CASE STUDY

Two Cases of Intraparotid Facial Nerve Schwannoma

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Abstract Intraparotid facial nerve schwannomas are rare, their preoperative diagnosis is difficult, and there are controversies about how to proceed when they are suspected intraoperatively. We present two cases of intraparotid facial nerve schwannoma that were diagnosed during parotid surgery, and describe the procedure and follow-up performed.

Dos casos de schwannoma intraparotídeo del nervio facial

Resumen La localización intraparotídea de schwannomas del nervio facial es poco frecuente y su diagnóstico preoperatorio es difícil. Estos hechos causan controversia sobre cuál es la actitud que debe seguirse ante la sospecha intraoperatoria de un schwannoma del nervio facial intraparotídeo. Se presentan dos casos de schwannoma intraparotídeo del nervio facial diagnosticados en el transcurso de una cirugía de parótida. Se describe la conducta terapéutica y seguimiento realizado en ambos casos.

Introduction

Facial nerve schwannomas are infrequent benign tumours.1,2 They are characterised by progressive facial palsy symptoms when they affect the intratemporal facial nerve. In contrast, the first symptom manifested by extratemporal schwannomas is a parotid mass, which can be mistaken for a parotid tumour.3,4 Preoperative diagnosis is difficult,5,6 so different therapeutic algorithms have been proposed to indicate the course of action in case of intraoperative suspicion of facial nerve schwannoma.3,4,7

Clinical Case

Clinical Case 1

We present the case of a 51-year-old female patient who attended consultation due to a painless right submandibular nodule of 4 months’ evolution, with fine needle aspiration (FNA) cytology suggestive of pleomorphic adenoma and with no other clinical manifestations. The preoperative magnetic resonance imaging (MRI) study revealed another, previously


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unknown injury in the deep plane of the left parotid gland, also suggestive of pleomorphic adenoma. For this reason, the patient was taken to surgery with the tentative diagnosis of pleomorphic adenoma of the right submandibular and left parotid glands. The parotidectomy found a tumour in the anterior region of the stylomastoid foramen (Fig. 1). The facial nerve entered the tumour and could not be separated from it, so an intraoperative biopsy had to be performed. The study was consistent with schwannoma, so the tumour was dissected, attempting to preserve the majority of nerve fibres. The patient presented a House-Brackmann grade V facial palsy in the immediate postoperative period. Facial function improved after rehabilitation treatment, achieving almost complete eye closure and facial mobility in lower areas. She did not require reoperation in 2 years of follow-up.

**Clinical Case 2**

We also present the case of a 52-year-old male patient who complained of a painless lump in the right parotid region of 3 months’ evolution, with no other clinical manifestations. The FNA cytology was suggestive of pleomorphic adenoma. The MRI showed a 4-cm mass in the right parotid, suggestive of pleomorphic adenoma (Fig. 2). We decided to perform a subtotal parotidectomy. During surgery, we could not identify the facial nerve trunk so we began to search for it through retrograde dissection. Once we reached the fork, we observed that the nerve entered the tumour without the possibility of separating them. Although an intraoperative biopsy was consistent with pleomorphic adenoma, given the strong suspicion that this was a schwannoma, we decided to excise the tumour to preserve the nerve fibres. The definitive result of the histological study was schwannoma with a microscopic epithelioid pattern. The patient presented transient facial paresis with complete recovery of facial function 3 months after surgery. He did not require reoperation after 16 months of follow-up.

**Discussion**

Facial nerve schwannomas are infrequent benign tumours.\(^1,8\) Intraparotid involvement is the least common,\(^1,4,7,9\) representing approximately 10% of all cases of facial nerve schwannomas.\(^10,11\) Its malignant degeneration is not frequent.\(^2\)

The extratemporal form commonly manifests as a painless parotid mass with slow growth\(^3,4,8,11\) and unaffected facial nerve function.\(^2,4,5,7,8,11\) These clinical features are similar to those of pleomorphic adenoma.\(^4,8,10\) Our first case of facial schwannoma was detected accidentally during the magnetic resonance imaging study of a submandibular gland tumour, while the second patient presented the typical clinical symptoms.

Preoperative diagnosis is difficult\(^4-6,12\) because FNA cytology and MRI studies are not always conclusive.\(^10,13\) The lack of a preoperative diagnosis means that the surgeon may have to change the surgical plan based on intraoperative findings and have to decide what to do with a tumour that affects the facial nerve and whose resection may lead to considerable morbidity.\(^10\) Different authors have proposed various algorithms to facilitate intraoperative treatment decisions.\(^3,4,7\) Suspicion that the tumour found is a facial schwannoma is established through difficulty in identifying the facial nerve,\(^7,11\) strong adhesion between the nerve and the tumour\(^5,11\) and the presence of facial muscle activity by electrical stimulation of the tumour.\(^5,7,8\) Alicandri-Ciufelli et al.\(^7\) recommend performing an intraoperative biopsy for diagnostic purposes if the tumour cannot be resected without damaging the nerve at its trunk or fork and the patient presents good facial nerve function (House-Brackmann grade III or less).

Intraoperative biopsy has also been recommended to rule out malignancy,\(^1,4,10,12,14\) but we must consider that the intraoperative diagnosis is not always correct.\(^5,14\) In the second case presented here, the preoperative biopsy was consistent with pleomorphic adenoma. However, faced with a strong suspicion of schwannoma, excision was not
performed and tumour dissection was chosen instead. Subsequently, the definitive histological study confirmed the diagnosis of schwannoma.

Some authors suggest that the best approach for patients with normal facial nerve function or mild dysfunction would be therapeutic abstention (not carrying out the excision), considering the suboptimal results obtained with nerve reconstruction. Alicandri-Ciufelli et al. propose an intraoperative action guide for intraparotid facial nerve schwannomas, based on the classification by Marchioni et al. This classification relates the position of the tumour within the facial nerve path with the possibility of injuring the nerve when resecting the tumour. It divides schwannomas into 4 types. Type A includes tumours that can be resected without sacrificing the facial nerve and that may be located in any portion of the extratemporal pathway. Type B includes tumours that can be resected with a partial sacrifice of facial function because they involve one of the peripheral branches or their distal divisions. Type C includes tumours that require sacrificing the main trunk of the nerve for their resection, while type D includes tumours that require sacrificing the trunk and its main divisions to be resected. Alicandri-Ciufelli et al. propose that type A schwannomas should be resected regardless of preoperative facial function. For type B schwannomas, they propose resecting those affecting a branch of the facial nerve whose sacrifice does not cause significant facial nerve dysfunction. With regard to type C and D schwannomas, they recommend resecting the tumours that cause facial paralysis of House-Brackmann grade IV or greater. For cases, which cause a facial nerve dysfunction of House-Brackmann grade III or less, they do not recommend resecting the tumours in which malignancy has been ruled out through a preoperative biopsy. Once resection of the schwannoma has been decided against, some authors advocate draining the tumour and controlling its evolution.

Our cases followed the recommended annual monitoring. Given the characteristic slow growth of schwannomas, a period of prolonged absence of facial paralysis is expected.

Conflict of interests

The authors have no conflicts of interest to declare.

References