Capillary Hemangioma of the External Auditory Canal

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Introduction

Hemangiomas are benign vascular soft tissue tumors found commonly in the head and neck region.1 Evidence of hemangiomas of the external auditory canal (EAC) is extremely rare, with only 18 adult cases reported thus far. Herein, we report the first case occurring in childhood. We discuss numerous options for treatment and present our opinion on the surgical approach for the treatment of hemangioma in the EAC.

Case Report

A 12-year-old male patient experienced unilateral hearing loss for 1 year. He did not exhibit symptoms such as dizziness, vertigo, otorrhea, pain, or tinnitus. Otoscopy revealed a pink, soft mass with well-defined margins that completely occluded the lumen of the left EAC (Figure 1). High-resolution computed tomography of the temporal bone revealed a lesion of volume 17.5 mm × 7.6 mm × 7 mm, located in the left EAC, with a strong enhancement after contrast injection but without substantial vessel connection or bone erosion (Figure 2).

Surgical resection was performed under general anesthesia. An endoscope was used to detect the adhesive contacts of the mass, which were connected to the skin of the anterior EAC and tympanic membrane. The size of the mass was reduced by suction. The mass was excised smoothly under microscope using an end-aural approach, followed by tympanoplasty for perforated tympanic membrane reconstruction. The histological diagnosis was capillary hemangioma. Postoperative follow-up evaluation did not reveal evidence of recurrence.

Discussion

Patients with hemangioma of the EAC may be either asymptomatic or may exhibit symptoms such as blood-tinged otorrhea, aural fullness, pulsatile tinnitus, and conductive hearing loss. Most hemangiomas of the EAC are purple, soft, and exophytic in nature, in addition to being compressible, nonpulsatile, and nonblanching under pneumatic otoscopy. High-resolution computed tomography of the temporal bone is the primary choice for determining the location and size of the lesion and assessing the extent of the bone erosion. An angiogram is generally not necessary, but it is useful to identify and embolize any feeding vessels supplying an advanced lesion when excessive bleeding is expected.1 Histological evaluation is required for final diagnosis. Capillary hemangiomas consist of capillary-like channels resulting from a proliferative endothelial process, which typically appear in infancy and disappear before the age of 5 years, whereas cavernous hemangiomas are large cavernous vascular spaces, typically occurring after the sixth decade of life.2

The treatment of choice is complete surgical microscopic excision using an end-aural, trans-canal, or posterior auricular approach. The end-aural approach provides unencumbered visualization for complete excision, causes less tissue destruction, permits easy rotation of local skin flaps for resurfacing of the EAC,3 and is suitable for perioperative hemostasis. The use of endoscope in otologic surgery has recently gained increasing attention because it provides high resolution, provides a wide-angled view of the surgical field, and enables improved tissue preservation. Although transcanal

Figure 1. Clinical appearance of the hemangioma.
endoscopic ear surgery has its advantages, hemostasis for removing hemangioma of the EAC remains difficult to achieve due to its one-handed technique.

Other options for management include embolization, mastoidectomy, or radiation therapy. Preoperative embolization is generally not required. Careful observation is recommended for small asymptomatic lesions. In our case, we had observed the lesion for 6 months without increase in size; however, surgical excision was conducted because of hearing loss. Recurrence was reported in some cases because the implant involved the temporal bone or was closely to the temporomandibular joint; such cases require more extensive approach.

Conclusion
This is the first case of a hemangioma in the EAC occurring in childhood. Hemangiomas are rare and benign tumors. Options for management are case dependent and can be selected after adequate preoperative evaluation. An endoscope could initially be used to detect the adhesive contacts of the hemangioma with its surrounding tissues, and this can facilitate complete surgical microscopic excision which is feasible for improving perioperative hemostasis and ensuring a minimum recurrence rate.

Authors’ Note
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Declaration of Conflicting Interests
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References
1. Martines F, Bentivegna D, Maira E, Marasa S, Ferrara S. Cavernous haemangioma of the external auditory canal: clinical case and review of the literature. Acta Otorhinolaryngol Ital. 2012;32(1): 54-57.
2. Mulliken JB, Glowacki J. Hemangiomas and vascular malformations in infants and children: a classification based on endothelial characteristics. Plast Reconstr Surg. 1982;69(3):412-422.
3. Reeck JB, Yen TL, Szmit A, Cheung SW. Cavernous hemangioma of the external ear canal. Laryngoscope. 2002;112(10):1750-1753.
4. Rutherford KD, Leonard G. Hemangiomas of the external auditory canal. Am J Otolaryngol. 2010;31:384-386.