

Venous pulsatile tinnitus

Venous pulsatile tinnitus (VPT) is a specific form of **tinnitus** characterized by an objective and often subjective **bruit** that occurs as a result of localized venous abnormalities. Clinical **evaluation** relies on sound quality, duration, and precipitating factors. **Idiopathic intracranial hypertension** (IIH) and **transverse sinus stenosis** (TSS) are among the most common causes of VPT. Other causes include sigmoid sinus wall abnormalities (SSWAs), jugular vein anomalies (JVAs), and **emissary vein** anomalies. These anomalies can be detected on **magnetic resonance imaging**, **magnetic resonance angiography/magnetic resonance venography**, and high-resolution temporal bone **computed tomography**.

Pathogenesis

The **pathogenesis** behind the VPT includes turbulent **blood flow** as a result of luminal stenosis or abnormal dilation, amplification of internal sound due to **temporal bone defects**, and abnormal position of the venous sinus system structures adjacent to the bony structures of the auditive apparatus. Based on these theories, different interventional treatment modalities can be applied to treat the underlying causes.

Treatment

Endovascular treatments have shown high efficacy and safety among those treatments which include stenting of the lateral sinus stenosis in IIH and TSS, coiling of the SSWA and JVA, and embolization of emissary veins anomalies. Further studies are needed to understand the natural history of these anomalies and the efficacy of treatments of VPT, which-unlike other types of **tinnitus** can be cured with proper treatment ¹⁾.

¹⁾

Essibayi MA, Oushy SH, Lanzino G, Brinjikji W. Venous Causes of Pulsatile Tinnitus: Clinical Presentation, Clinical and Radiographic Evaluation, Pathogenesis, and Endovascular Treatments: A Literature Review. *Neurosurgery*. 2021 Oct 13;89(5):760-768. doi: 10.1093/neuros/nyab299. PMID: 34392338.

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