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## Case report

# Schwannoma of the external auditory canal: An exceptional site

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## ARTICLE INFO

**Keywords:**  
 Schwannoma  
 External auditory canal  
 Pathology  
 Surgery

## ABSTRACT

**Introduction:** Schwannomas are benign solitary neural tumours that are only exceptional located in the external auditory canal, as only a few cases have been reported in the literature.

**Case report:** We report a case of schwannoma of the external auditory canal in an 18-year-old man admitted for an isolated mass of the initial segment of the right external auditory canal visible to the naked eye, obstructing all of the external auditory meatus. Computed tomography of the temporal bone showed an isolated mass of the external auditory canal. Management of this patient consisted of biopsy-excision of the mass, histological examination of which confirmed a schwannoma of the external auditory canal.

**Discussion:** Although rare, the possibility of a nerve tumour of the external auditory canal should always be considered. These tumours may be isolated or may occur in the context of von Recklinghausen's disease. The clinical presentation in the external auditory canal may correspond to recurrent otitis externa secondary to obstruction of the canal by the tumour, as in the case reported here. The definitive diagnosis must be based on the results of histological and immunohistochemical examination.

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## 1. Introduction

Schwannoma is a slow-growing benign neural tumour that arises at the expense of Schwann cells of peripheral nerve sheaths [1]. Most of these tumours arise in branches of the cervical or brachial plexus innervating skin or muscle. However, schwannomas can also rarely occur in the external auditory canal. We report a case of schwannoma of the external auditory canal diagnosed and managed in our institution.

## 2. Case report

We report the case of an 18-year-old man with no notable history, who consulted for progressive right hearing loss associated with initially intermittent ipsilateral earache that subsequently became permanent with no irradiation. The patient also reported recurrent episodes of otitis externa.

Physical examination demonstrated a pale pink, bilobed mass of the initial part of the external auditory canal visible to the naked eye that bled on contact and that obstructed all of the external auditory canal (Fig. 1), making the tympanum inaccessible to otoendoscopic examination. Examination of the left ear did not reveal any abnor-

malty. Rinne's test was in favour of right conductive hearing loss. The rest of the physical examination, especially neurological and dermatological examination, was normal.

Pure-tone audiometry was in favour of right conductive hearing loss, more severely affecting the low frequency range. Computed tomography of the temporal bones showed an isolated, well-circumscribed solid mass of the external auditory canal in contact with the tympanic membrane but with no signs of extension to the tympanum or the bony auditory canal (Fig. 2).

Management of this patient consisted of retroauricular biopsy-resection of the mass. The mass was dissected from the skin of the underlying external auditory canal and soft tissues and was then removed while preserving the osteocartilaginous wall of the canal and all of the tympanic membrane. A pack was left in place for 2 weeks to support the skin and prevent stenosis of the canal.

Histological examination with immunohistochemical confirmation concluded on an Antoni A type schwannoma of the external auditory canal (Fig. 3). The postoperative course was uneventful, with no recurrence or secondary stenosis with a follow-up of 18 months.

## 3. Discussion

Between 25 and 45% [2] of extracranial schwannomas arise in the head and neck. However, schwannomas of the external auditory

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**Fig. 1.** Schwannoma of the external auditory canal protruding at the meatus.

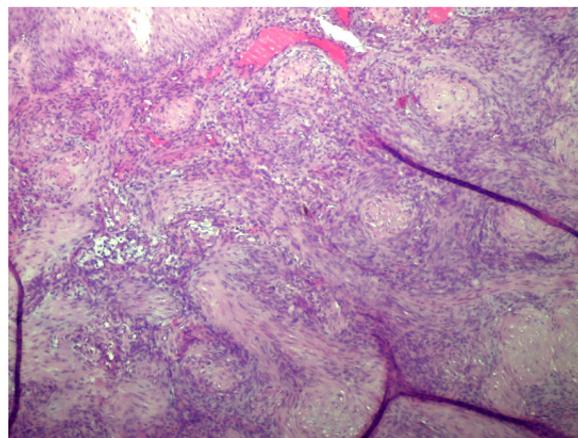
canal are exceptional, as only 7 cases have been reported in the literature, most recently by Lee et al. [1–3].

These tumours may be isolated or may occur in the context of type 2 neurofibromatosis (NF2) [4]. Multiple schwannomas can also be observed, especially in the context of NF2 or schwannomatosis. Most extracranial schwannomas of the head and neck arise from branches of the brachial or cervical plexus innervating skin or muscle [5].

The sensory innervation of the external auditory canal is complex and comprises various branches of cranial nerves: auriculotemporal nerve (V), nervus intermedius of Wrisberg (VII b), and the auricular branch of the vagus nerve (X). It is therefore difficult to determine the nerve from which a schwannoma of the external auditory canal arises, as in the case presented here [1].

The most common symptom of schwannoma is a painless, slow-growing mass. Neurogenic symptoms, such as pain or paraesthesia, and motor disorders related to schwannomas involving a motor nerve, are rare. The clinical presentation in the external auditory canal may correspond to recurrent otitis externa secondary to obstruction of the canal by the tumour.

Schwannomas have a firm consistency with smooth surfaces covered by normal skin. These tumours, arising from

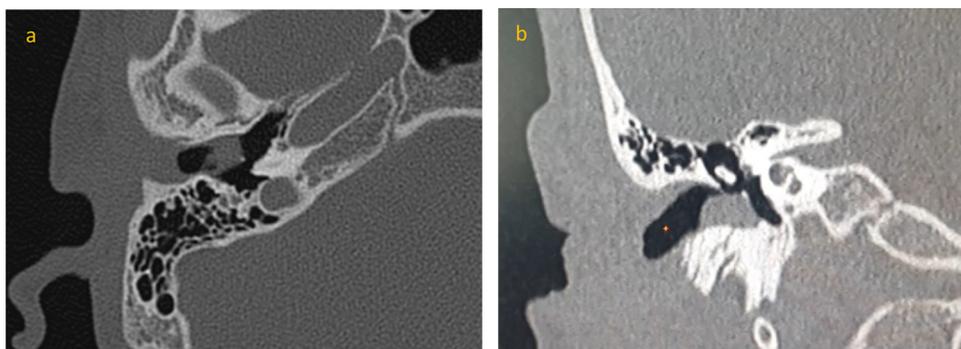


**Fig. 3.** Antoni A type benign schwannoma of the external auditory canal, composed of spindle cells with poorly defined cell borders and discrete nucleoli.

nerve sheaths, are surrounded by a capsule of perineurium. They grow by expansion, pushing the nerve fibres towards the periphery [6]. As these characteristics are similar to those of many other soft tissue tumours, the differential diagnosis includes lesions such as sebaceous adenoma, eosinophil granuloma, fibroma, chondroma and leiomyoma [1]. The definitive diagnosis must be based on the results of histological and immunohistochemical examination. Macroscopic examination of the present case revealed a round, well-encapsulated, greyish-white tumour with a smooth surface, with a long axis of about 2 cm. Immunohistochemistry revealed a conventional schwannoma entirely composed of S-100-positive Schwann cells.

CT or MRI are particularly useful for the diagnosis and to guide treatment, by defining the morphology of the lesion, its extension and its anatomical relations with adjacent structures, as neuromas arising in the cerebellopontine angle or middle ear mimicking tumours of the external auditory canal have been described [7].

The treatment of choice is surgery, via a retroauricular incision in 2 cases reported in the literature, and a transmeatal incision in the other cases. In the present case, we opted for a retroauricular approach in view of the size of the tumour. The plane of cleavage of this encapsulated tumour allowed *en bloc* removal of the mass with preservation of adjacent structures. Local recurrence is extremely rare.



**Fig. 2.** CT scan of the temporal bone, axial (a) and coronal (b) sections showing a schwannoma in the distal part of the external auditory canal in contact with the tympanic membrane.

**Disclosure of interest**

The authors declare that they have no competing interest.

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