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CLINICAL CASE

Capillary hemangioma of the middle ear: A case report

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KEYWORDS
Capillary hemangioma;
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Abstract Capillary hemangiomas are considered benign vascular tumours. Two-thirds of hemangiomas occur in the head and neck region. They commonly originate from the vascular networks around the geniculate ganglion. They are underdiagnosed because there are a great many diseases with similar clinical and radiologic signs. Therefore, the histological exam is definitive for diagnosis.

PALABRAS CLAVE
Hemangioma capilar;
Oído medio;
Tumor vascular benigno

Hemangioma capilar de oído medio

Resumen Los hemangiomas capilares se consideran tumores vasculares benignos. Aproximadamente dos tercios de los mismos se localizan en cabeza y cuello. Su origen en oído medio procede del aporte vascular del ganglio geniculado. Se encuentran infradiagnosticados debido a la gran variedad de patologías con similares manifestaciones clínicas y radiológicas, siendo definitivo el examen histológico para su diagnóstico.

Clinical case

We report the case of a 68-year-old patient who was admitted at internal medicine due to arterial pressure imbalance and diabetes mellitus type II, in the context of dizziness without object rotation of 2 weeks evolution, which coincided with walking and improved with rest. In the subsequent history, he referred hearing loss in the last year and pulsatile tinnitus in the left ear of 6 months evolution.

On examination, left ear otoscopy revealed a tri-lobed mass of vascular aspect in the posteroinferior quadrant (hypotympanum and mesotympanum), under an intact tympanic membrane. The patient presented no nystagmus and the vestibular tests were normal at the time of exploration.

Audiological assessment showed an acoumetry with positive Rinne and Weber to the right; audiometry revealed a mild-moderate bilateral transmission hearing loss with bilateral fall at 4,000Hz, to 80 dB in the left ear and to 65dB in the right ear.

A CT scan performed to assess the extent of the process revealed a mass lodged between the hypotympanum and the mesotympanum, in the region of the cochlear promontory.

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It was in contact with the tympanic membrane and the bottom of the carotid canal, with no signs of bone erosion. The provisional diagnosis was glomus tympanicum tumour. In addition, there were signs that inflammatory tissue filled the epitympanum and mesotympanum (Figure 1, Figure 2).

An exploratory tympanostomy was performed using the transmastoid approach and under general anaesthesia. Raising the tympanomeatal flap revealed a great hypertrophy of the conduit walls with very heavy bleeding, which required cauterisation. Once the middle ear was exposed, it was possible to observe a red mass attached to the posteroinferior quadrant of the tympanic membrane, which extended along the mesotympanum and hypotympanum. This encompassed the long process of the incus, along with granulation tissue that filled the epitympanum. The incus was removed to ensure complete tumour removal and the inferior wall of the tympanic frame was drilled to expose the hypotympanic area.

Figure 1 Coronal CT section of the middle ear, showing a mass extending from the upper wall of the EAM, with adhesion to the tympanic membrane. It includes the malleus and fills the hypotympanum without bone erosion.

Figure 2 Coronal section of the middle ear, showing extension across the entire tympanic cavity.

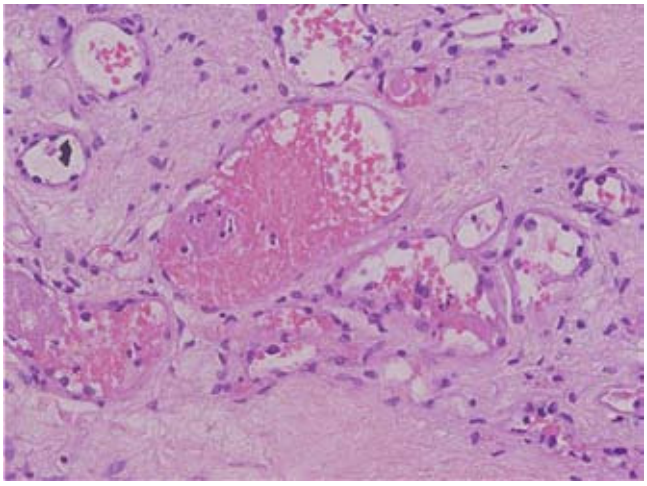

Figure 3 Histological image corresponding to a capillary angioma.

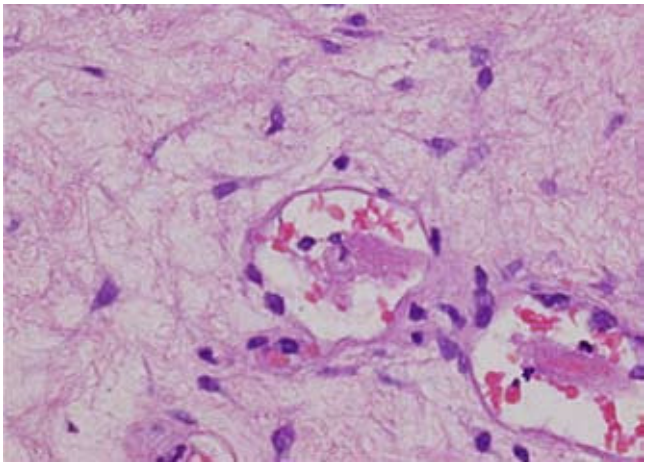

Figure 4 Magnified histological image showing the endothelium and central blood corpuscles.

Haemostasis was performed by cauterising the caroticotympanic artery. The portion of the tympanic membrane attached to the lesion was excised and replaced with a temporal fascia flap. The ossicular chain was reconstructed with a partial titanium prosthesis and a piece of autologous cartilage from the concha.

The anatomopathological study provided a definitive diagnosis in the presence of newly formed capillaries of irregular calibre and dilated lateral diverticula coated with a flattened endothelium and containing blood corpuscles. The immunohistochemical study revealed the absence of paraganglioma type cells (Figure 3, Figure 4).

Discussion

The finding of a vascular mass in the middle ear involves several diagnostic possibilities, including aberrant internal carotid artery, dehiscence of the jugular bulb and glomus tympanicum or jugulotympanic glomus. There can also be hemangiomas (or arteriovenous malformations) or benign and malignant neoplasms, albeit less frequently.[3]

The presentation is similar for all, with the presence of pulsatile tinnitus or a vascular retrotympanic mass being more frequent.[2] In such cases, a contrast CT study should be performed to provide guidance about the extent of the tumour, the presence of bone erosion and possible involvement of the ossicular chain.[2]

Hemangiomas appear as well-defined masses, homogeneous in the proliferative phase and heterogeneous in the involution phase, displaying minimum contrast with enhancement.[3]

It is also advisable to perform an MRI to view the nerves and vessels covering the mass more sharply, as MRI sensitivity and specificity are greater for the study of hemangiomas than that of CT.[2] The MRI signal is intermediate on T1, hyperintense on T2 and gadolinium-enhanced.[3] In our case, an MRI was not requested, because there was a strong preoperative suspicion of glomus tympanicum tumour and an extension into the jugular space had been ruled out by CT.

Arteriography may be useful to demonstrate the vascular origin of hemangiomas.[1]

The definitive diagnosis was obtained by performing an exploratory tympanoplasty with an anatomopathological examination of the surgical specimen[2] (newly formed and dilated capillaries of irregular calibre and lateral diverticulum coated with a flattened endothelium and containing blood corpuscles).

Although there have been cases of spontaneous involution,[4] the treatment of choice is total excision of the mass, preserving middle ear structures (especially in symptomatic cases), due to potential injury of the transmission apparatus.[3]

The approaches to be used can be transmastoid, translabyrinthine or via the middle fossa, depending on the extension. The latter is the most important to avoid incomplete excisions as they involve a large number of recurrences.[2]

Conclusions

Capillary hemangiomas are benign tumours with a low incidence in the literature due to their non-specific symptoms and radiological signs. Histological examination confirms this condition. Its resection is necessary given the audiological involvement that it causes secondarily.

Conflict of interest

The authors declare no conflict of interest.

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