The diagnostic dilemma of a parasympathetic schwannoma in the submandibular gland

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ABSTRACT

Schwannomas are benign soft tissue tumours that arise from nerve sheath cells. They are rare in the salivary glands and are thought to arise from the parasympathetic nerves. We report the case of a 69-year-old man who presented with a painless right submandibular mass that appeared to resemble a pleomorphic adenoma on ultrasonography and, on this basis, proceeded to surgical excision of the gland. We review the relevant literature and highlight the diagnostic pitfalls.

KEYWORDS

Schwannoma – Submandibular gland – Parasympathetic nerve

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Case History

A 69-year-old man was referred to the maxillofacial department with a 3-week history of a right submandibular mass. The lump was painful at mealtimes but with an absence of increased swelling. Clinical examination revealed a mass in the submandibular gland on bimanual palpation. There was no cervical lymphadenopathy and clear saliva could be expressed easily from the duct orifice. Ultrasonography revealed a 1cm well defined hypoechoic solid mass within the anterior aspect of the gland. The ultrasonography appearances were consistent with a pleomorphic adenoma. Fine needle aspiration was attempted but failed to yield an adequate number of cells. The probable diagnosis was discussed with the patient and he proceeded to surgery for a right submandibular gland excision. Surgery was uneventful with normal appearances of the lingual nerve and submandibular ganglion. Macroscopically, the lump appeared to reside entirely within the gland. Recovery was uneventful with no nerve deficits noted.

The histological report described a cellular schwannoma lying entirely within the gland. The tumour showed a compact arrangement of elongated spindle cells with a palisading arrangement of nuclei around an acellular eosinophilic zone called a Verocay body (Fig 1). This is termed an Antoni type A tumour in contrast to an Antoni type B tumour, which has a more disorderly arrangement of spindle cells with thick walled vessels and microcystic change in a loose stroma.

Discussion

Schwannomas are common soft tissue tumours that may arise from sensory, motor or autonomic nerves. They occur

in the head, neck, mediastinum, retroperitoneum and limbs, with the most common age group being 20–50 years.¹ The tumours are slow growing and usually painless. Interestingly, our patient did experience pain at mealtimes. It is not known whether this is due to local pressure effects or activation and feedback of effector parasympathetic fibres related to the schwannoma. Submandibular schwannomas are rare, with only 12 cases reported in the scientific literature.² There have been two reports of

Figure 1 Histology of the tumour showing a cellular schwannoma lying entirely within the gland, consistent with an Antoni type A tumour with a Verocay body

Figure 2 Ultrasonography revealing a 1cm well defined hypoechoic solid mass within the anterior aspect of the right submandibular gland

malignant transformation showing the malignant potential of these lesions.^{5,4} Similarly, a neurofibroma can have a comparable clinical picture but with a higher malignant potential.

Schwannomas remain difficult to diagnose on most imaging modalities. Ultrasonography appearances are often similar to those of pleomorphic adenomas, as in our case (Fig 2), and computed tomography may misinterpret Antoni type B tumours as malignant change. Magnetic resonance

imaging may be superior as the majority of schwannomas show a characteristic target pattern and intensities on T1 and T2 imaging. Ultrasonography guided fine needle aspiration was attempted but yielded an insufficient sample despite correct needle placement. Evaluable samples are difficult to obtain with schwannomas and approximately 20% will be unsuccessful. This is thought to be due to cystic degeneration and a large acellular component. Centrifugation of the aspirate and cytoblock preparation is recommended as an adjunctive technique.⁵

Conclusions

Surgical excision is the treatment of choice and when this is complete, long-term follow-up is not required. Incomplete excision should be followed up with annual ultrasonography and review.

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