Venous sinus diverticulum

Pulsatile tinnitus (PT) caused by venous sinus diverticulum is a relatively common, potentially incapacitating condition. Although treatment via an external approach or endovascular coiling has been reported, much remains unknown about the possible pathophysiological mechanisms and appropriate management of PT.

Case report

Trivelato et al. describe a new case of jugular bulb diverticulum associated with transverse sigmoid sinus stenosis, in a patient presenting with disabling pulsatile tinnitus. She was treated with dural sinus stenting and selective embolization of the diverticulum. In addition, we performed a literature review aiming to identify possible risk factors for developing the symptoms, as well as the safety and results of endovascular treatment [1].

Case series

Four PT patients with either sigmoid sinus diverticulum (SSD) or middle cranial fossa venous sinus diverticulum (MFD-VSD) were treated with transmastoid resurfacing. In 1 case, a revision operation was performed as a result of recurrence of PT 4.5 years after the initial operation. The medical records and temporal bone imaging findings were retrospectively reviewed.

PT was resolved in all cases immediately after transmastoid resurfacing, but 1 patient in whom bone wax was used for initial resurfacing experienced PT 4.5 years later. The PT was successfully managed with revision resurfacing with autologous bone chips/bone cement. In the other cases, the resolution of PT lasted throughout a median follow-up of 5.75 years. Notably, 2 of 4 cases had preoperative low-frequency hearing loss (LFHL) and experienced immediate postoperative improvement in LFHL.

PT resulting from either SSD or MFD-VSD can be treated successfully with transmastoid resurfacing of the venous wall. Preoperative ipsilesional LFHL and the improvement of hearing threshold after surgical intervention may be preoperative and postoperative surrogate objective signatures of PT. To ensure the resolution of symptoms, secure reconstruction with firm materials and long-term follow-up are mandatory [2]

1)
Trivelato FP, Araújo JF, Dos Santos Silva R, Rezende MT, Ulhôa AC, Castro GD. Endovascular treatment of pulsatile tinnitus associated with transverse sigmoid sinus aneurysms and jugular bulb anomalies. Interv Neuroradiol. 2015 Aug;21(4):548-51. doi: 10.1177/1591019915590367. Epub 2015 Jun 25. PubMed PMID: 26111983.
2)
Song JJ, Kim YJ, Kim SY, An YS, Kim K, Lee SY, Koo JW. Sinus Wall Resurfacing for Patients With Temporal Bone Venous Sinus Diverticulum and Ipsilateral Pulsatile Tinnitus. Neurosurgery. 2015 Jul 20. [Epub ahead of print] PubMed PMID: 26197352.

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