

## **THE TRANS-CANALAR APPROACH: AN INNOVATIVE SURGICAL TECHNIQUE FOR THE REMOVAL OF SMALL VESTIBULAR SCHWANNOMA.**

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### **Aim.**

Up to date, there are 3 surgical approaches to vestibular schwannomas: retro-sigmoid, trans-labyrinthine and middle fossa. Although there are specific indications for each, surgeon's experience and personal preferences remains one of the determining factors in the choice. We, together with the ENT group of the Modena and Verona hospitals, propose a new surgical approach through a trans-canal access, which in selected patients may be a viable alternative therapeutic option. Trans-canal approach allows a direct corridor from external to internal auditory meatus, with minimal invasiveness and maximal efficacy, for excision of small intra-meatal schwannomas

### **Methods.**

From September 2014 to August 2016 we have treated 170 vestibular schwannomas, 22 of which through the trans-canal approach. The inclusion criteria were: small tumour (limited to inner acoustic canal -IAC- or with minimal cisternal extension) and unserviceable hearing (AAO-HNS grade B or superior; Gardner-Robertson grade III or more). The 11 cases limited to IAC underwent surgery with endoscopic technique; those with extra-canal involvement required a widened approach and use of the surgical microscope. Intra-operative facial nerve neurophysiological monitoring was used in all cases.

### **Results.**

Complete resection with facial nerve preservation was achieved in all patients, with no mortality and minimal morbidity. In none of the cases we have observed CSF fistulas. Compared to traditional approaches, we observed a higher incidence of disequilibrium. Hearing loss was present in all cases.

### **Conclusion.**

The proposed approach is innovative because it allows a totally intra-osseous dissection, without any manipulation of cerebral or cerebellar parenchyma, and without use of retractor. This way, we avoided all complications related to CSF drainage and pneumatocephalus. This approach therefore allows a safe and minimally invasive way to excise vestibular schwannomas, although it requires good anatomical knowledge and endoscopic experience. We think that, despite the actual limited indications, there is a great potential for future development.