

Spontaneous Intracranial Dural Arteriovenous Fistula in the Differential Diagnosis of Pulsatile Tinnitus

Keywords: Pulsatile tinnitus; Arteriovenous fistula; Case report

Introduction

Tinnitus is defined as the perception of a sound in the absence of a corresponding external source. According to the heart beat synchronization, it can present as Pulsatile Tinnitus (PT) and non-pulsatile Tinnitus (NPT). PT is difficult to diagnose, especially when otoscopy is normal, since the underlying etiology is not always clinically identifiable. Arteriovenous dural fistulas are rare abnormal connections between arteries and veins, corresponding to 10-15% of cerebral vascular malformations, and may initially manifest as PT [1,2].

Methods

The report of this case was submitted and approved by the ethics committee of the Metropolitan University of Santos.

Case Presentation

A 37-year-old man presented with a sudden onset, holocranial headache and left pulsatile tinnitus. The auscultation of the lateral portion of the neck identified a systolic murmur, more intense in the left mastoid region. Otoscopy, fundoscopy, clinical and laboratory examination were normal. History of trauma investigation was negative. Magnetic resonance imaging of the brain, angioresonance and digital subtraction angiography of intracranial vessels confirmed the presence of a dural arteriovenous fistula (Figure 1). The arterial vascular supply was made by cavernous branches of the left internal carotid artery and transverse branches of the left occipital artery, in addition to numerous dural branches from arteries of the contralateral carotid system. The venous drainage was precocious and towards the left transverse and sigmoid sinus into the internal jugular vein and suboccipital plexus in the same topography. The congenital abnormalities in the vascular anatomy of the cerebral arteriovenous transition are the main etiological cause imputed in this case. The patient underwent endovascular treatment with selective arterial embolization with occlusion of the fistulous path and satisfactory results.



Figure 1: A) Brain MRI (left), B) Angioresonance of intracranial vessels (middle) and C) Digital subtraction angiography (right) shows a complex dural arteriovenous fistula.

Case Report

Volume 8 Issue 1 - 2018

Joseph Bruno Bidin Brooks^{1*}, Mateus Reghin Neto², Guilherme Lopes da Silveira³, Rodrigo André Oliveira³, Eduardo de Almeida Guimarães Nogueira⁴, Marcos Vinicius de Queiroz⁴, Victor Perez Meireles de Souza⁴, Celso Luis Silva de Oliveira⁵, Juarez Harding⁵ and Fábio Prosdociami⁶

¹Department of Neurology, Department of Function and Structure; UNIMES- Universidade Metropolitana de Santos, Brazil

²Institute of Neurological Sciences, Hospital Beneficencia Portuguesa de Sao Paulo, Brazil

³Clínica Mega Imagem, Brazil

⁴UNIMES- Universidade Metropolitana de Santos, Brazil

⁵Department of Neurology, Irmandade Santa Casa Misericórdia de Santos, Brazil

⁶Department of Function and Structure, UNIMES- Universidade Metropolitana de Santos, Brazil

***Corresponding author:** Joseph Bruno Bidin Brooks, Irmandade Santa Casa de Misericórdia de Santos, Avenida Claudio Luiz da Costa 50, Santos, São Paulo, Brazil, 11075-900, Tel: +55-13-32020600; Email: joseph3b@gmail.com

Received: September 12, 2017 | **Published:** February 15, 2018

Conclusion

The presentation of this case alerts the possibility of spontaneous intracranial dural arteriovenous fistula in the differential diagnosis of pulsatile tinnitus. Attention to this clinical-radiologic correlation may help physicians make correct diagnoses and appropriate treatment.

Acknowledgement

None.

Conflict of Interest

None.

References

1. Jolly K, Hare P, Irving R, Monksfield P (2017) A case of pulsatile tinnitus. *BMJ* 356: i6402.
2. Casale M, Sabatino L, Greco F, Moffa A, Vella P, et al. (2016) A reddish pulsatile mass beyond tympanic membrane: think before act. *Eur Rev Med Pharmacol Sci* 20(23): 4837-4839.