Schwannoma of the submandibular region

Sedat Aydın,1 Mehmet Gökhan Demir,2 Mahmut Ozan Fındık,1 Kayhan Başak,3 Muhammet Gazi Yıldız2

1Department of Otolaryngology, Kartal Dr. Lütfi Kirdar Training and Research Hospital, İstanbul Turkey
2Department of Otolaryngology, Prof. Dr. Celal Ertuğ Etimesgut State Hospital, Ankara, Turkey
3Department of Pathology, Kartal Dr. Lütfi Kirdar Training and Research Hospital, İstanbul Turkey

ABSTRACT
Schwannomas, benign neural sheath tumors, are mostly located at head and neck region on the cranial nerves and sympathetic nerves as solitary lesions. Most of the cases are asymptomatic and can be detected in any age and gender. Imaging modalities such as magnetic resonance imaging and computer tomography may be suggestive for diagnosis but pathologic diagnosis is sometimes difficult with fine needle aspiration biopsy. The treatment modality is surgical excision of the mass via enucleation or total excision. We represent a hypoglossal nerve schwannoma in submandibular region of a 39-year-old female patient who was treated successfully with extracapsular excision without any recurrence during one-year follow-up.

Keywords: Head and neck neoplasms; neurilemmoma; schwannoma; submandibular gland; treatment.

Schwannoma is a benign neural sheath tumor with approximately 40% of cases seen in the head and neck region.[1] Schwannomas can originate from the 4th, 5th, 7th, 10th, 11th, 12th cranial nerves and peripheral nerves. [2] In the head and neck region most affected cranial nerves are the vagus nerve and sympathetic nerves.[3] We present a submandibular schwannoma derived from the hypoglossal nerve that was surgically excised without loss of nerve function.

CASE REPORT
A 39-year-old female was admitted to the ENT clinic with a complaint of mass gradually growing over the past five years. She did not seek medical advice because the mass was small and she did not have any other complaints. Because it became bigger in the last year, the patient consulted in different clinics. Fine needle aspiration biopsy (FNAB) of the mass was non-diagnostic, and she was finally referred to our clinic.

The mass did not cause any pain or loss of function. On physical examination, a well-demarcated, solid and rubbery mass was palpated in the left submandibular area. The mass was 5x5 cm in size and all cranial nerve examinations were intact (Figure 1). The T2 weighted magnetic resonance investigation (MRI) revealed a contrast enhancing sharply demarcated 5x5 cm left-sided mass (Figure 2a, b). Because the FNAB was not diagnostic, we decided to excise the mass for
Aydın et al. Schwannoma of the submandibular region

pathological evaluation. Extracapsular surgical excision was performed under general anesthesia (Figure 3). The histopathologic diagnosis was schwannoma (Figure 4a, b). There was no recurrence on 18 months of follow-up.

DISCUSSION

Schwannomas are benign neural sheath tumors that mostly originate from the vagus and sympathetic nerves. Hypoglossal nerve schwannoma is rarely reported in the literature. Schwannomas are benign neural sheath tumors that mostly originate from the vagus and sympathetic nerves. Hypoglossal nerve schwannoma is rarely reported in the literature. Our case is one of these rarely described forms of schwannoma.

Most of the cases represent a mass in the head and neck region. Schwannoma may be detected at all ages with peak incidence in the second and third decades of life and has no gender predominance. It can also cause nerve paralysis due to compression. Vagal schwannomas are characterized by dysphagia and hoarseness whereas sympathetic nerve schwannomas present with Horner’s syndrome. Hypoglossus nerve schwannomas can present with paralysis of the tongue. Our case had an asymptomatic mass in the submandibular region.

Preoperative investigations such as FNAB are not generally sufficient. Liu et al. emphasized that only 20% of FNAB investigations were diagnostic. Similarly Yörük et al. reported that fine needle aspiration biopsy did not reveal any diagnostic clues. In our case FNAB examination was also nondiagnostic.

Ultrasonography can be helpful in the diagnosis of schwannoma due to its specific vascular properties but MRI is the most valuable diagnostic method. T1-weighted images show low signal intensity and T2-weighted images show high intensity. Our case had a high intensity well demarcated lesion on T2-weighted image.

The treatment choice for schwannoma is surgical excision via intracapsular enucleation or complete extracapsular tumoral excision. The problem and risk from surgery is nerve paralysis. Previous reports estimated that more than half of patients experience neural deficits. These may be related to poor surgical experience and careless dissection during removal. We preferred extracapsular enucleation in our case. The hypoglossal nerve function was totally preserved after surgery. Other surgical methods such as intracapsular enucleation have been reported as preserving 30% more neural function. The important point in this technique

![Figure 1. A 5x5 cm well-demarcated, solid, rubbery left submandibular mass.](image1.png)

![Figure 2. (a) Coronal and (b) axial T2 weighted magnetic resonance imaging views reveal contrast-enhanced sharply demarcated 5x5 cm left submandibular mass.](image2.png)
is the risk of recurrent schwannoma. Therefore, cases treated by intracapsular enucleation should be followed-up closely and completion surgery should be performed as needed. In our case there has been no recurrence during one-year follow-up.

Schwannoma, a benign neural sheath tumor, can be seen in cranial nerves. Hypoglossal nerve schwannomas are rarely seen in the head and neck region. Most cases are asymptomatic but can be diagnosed after pathological investigation. The gold standard treatment of choice is tumor excision. Extracapsular excision is a valuable method with preservation of neural function and less risk for recurrence.

Declaration of conflicting interests

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding

The authors received no financial support for the research and/or authorship of this article.

REFERENCES