



Pneumogastric Schwannoma: a Case Report

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Abstract

Cervical Schwannomas are benign encapsulated tumors of the nerve sheath that correspond to less than 0.1% of head and neck tumors. They usually appear as a laterocervical asymptomatic mass of slow growth. They are tumors whose treatment of choice is surgical excision. It is sometimes difficult to conserve the original nerve.

We present the case of a 23 year old patient with a right lateral mass. TC and MRI showed an image suggestive of Pneumogastric Schwannoma. Complete excision of the lesion was performed. On postoperative follow up patient presented transient dysphonia.

Keywords: Schwannoma; Resection; Pneumogastric; Cervical

Abbreviations

CT: Computed Tomography; MRI: Magnetic Resonance Imaging; IVJ: Internal Jugular Vein; CCA: Common Carotid Artery

Introduction

Schwannomas are benign tumors of the peripheral nerves sheath [1]. Around 25%-30% of Schwannomas are extracranial and are located in the cervical region. Within head and neck tumors, neurinomas correspond to less than 0.1%. They are usually located in the spinal, pneumogastric, cervical sympathetic plexus and superficial cervical plexus nerves. It is essential to have imaging studies, since they allow evaluating surgical access, location with vascular structures and preventing intraoperative and postoperative complications. At present, the following are used cervical computed tomography (CT) with contrast and cervical magnetic resonance imaging (MRI). The treatment of choice for this tumor is surgical [2], although it is sometimes difficult to preserve the functionality of the corresponding nerve.

Case Report

The case of a 27-year-old female patient with no relevant history is presented. She is referred to by hematology due to a tumor at the right lateral cervical level. Physical examination revealed

a 30mmx15mm mass in the low right jugular-carotid chain with hard-elastic and mobile characteristics with no adenopathies.

An ultrasound of the cervical region was performed which revealed a 25 x 16mm adenopathy between the internal jugular vein (IVJ) and the right common carotid artery (CCA). The study was complemented with cervical CT with intravenous contrast which showed cervical lesion in the low right jugular carotid chain of 20 x 18 mm and in the right high jugular carotid chain of 13 x 12 mm (Figure 1.A). Cervical MRI was requested with evidence of an expansive focal image in the right infrahyoid carotid space, with an ovoid morphology measuring 29 x 22 x 19mm, suggestive of Schwannoma (Figure 1B). Finally, a nasal video endoscopy was performed without evidence of airway compromise.

Due to suspicion of right pneumogastric Schwannoma surgical enucleation was performed with neuromonitoring control. Dissection is performed with individualization of viable fascicles of the right pneumogastric nerve. During the neurophysiological study before and after resection of the lesion, a positive response was evidenced with normal stimulation thresholds (Figure 2). In the deferred pathology, material corresponding to Schwannoma was obtained. The patient evolved in the immediate postoperative pe-

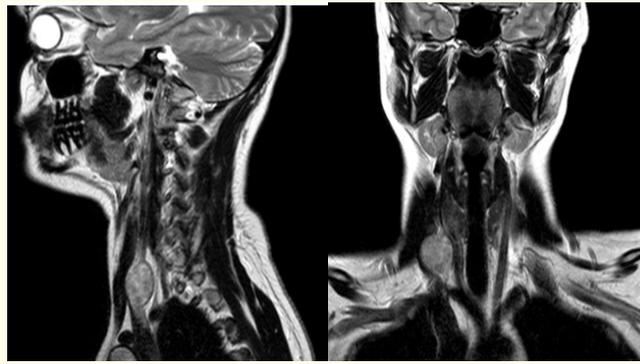


Figure 1: MRI of the neck with contrast in T2 slices 1. Sagittal and 2. Coronal.

Expansive lesion of the infrahyoid carotid space displacing the ACC medially and VJI lateral with slightly hyperintense and heterogeneous signal intensity.

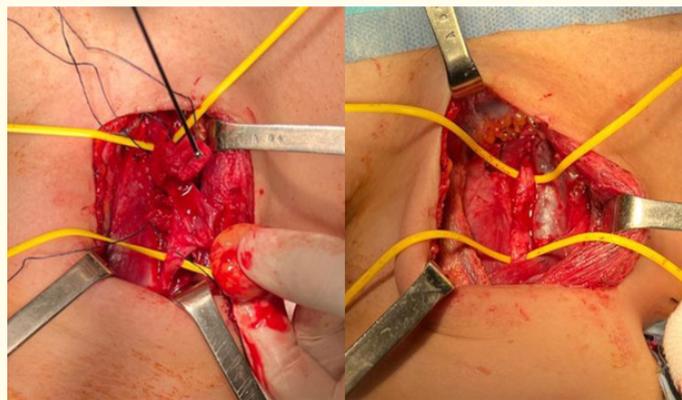


Figure 2: a and b. Cervicotomy with excision of right cervical Schwannoma. Repaired right pneumogastric nerve can be observed with individualization of viable fascicles of the right pneumogastric nerve.

riod with transient dysphonia and laryngeal fibroscopy observed decreased mobility of the right vocal cord with good closure at the expense of the left vocal cord. She did rehabilitation with speech therapy. She presented an adequate response to treatment and improvement in dysphonia two months after the start of the treatment.

Conclusion

The preoperative diagnosis of schwannomas is difficult. It usually presents as a lateral cervical mass without neurological symptoms. Differential diagnoses include cervical masses such as branchial cysts, adenopathies, or lymphomas [3].

The preoperative study of cervical schwannomas is essential. Imaging studies should be requested in order to evaluate the surgical approach and avoid intra-surgical and post-surgical complications. Some authors suggest fine needle aspiration, despite having low diagnostic specificity. The images of choice are: cervical CT, cervical MRI. In pneumogastric schwannomas, an image is usually

evidenced between the VVI and the ACC. The CT shows lesions with contrast enhancement and the MRI shows the lesions with medium intensity on T1 and hyperintense on T2. These images make it possible to assess the location, invasion, and vascularization of the tumor [4].

Surgical resection is the treatment of choice. It is usually a surgical challenge, since access to the lesion and its contact with the vascular-nervous structures are difficult⁵. In pneumogastric schwannomas, the lesion originates from the nerve fibers, generating greater complexity at the time of resection because the functionality of the nerve must be preserved to the best extent. It is advisable to use intraoperative neuromonitoring to have an electrophysiological study of the nerve before and after resection.

Among the surgical techniques, excision or enucleation of the lesion is suggested. Regarding the preservation of the nerve, it can be performed: primary anastomosis of the same, removal with preservation of the same or enucleation of the tumor between the healthy nerve fibers.

Among the postoperative complications, paralysis of the vocal cord and dysphagia are frequent. The incidence of dysphonia and definitive vocal cord paralysis is 10-15%. Transient dysphonia in the postoperative period has an incidence of more than 80%, it is essential to have rehabilitation and therapy [5].

Histological pathology evidence spindle-shaped cells with elongated nuclei. They can present in a group of high cellularity (Antoni A) or less cellularity (Antoni B). With immunohistochemistry, schwannomas intensely express the S-100 protein [6].

Conflict of Interest

No conflict of interest to disclose.

Bibliography

1. Redon H., *et al.* "Neurinomes Du Pneumogastrique Au Cou: Neurinomas of the Pneumogastric Nerve in the Neck". *Annales De Chirurgie* 25 (1971): 779-787.
2. Gaillard J., *et al.* "Neurinome Du Pneumogastrique À Las Base Du Cou: Pneumogastric Neurinoma at the Base of the Neck". *Otorhinolaryngol Audiophonol Chir Maxillofac* 23 (1974): 883-884.
3. Rohaizam J., *et al.* "Cervical Schwannoma: Report of Four Cases". *The Medical Journal of Malaysia* 67.3 (2012): 345-348.
4. Marín Andrés L Martínez., *et al.* "Schwannoma Quístico Cervical Del Nervio Vago". *Cirugia Espanola*, Elsevier BV 89.9 (2011): 627-628.
5. Sitta, Sergio., *et al.* "Schwannoma De Nervio Vago Cervical". *Revista Argentina De Cirugía Asociación Argentina de Cirugia* 113.2 (2021): 243-247.
6. Rodriguez J., *et al.* "Schwannoma Cervical". *Medicine Oral* 8 (2023): 71-76.