent of complete removal, but we will halt resection when and if the perceived risk of facial nerve injury is high on the basis of intraoperative impression.[2]

Several observations influence this approach. First, the amount of residual tumor is often difficult to estimate when tumor resection is limited to intracapsular debulking, and an unanticipated large volume may be left. Second, in some large tumors, the facial nerve plane can be favorable, and planned subtotal resection may deprive some patients of a cure that might have been achieved with only a single method of treatment while preserving facial function. Third, if patients are not cured by planned subtotal resection followed by radiosurgery, additional salvage therapy is even more challenging, and the outcomes poorer.[1-3] Lastly, this strategy subjects patients to the risk and cost of at least two treatments — microsurgery and radiosurgery. In their letters, the authors also allude to radiosurgery as being the treatment of choice for small and medium-sized tumors. However, it should be

emphasized that the available evidence does not consistently support one treatment as superior to another.[4,5] Moreover, on the basis of current practice trends within North America and several European countries, the wait-and-scan approach is the most commonly recommended initial management for tumors that are less than 1.5 cm in posterior fossa diameter.[4]

Lalya and Essadi review the potential advantages of fractionated stereotactic radiotherapy and proton-beam therapy over single-fraction radiosurgery with regard to tumor control and hearing preservation. However, there is no consistent evidence supporting this assertion for tumors under 3.0 cm in diameter, and for context, both of these methods are used by a relatively small number of centers to treat vestibular schwannomas, thereby further limiting the available data.[4,5]

As revealed by the number of divergent opinions in the literature and within these letters, the management of vestibular schwannomas is a subject of controversy, underscoring the need for better evidence to guide decision making while also highlighting the value in obtaining more than one opinion regarding treatment from centers that have ample experience with all management strategies.

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Since publication of their article, the authors report no further potential conflict of interest.

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Atrial Fibrillation

TO THE EDITOR: In their review of atrial fibrillation management, Michaud and Stevenson (Jan. 28 issue)[1] indicate that rate control in patients with atrial fibrillation is generally initiated with a beta-blocker, with dose adjustment to reduce the heart rate. In evaluating beta-blocker therapy, it seems relevant to consider that most controlled trials have shown an increase in exercise tolerance with the use of digoxin and a nondihydropyridine (non-DHP) calcium-channel blocker in contrast to a decrease in such tolerance with beta-blocker use in three of nine trials, despite a greater reduction in heart rate.[2,3] In a randomized, controlled study comparing digoxin with the beta-blocker bisoprolol in patients with persistent atrial fibrillation, patients who received digoxin had a reduction in heart rate that was similar to that in the bisoprolol group and had significantly better physical functioning and treatment satisfaction, as well as significantly greater improvement in New York Heart Association functional class. Patients in the bisoprolol group had three times the number of treatment-related adverse events as those in the digoxin group.[4] It seems reasonable to consider digoxin and rate-slowing calcium-channel blockers as at least equivalent, if not preferable, to beta-blockers in most patients with atrial fibrillation who have preserved left ventricular function and an indication for a reduction in the ventricular rate.

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