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Schwannoma (neurilemmoma) of the facial nerve presenting as a parotid mass

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Abstract
A 32-year-old male presented with a mass in the parotid gland. Superficial parotidectomy was performed. Histopathologically the tumour was found to be schwannoma (neurilemmoma) and because this is unusual, the case is presented together with the histopathological findings.

Key words: Neurilemmoma; Parotid Tumour; Facial Nerve

Introduction

Eighty per cent of asymptomatic parotid masses are benign tumours. The most common benign tumours are pleomorphic adenomas, Warthin's tumour, and other monomorphic adenomas. Facial nerve schwannoma presenting as a parotid mass is very rare and may confuse the surgeon because although pre-operative diagnosis is possible, it needs experience.[1,2]

Case Report

A 32-year-old male was seen in our clinic, with a 2×2.5 cm mass in the parotid gland which had been present for six to seven months. ENT examination was otherwise normal as were routine laboratory tests. The mass was in the dorsal part of the superficial lobe of the left parotid gland. Ultrasound (US) examination showed the mass to be an ovoid and smooth-edged lesion with no apparent capsule formation. It was hypoechoic and due to its inner echo the structure was heterogeneous (Figure 1, 2). The radiologist suggested that the mass was a haemorrhagic or infected intraglandular cyst or degenerate lymphadenopathy. A pre-operative fine needle aspiration cytology result was non-diagnostic. Left superficial parotidectomy was performed. During the operation the mass was found between the temporal and zygomatic branches of the left facial nerve with nerve fibres surrounding the tumour. In addition the tumour was found to develop from a branch between the temporal and zygomatic branches. The mass was dissected without gross damage to the facial nerve and removed with the superficial parotid gland. Frozen section examined revealed no malignancy. The operation was terminated.

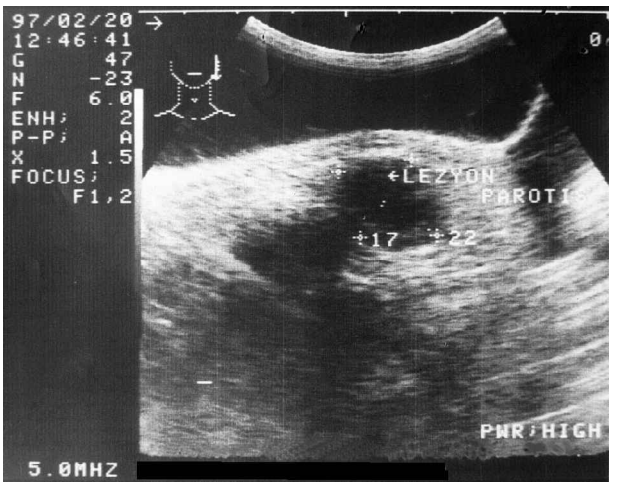

Fig. 1
US of the left parotid mass located in the dorsal part of the superficial lobe with heterogenous hypoechoic inner texture.

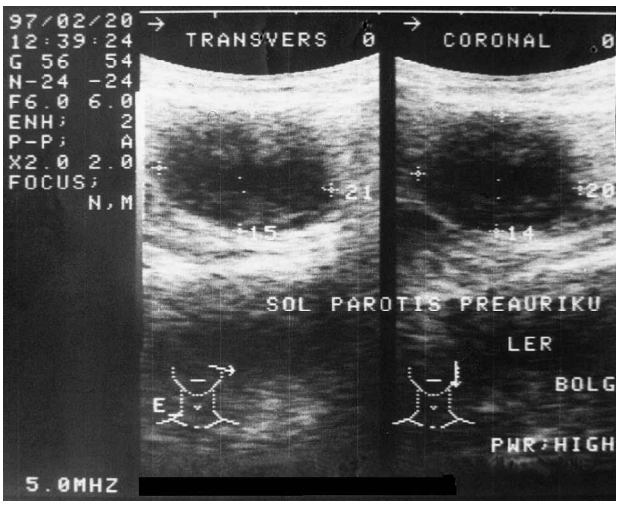

Fig. 2
US of the mass shows anechoic areas and moderate posterior acoustic enhancement that arouses the suspicion of a cyst or semisolid nature. No apparent capsule formation is seen.

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FIG. 3
Spindle cells forming Antoni A areas. Spindle cells form intersecting short bundles (H & E; ×100)

Histopathological features

Macroscopically the mass measured 2 × 2.5 cm with an adjacent 2 mm long nerve fibre. It was encapsulated and on slicing was yellow with areas of cystic degeneration.

Histologically, Antoni A areas with compact spindle cells and Antoni B areas with hypocellular, hyalinizated areas, and cystic regions were separated from the normal parotid tissue by a loose fibrous capsule. In Antoni A areas, spindle cells formed intersecting short bundles, and nuclear palisading and Verocay bodies could be detected (Figure 3). Immunohistochemically the tumour stained diffusely for S100. In the light of these findings the histopathological diagnosis was schwannoma or neurilemmoma.

At the end of two months the patient, apart from the left peripheral facial nerve paralysis due to per-operative nerve stretching, was healthy.

Discussion

Schwannomas (neurilemmomas) and neurofibromas of the facial nerve are very rare.[2–5] They account for six per cent of facial nerve paralysis due to neoplasms. The term neuroma means a benign tumour and is used for both schwannoma (neurilemmoma) and neurofibroma, although both of them originate from Schwann cells. They are different in histopathology and behaviour.[2,6,7] Malignant transformation is very rare.[4–6] Schwannoma is a solitary, encapsulated tumour and it is possible to preserve the nerve during surgery. Neurofibroma is not encapsulated and the cells are irregular. The nerve enters the lesion, so it is difficult to remove the mass and preserve the nerve. Malignant transformation can be seen.[7,8]

Symptoms of facial schwannoma may be different depending on the involved segment. A tumour in the intratemporal region compress the facial nerve and results in early symptoms. Extratemporal and intraparotid tumours are asymptomatic and the functions of the facial nerve are generally preserved.[1,9] In our case, the tumoral mass was surrounded by nerve fibres of the temporal and zygomatic branches, but with a careful dissection there was no damage to the facial nerve. We found that it was originated from a nerve between the temporal and zygomatic branches of the facial nerve, and decided to remove the mass with this branch of the nerve.

Ibarz first reported the intraparotid schwannoma in 1972.[1] On review of the literature, Albernaz and colleagues reported that there were 53 intraparotid facial nerve schwannomas.[2] This is an unusual tumour and it may sometimes be difficult to diagnose the tumour pre-operatively as it happened in our case. So we decided to report this case to illustrate the differential diagnosis and possible post-operative complications.

The tumour is mixed with facial nerve so that the mass hides the nerve. Although facial nerve branches may surround the nerve, the mass can be removed without damage to the facial nerve. However, in many cases a nerve graft is needed after total resection.[10,11] In our case neither fine needle aspiration biopsy (FNAB) nor ultrasound (US) presented a suspicion for malignancy and there was no diagnosis of facial schwannoma pre-operatively.

In conclusion, schwannoma must be thought of in the differential diagnosis of parotid masses. It is important to recognize the facial nerve and work with frozen sections during the operation.

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