

## In Reply: Position of Retrosigmoid Craniotomy in Hearing Preservation Surgery for Vestibular Schwannoma

To the Editor:

We read with great interest the comment by Roser et al<sup>1</sup> on our article “Position of Retrosigmoid Craniotomy in Hearing Preservation Surgery for Vestibular Schwannoma,”<sup>2</sup> and we thank the authors for their interest.

From our neuro-otology perspective, the skull base bone represents the way through which surgical corridors are developed, rather than an anatomic barrier. In view of this, several variables, including drilling direction and patient’s position (eg, semisitting, horizontal, lateral, or prone), may result in different surgical corridors and angles of view.

Regarding the application of the concepts discussed in our work<sup>2</sup> into the real-world scenario, we would like to remark that they apply to the specific setting of a retrosigmoid approach with retrolabyrinthine meatotomy. In our center, this technique has been applied in around 20% of vestibular schwannoma surgery cases, accounting the remainder (approximately 2200 cases) mostly for translabyrinthine approaches and—more rarely—middle cranial fossa or conventional retrosigmoid craniotomies.

In the specific setting of a retrosigmoid approach, requiring retrolabyrinthine meatotomy,<sup>3,4</sup> our study is focused on the optimization of craniotomy position, to maximize fundus exposure chance.

We disagree with Roser et al<sup>1</sup> when they state that the retrolabyrinthine meatotomy (RLM) “is not at all necessary or advised.” In fact, we believe that the RLM, involving a stereomicroscopical view of the whole internal auditory canal and the distal extent of tumor, allows an extremely accurate dissection and precise instrumentation, which is advocated when operating into both the cerebellopontine angle and the internal acoustic canal. In our experience, drilling occurs in a straight line and proceeds across the posterior wall and the distal roof of the canal. As we understand it, the “convexity-shaped fashion” in which the bone is drilled around the labyrinth, means that the angle of view of the microscope may vary, as allowed by the surgical corridor to bypass the bulging labyrinth. However, the resulting surgical corridor is straight because it passes through the bone which overhangs the labyrinth, rather than bypassing it, and the lateral semicircular canal might be jeopardized only if the landmarks of the labyrinth were disregarded.

Regarding the need of RLM in cases in which the tumor does not reach the fundus, we want to remark that the meatotomy may be tailored, based on the distal extent of the tumor. In this sense, an accurate preoperative planning, as we described in our work,<sup>2</sup> may be useful to optimize craniotomy position, even in cases in

which there is no need to drill all the canal wall up to the fundus: When the mass does not reach the fundus, the line underlying the surgical corridor runs from the distal pole of the tumor, tangentially to the labyrinth, defining the extent of both the RLM and the craniotomy. As we described in the discussion of our work,<sup>2</sup> we can distinguish a proximal meatotomy for tumors invading up to the proximal half of the canal and a distal one for those reaching the fundus. The far distal meatotomy, including part of the distal ring of the canal bone, is intended for tumors adhering to the fundus, as often occurs in schwannomas of the superior vestibular nerve.

Regarding the risk of loss of auditory potentials in case of direct tumor manipulation in a narrow space, such as the fundus is, when it has not been exposed, we believe that RLM represents a way to address this problem, by improving the exposure and allowing for the use of a sharp microsurgical dissection technique.

Comparing the role and outcomes of microscopical and endoscopic techniques, either as alternatives or combined, deserves a wider discussion, which is beyond the objectives of our article. We believe that hearing preservation surgery, despite many possible technical disagreements and several still-open questions, should be pursued as the main active strategy to prevent deafness in patients with vestibular schwannoma, providing clinical outcomes which are related more with each center’s expertise, rather than with the use of any specific approach.

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