

# Vestibular neurectomy for intractable vertigo in Ménière's disease

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## Introduction

Ménière's disease (MD) is an idiopathic condition characterized by a triad of symptoms: recurrent acute vertigo, tinnitus and fluctuating hearing loss. MD has a high prevalence and significantly affects the patient's quality of life and work performance. In the majority of patients, symptomatic relief to vertigo attacks can be achieved by medical therapy. However when conservative therapy fails; a surgical treatment may offer relief.<sup>1</sup>

## Case report

A 53-year woman presented with intractable leftsided vertigo associated with MD. She did not respond to medical therapy, based on Betahistine and vasodilators. Intratympanic steroids and Gentamycin were consequently administered, resulting in a worsening of her leftsided hearing loss without any improvement of the vertiginous attacks. Consequently, we transected the left vestibular nerve through a retrosigmoid approach (Fig. 1 – 5) using neuromonitoring. Post-operative vestibular symptoms due to sudden deafness were present, but disappeared completely after a few months. The vertigo was completely controlled.

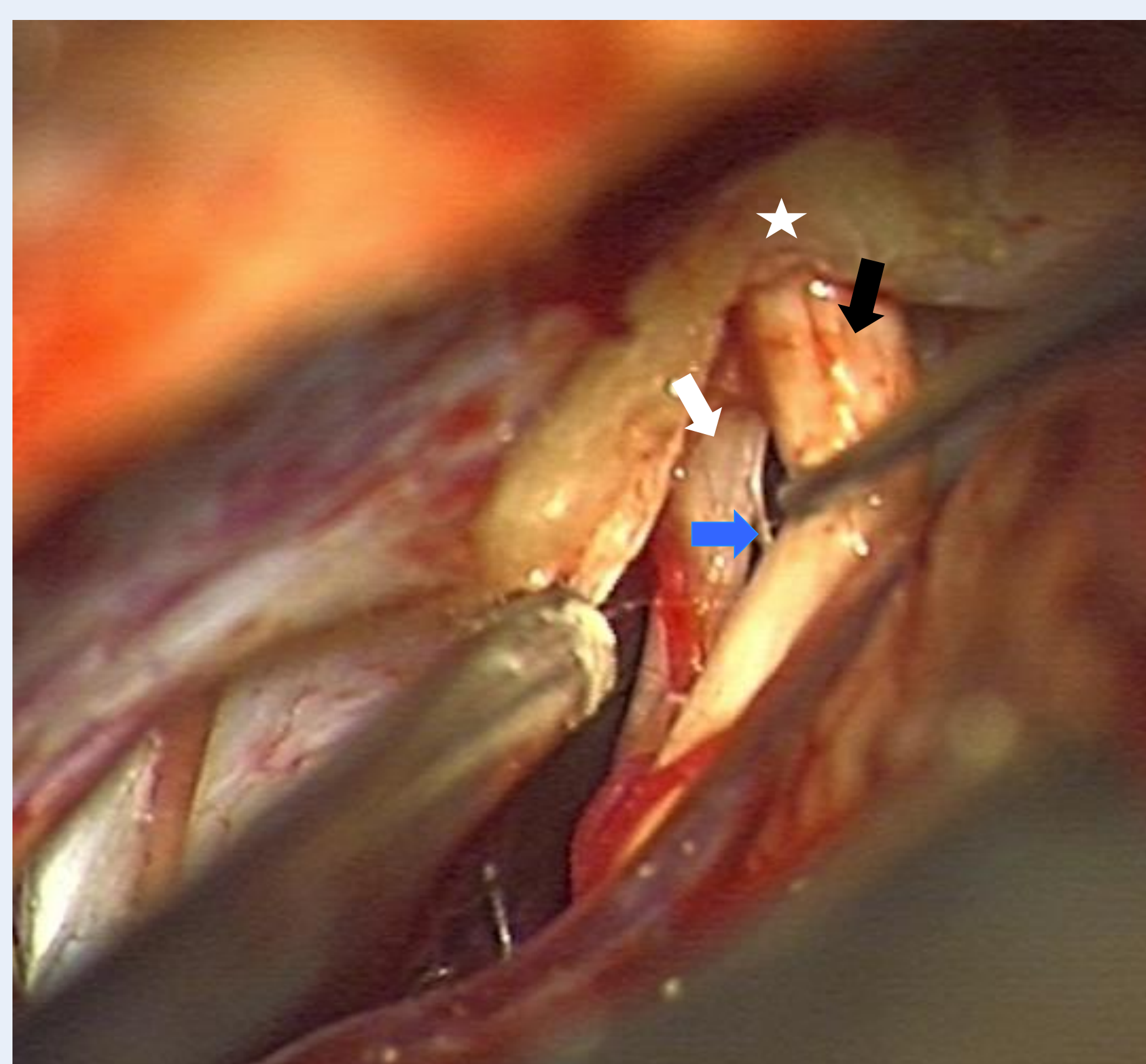


Fig. 1: Intraoperative view after opening of the porus acusticus internus (white asterisk) showing the facial nerve (white arrow), intermediate nerve (blue arrow) and vestibulocochlear nerve (black arrow).

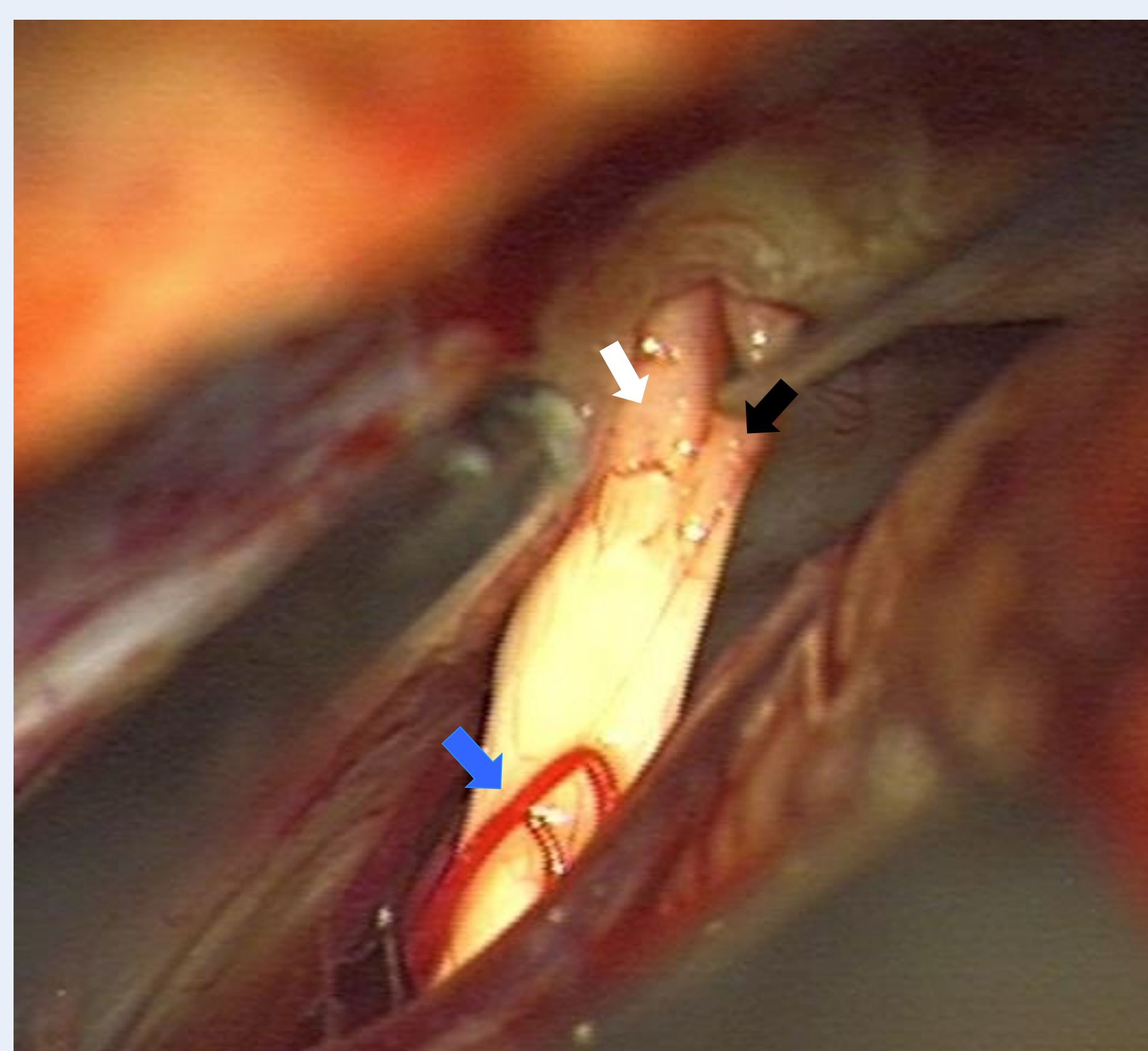


Fig. 2: Dividing the superior (black arrow) and inferior (white arrow) vestibular nerve through blunt dissection. The labyrinthine artery remains intact (blue arrow).

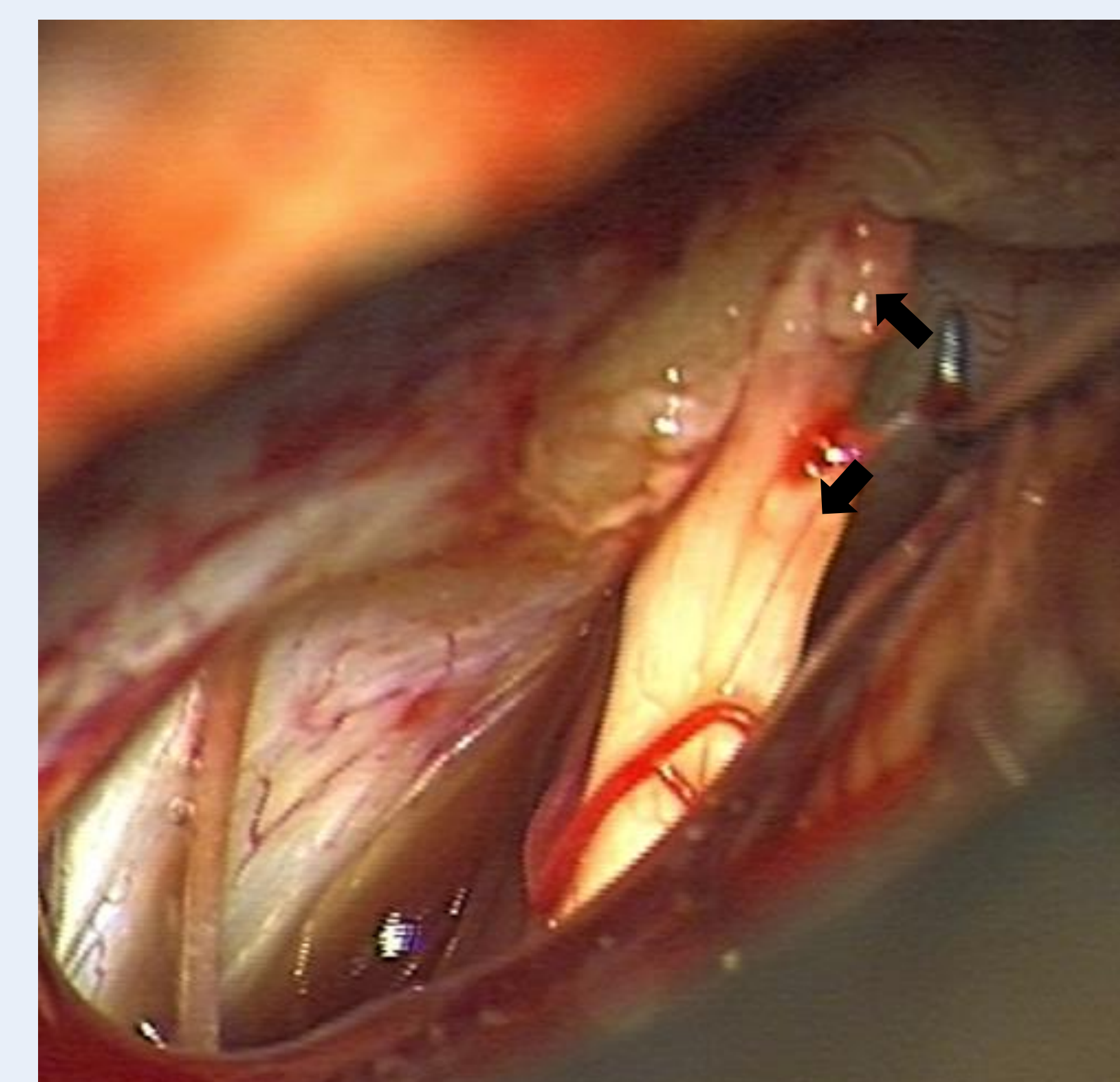


Fig. 3: Transection of the superior vestibular nerve (black arrows).

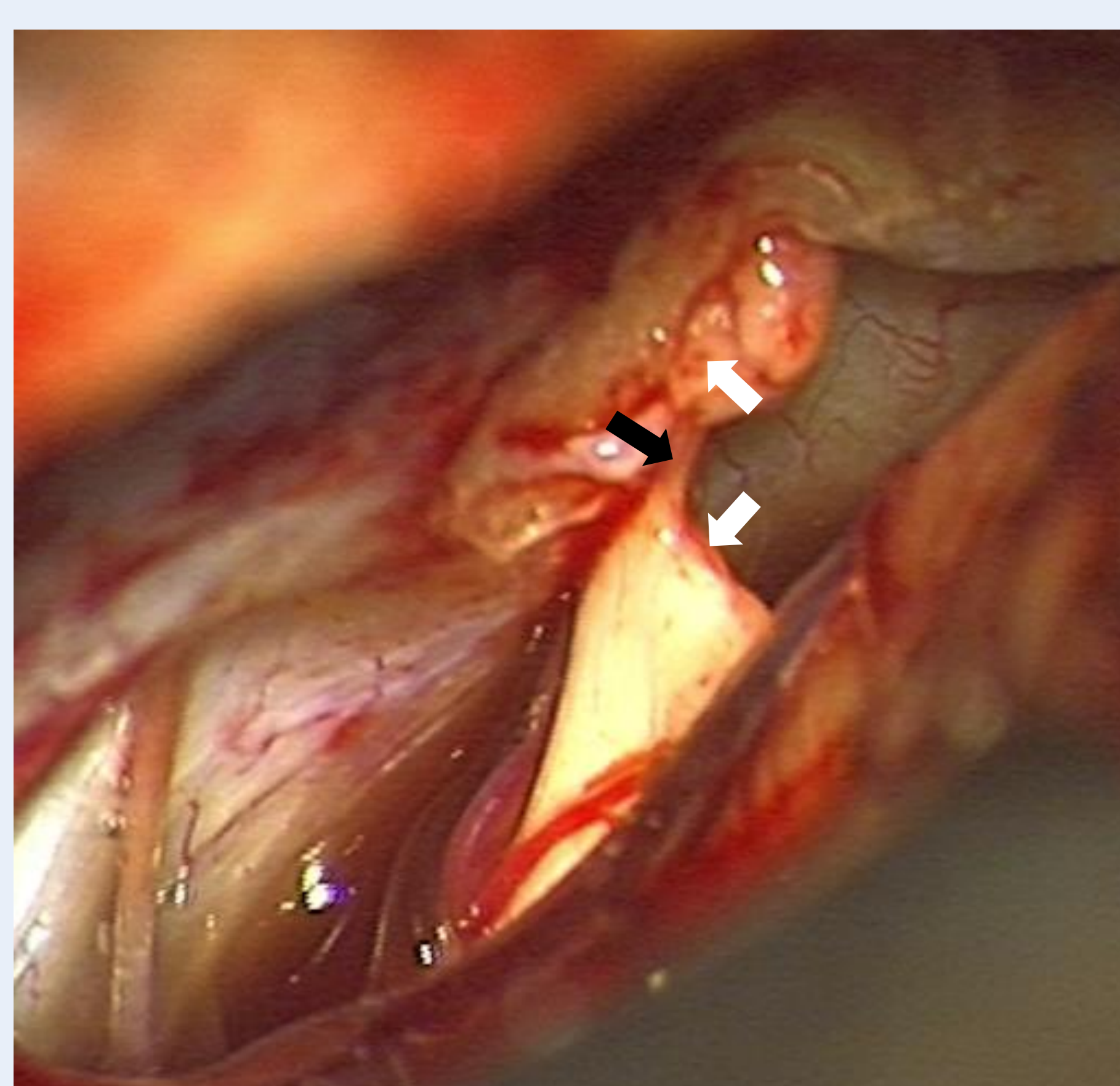


Fig. 4: Transection of the inferior vestibular nerve (white arrows). The cochlear nerve (black arrow) remains intact.

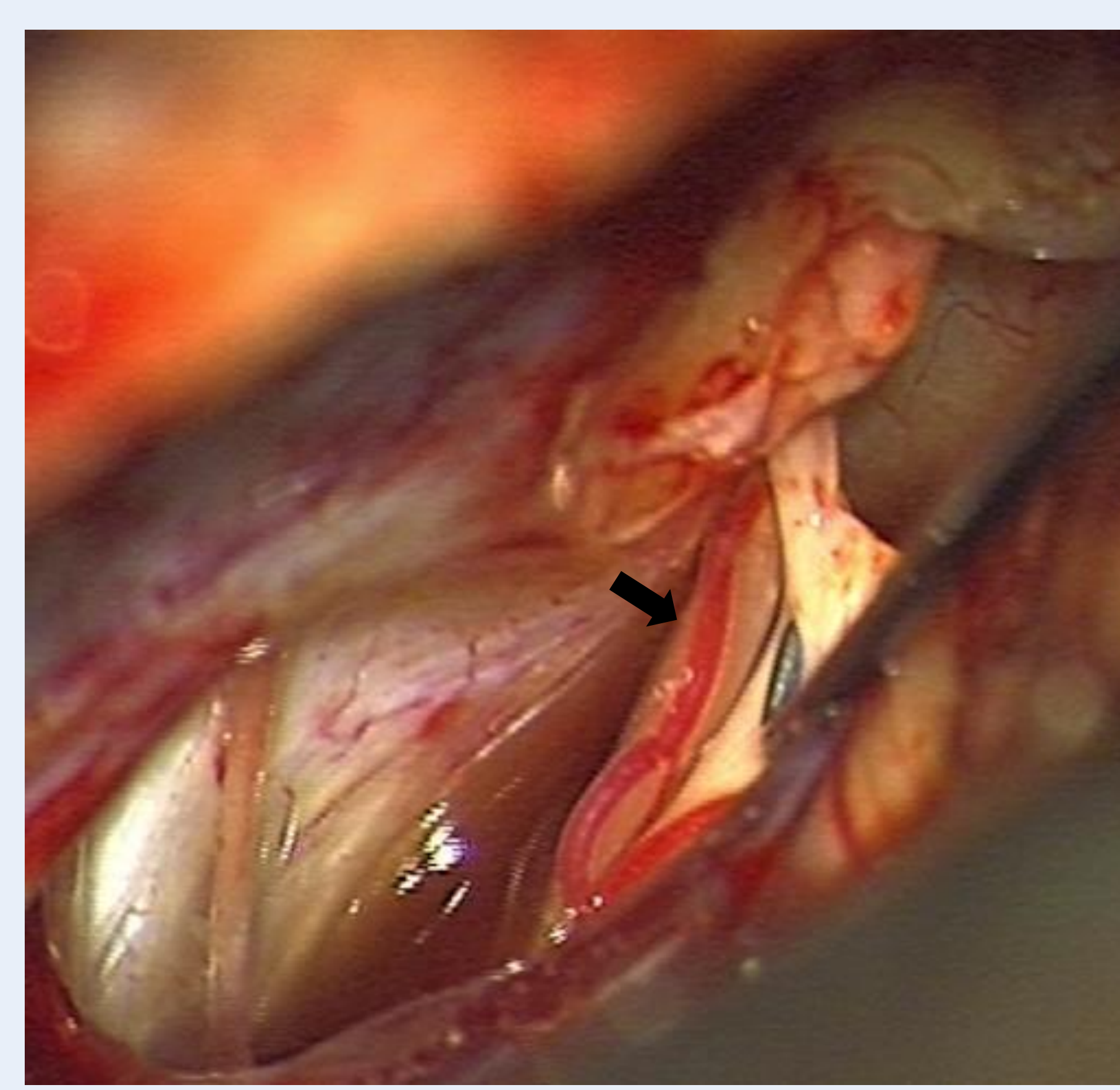


Fig. 5: The facial nerve (black arrow), situated ventral to the VIII<sup>th</sup> nerve complex, remained intact during the procedure.

## Discussion

Medication alone is insufficient in up to 20% of the MD patients. The next step is usually chemical labyrinthectomy with intratympanic Gentamycin (ITG). This technique is safe, but it has a failure rate in up to 40% of the patients and it can induce hearing loss.<sup>2</sup> Selective neurectomy of the vestibular nerve has a 94% success rate of excellent vertigo control associated with a high rate of immediate post-operative hearing preservation. It can be achieved with a retrosigmoid, retrolabyrinthine or middle fossa approach.<sup>3</sup>

## Conclusion

**Vestibular nerve section (VNS) is considered to be an effective therapy for vertigo in unilateral Ménière's disease that has been refractory to more conservative measures. VNS is the therapeutic option after failure of ITG but it should also be considered as an alternative of ITG when the patient has a functional hearing.**