The Journal of Laryngology & Otology
January 2002, Vol. **116,** pp. 63–64

Hypoglossal schwannoma in the submandibular space

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Abstract
Most schwannomas of the hypoglossal nerve originate from the intracranial portion, but they may extend extracranially. Solitary and extracranial schwannomas are extremely rare. We report a case of submandibular hypoglossal schwannoma along with its clinical course and management.

Key words: Hypoglossal Nerve; Neurilemmoma

Introduction

Schwannomas are benign, slow-growing neoplasms of neural sheath origin. In the head and neck area, schwannomas usually arise from the sensory divisions of the major nerves and cranial nerves. Involvement of motor nerves or multiple nerves is rare.[1–3] The purpose of this report is to pay special attention to the possible diagnosis of schwannoma in the submandibular space in the differential diagnosis of infectious disease or benign salivary tumour.

Case report

A 44-year-old female presented with a history of a slowly-growing mass beneath the left jaw for two months. No paraesthesia or tenderness was complained of. On physical examination, a soft tissue, mobile mass about 2 × 2 cm was found in the left submandibular triangle via bimanual palpation without atrophy or deviation of the tongue. Computerized tomography (CT) showed a circumscribed, well-defined, and heterogenous soft tissue lesion in the left submandibular space (Figure 1). At surgery, a well-encapsulated mass in front of the left submandibular gland with nerve bundles at both ends was noted (Figure 2). It was macroscopically compatible with hypoglossal schwannoma. Then, the hypoglossal nerve was dissected and identified as being the origin of this tumour. Tumour excision and immediate nerve grafting were performed using the ipsilateral greater auricular nerve. Pathological examination showed a schwannoma containing both Antoni A type and Antoni B type tissue (Figure 3).

Marked deviation of tongue to the left side on protrusion and dysarthria were found after the operation. No paraesthesia was noted. These symptoms of dysarthria and deviation were improved at the follow-up period of six months but loss of sensation of the left upper neck persisted.

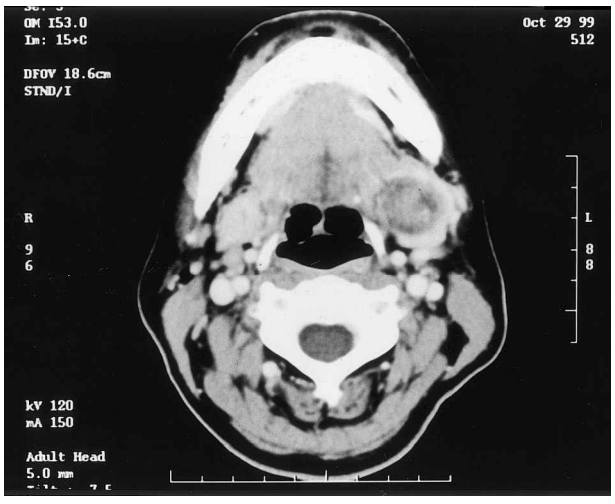

Fig. 1

Submandibular hypoglossal schwannoma: axial enhanced CT shows a large, well-defined marginated, heterogenous soft tissue mass at the left submandibular area.

Fig. 2

The hypoglossal schwannoma (arrow) and its nerve bundles (elevated by the dissecting instrument).

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Accepted for publication: 1 August 2001.

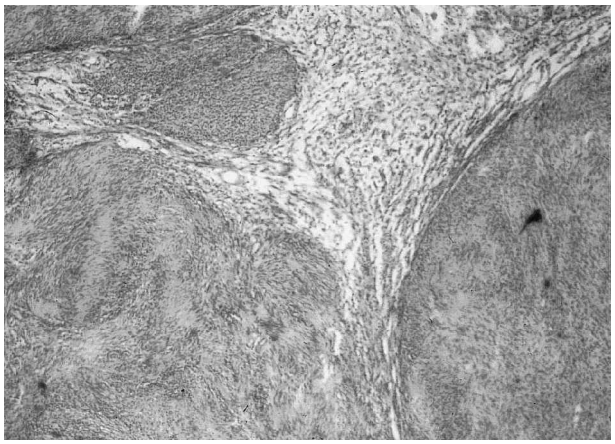

FIG. 3

Histological photograph showing schwannoma with typical Antoni A and Antoni B type tissue (H & E; ×100).

Discussion

Schwannomas are benign tumours of Schwann cell or nerve fibre sheath cell origins.[3,4] Schwannomas of the head and neck may be located in several sites, such as the parapharyngeal space, maxillary sinus, submandibular space and intracranial area.[1,3–6] Most of these originate from the intracranial portion with, or without, combined extracranial extension.[1–6] Solitary, extracranial neurogenous neoplasms are uncommon, especially those developing from the hypoglossal nerve.[7] To our knowledge, only eight cases of extracranial hypoglossal schwannomas without intracranial involvement have been reported and the patient we present is the ninth case.[1]

Schwannomas of the hypoglossal nerve affect women more than men, often presenting in the fourth and fifth decades of life.[1] They often present as a solitary, painless neck mass of variable size.[4] The diagnosis is based on clinical suspicion and confirmation may be obtained by surgical removal. Two differential diagnoses for tumours in the submandibular space includes infectious disease, benign pleomorphic adenoma, and nodal metastases.[1]

Total excision of the lesion via an external approach is the treatment of choice.[1,2] When a nerve segment must be sacrificed for complete tumour removal, immediate reconstruction with nerve grafting should be performed to restore the neural function. In this case, it is seemed that the improvement of motor function may result from compensation of the tongue instead of the nerve grafting.

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Dr Y. S. Leu takes responsibility for the integrity of the content of the paper.
Competing interests: None declared