Images in Otology

Pulsatile Tinnitus From Bovine Aortic Arch Variant
Acúfeno pulsátil por arco aórtico bovino

María José Lesmas Navarro,* Carlos De Paula Vernetta, Verónica Rodríguez Rivera

Servicio de Otorrinolaringología, Hospital Universitario La Fe, Valencia, Spain

When synchronous with arterial pulse, pulsatile tinnitus often has a vascular origin. It may be due to different causes, including vascular malformations, venous angiomas, vascular tumours (glomus), increased intracranial pressure and blood flow alterations, among others. Magnetic resonance angiography is the test of choice for the diagnosis of most arterial alterations.

We report the case of a 50-year-old woman who presented pulsatile, chronic tinnitus in the right ear with over 25 years evolution, which increased with physical activity and decreased with cervical compression at the level of the carotid region. She did not suffer hearing loss, vestibular or neurological symptoms. Physical examination was unremarkable, with audiometry revealing a normal otoscopy and bilateral normoacusis.

Magnetic resonance angiography (Fig. 1) showed a bovine aortic arch variant of the left common carotid which stemmed from a right arterial trunk and elongation of the basilar artery.

The normal anatomical configuration of the aortic arch consists of 3 major vessels originating from this arch: innominate artery (brachiocephalic trunk), left common carotid artery and left subclavian artery.

The so-called bovine aortic arch variant is a congenital anomaly of the aortic arch, whereby the brachiocephalic trunk and left common carotid artery arise from a common trunk which stems from the aortic arch. It is the most common congenital anomaly of the aortic arch (10%). This vascular malformation may be a rare cause of pulsatile tinnitus. Its pathophysiological mechanism is possibly related to turbulences in arterial blood flow.

* Corresponding author.
E-mail address: mariahoo@hotmail.com (M.J. Lesmas Navarro).