



Tympanojugular Paraganglioma: A Case Report of an Extensive Left Jugular Paraganglioma

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ABSTRACT

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Tympanojugular paragangliomas are rare, highly vascular, and slowly growing tumors that develop from paraganglionic tissue located in the jugular foramen region. We report the case of a 50-year-old female patient presenting with progressive left-sided hearing loss secondary to an extensive jugular paraganglioma. This case highlights the clinical, radiological, and therapeutic aspects of this rare pathology.

KEYWORDS:

Tympanojugular paraganglioma; Glomus jugulare; Head and neck paraganglioma; Temporal bone tumor

INTRODUCTION

Head and neck paragangliomas represent less than 0.6% of all tumors in this region. Among them, tympanojugular paragangliomas are the most frequent temporal bone localization. These neuroendocrine tumors arise from paraganglionic tissue associated with cranial nerves IX and X. Because of their slow growth and polymorphic presentation, diagnosis is often delayed.

CASE REPORT

Mrs. Habiba Maljane, aged 50 years, with no significant medical or surgical history, consulted for progressive left-sided hearing loss evolving over seven years, associated with a sensation of aural fullness and autophony. No vertigo, pulsatile tinnitus, or otalgia was reported. Otoscopic examination revealed a retrotympanic red-violet mass.



Figure 1: Otoendoscopic view of the left ear showing a retrotympanic red-violet mass
Audiometry showed left-sided cophosis and right-sided sensorineural hearing loss.



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AUDIOGRAMME

Create date	23/06/2023 10:23	Birth date	04/03/1973
Person ID	E609014		
First name	HABIBA		
Last name	MALJANE		

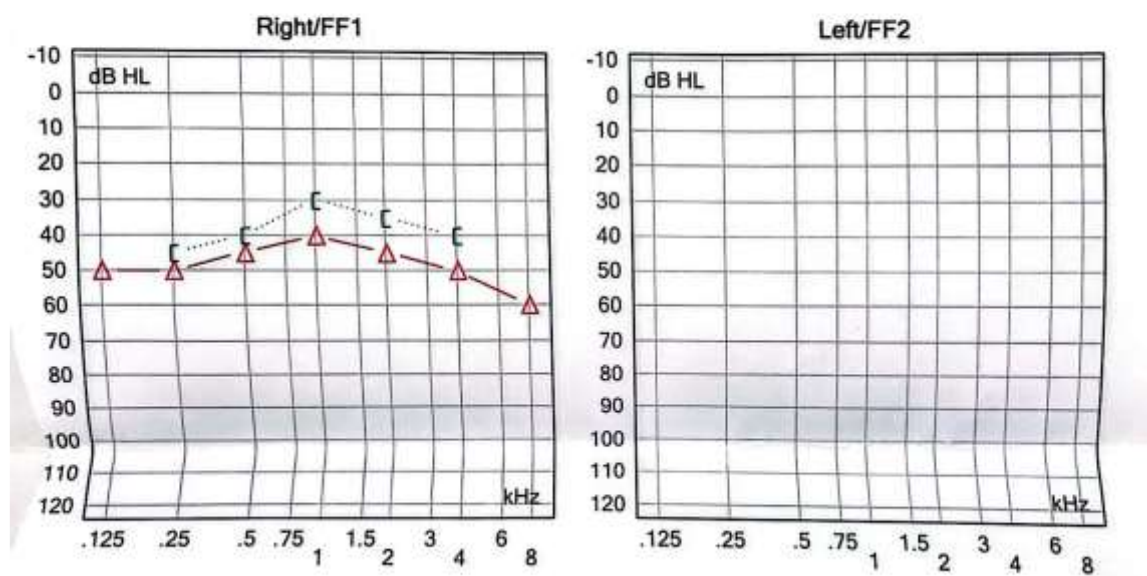


Figure 2: Pure-tone audiogram showing left-sided cophosis and right-sided sensorineural hearing loss

CT scan demonstrated an expansive process at the left jugular foramen measuring 30 × 20 mm, with strong enhancement after contrast injection. MRI revealed a 31 × 20 × 40 mm mass, hypointense on T1, hyperintense on T2, with

heterogeneous enhancement and a characteristic “salt-and-pepper” appearance. The lesion was classified as Fisch stage C–D.

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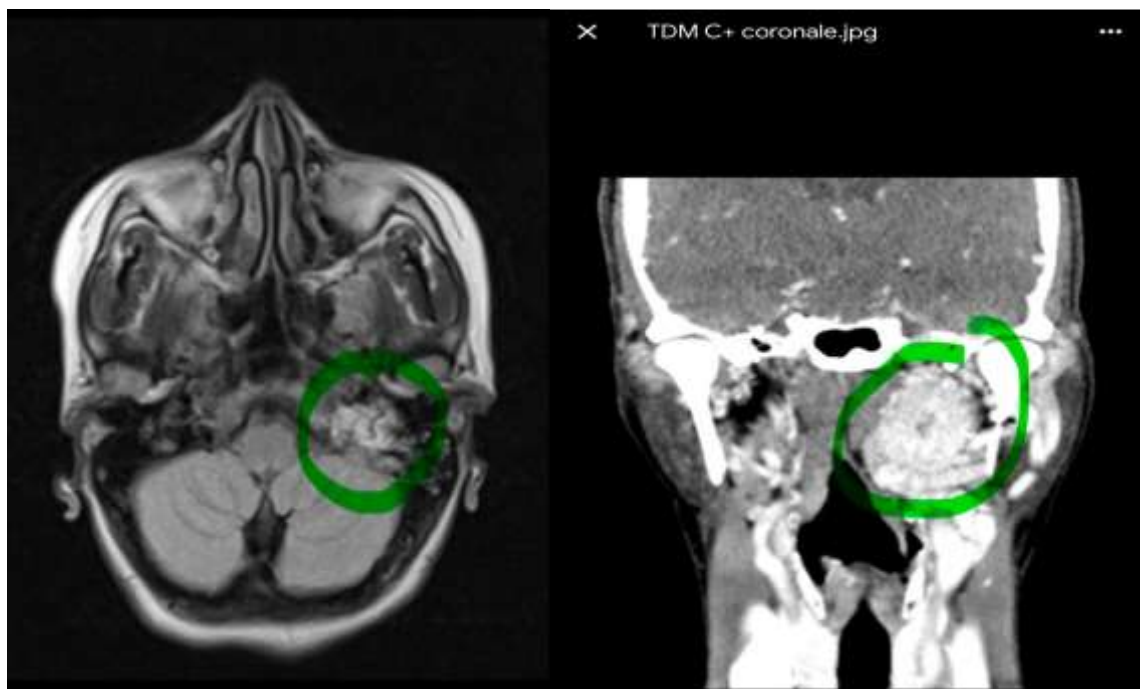


Figure 3-4 : expansive process at the left jugular foramen , CT scan and MRI images

DISCUSSION

Jugular paragangliomas originate from paraganglionic cells located in the wall of the jugular bulb. Although histologically benign, they are locally aggressive and can cause significant morbidity through bone erosion and cranial nerve involvement.

The symptoms vary according to the direction of tumor growth. Otological manifestations—including conductive or sensorineural hearing loss, pulsatile tinnitus, and ear fullness—are the most common. Neurological signs, such as hoarseness, dysphagia, or shoulder weakness, appear when lower cranial nerves (IX–XI) are affected. Cervical masses may occur when the tumor extends inferiorly. In our patient, the presentation was atypical—progressive unilateral deafness without pulsatile tinnitus or cranial nerve deficits—underlining the diagnostic challenge, especially in early or confined lesions.

The diagnostic approach combines clinical otoscopy, radiological imaging, and, when indicated, biochemical evaluation to exclude a secretory form. Otoscopy typically reveals a reddish retrotympenic mass that may blanch under pneumatic pressure (Brown's sign). Imaging is the cornerstone: CT delineates bony destruction of the jugular foramen; MRI confirms the diagnosis with the pathognomonic 'salt-and-pepper' pattern corresponding to vascular flow voids and hemorrhagic foci. Digital subtraction angiography may be used for preoperative embolization planning. Biopsy is contraindicated due to the extreme vascularity of these tumors.

The modified Fisch classification remains the most widely used surgical staging system. Our patient's tumor corresponded to stages C–D, indicating extension beyond the tympanomastoid area into the infralabyrinthine and infratemporal compartments.

The treatment of tympanojugular paraganglioma is individualized, depending on tumor size, extension, hormonal activity, and patient condition. Options include surgical excision (preferred for young, symptomatic patients or tumors with cranial nerve compression). Advances in skull base approaches and intraoperative neuromonitoring have improved outcomes. Preoperative embolization can reduce intraoperative bleeding. Radiotherapy or stereotactic radiosurgery (Gamma Knife) is reserved for small, residual, or inoperable lesions, offering excellent tumor control with minimal morbidity. Observation ('wait-and-scan') may be considered in elderly or asymptomatic patients with stable lesions. Recent literature highlights that long-term tumor control rates with stereotactic radiosurgery are comparable to surgery, with lower cranial nerve morbidity (>90% local control over 10 years). However, surgery remains the treatment of choice for large or expanding lesions, particularly those causing brainstem compression.

Although benign, these tumors may recur locally in up to 10–20% of cases after partial resection. Lifelong imaging surveillance is therefore required. The prognosis is excellent when diagnosed early and managed by a multidisciplinary skull base team.

CONCLUSION

Jugular paraganglioma is a rare, benign, yet locally aggressive tumor. Diagnosis relies on a combination of clinical and radiological findings, with biopsy contraindicated. Management should be tailored according to tumor extension, functional status, and secretory activity. Early diagnosis significantly improves auditory and cranial nerve outcomes.

REFERENCES

1. Jackson C.G. Glomus tympanicum and glomus jugulare tumors. *Otolaryngol Clin North Am.* 2001;34(5):941-970.
2. Tran Ba Huy P., Duet M. *Paragangliomes temporaux.* Elsevier Masson; 2019.
3. Sampath Chandra Prasad. Tympanojugular Paragangliomas: Surgical Management and Clinicopathological Features. In: *Paraganglioma: A Multidisciplinary Approach.* 2017.
4. Shen Y., Cheng L. Biochemical Diagnosis of Pheochromocytoma and Paraganglioma. *Endocrinology Research.* 2020.
5. Sanna M. Modified Fisch Classification for Jugulotympanic Paragangliomas. *Skull Base Surgery.* 2004.