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Lipoma of the parotid gland presenting with facial palsy

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Abstract
Facial palsy in the presence of ipsilateral parotid tumour is considered to be pathognomonic of malignancy. However, benign neoplasms and inflammatory lesions of the parotid gland have been reported to present with facial palsy. A case of lipoma of the parotid gland associated with partial facial paralysis is reported. Lipomas are very rarely seen in this site. To our knowledge, a lipoma of the parotid producing facial paralysis has not been described previously. This report highlights the difficulties in pre-operative diagnosis and management of such a lesion.

Key words: Parotid neoplasms; Facial nerve paralysis; Lipoma

Introduction

Facial paralysis in the presence of a parotid mass is considered to be *sine quo non* of malignancy (Eneroth, 1972). However, Ward and Hendrick noted a case of facial nerve paresis associated with pleomorphic adenoma for the first time in 1950. Other benign neoplasms such as Warthin's tumour (Lesser and Spector, 1985) and oncocytoma (Papangelou *et al.*, 1982) and inflammatory lesions including parotid abscess (Delozier *et al.*, 1989), infectious mononucleosis (Johnson and Avery, 1991) and cat scratch disease (Premachandra and Milton, 1990) have been found to cause facial paralysis.

Though lipoma is a common soft tissue neoplasm with ubiquitous presentation, it is only rarely observed in the parotid region (Baker *et al.*, 1981). A lipoma of the parotid gland producing facial palsy has not been reported previously in the English literature. It is necessary to be aware of the combination of non-malignant lesions of the parotid and facial palsy so that every effort can be made to preserve the nerve at the time of surgery. In this paper, we describe a case of lipoma of the parotid gland presenting with partial facial paralysis.

Case report

A sixty-two-year-old man presented with a lump in the angle of the jaw and facial weakness affecting the lower half of the face on the right side. He had noticed the lump six years ago but it had not changed in size. The facial weakness developed suddenly three days prior to the presentation, causing dribbling of saliva and slurring of speech.

On examination, there was a 3 cm × 4 cm soft swelling in the right parotid region, with a smooth surface (Figure 1). It was mobile and non-tender and the skin moved over the mass freely. The facial paralysis was confined to the buccal and mandibular branches on the right side. No lymph nodes were palpable in the neck. The rest of the ENT examination was normal. Axial and coronal CT scanning showed the mass to be confined within the superficial lobe of the parotid gland (Figure 2). In view of the facial paralysis a parotid malignancy was suspected. It was decided to explore the parotid gland, perform frozen section biopsy and proceed accordingly.

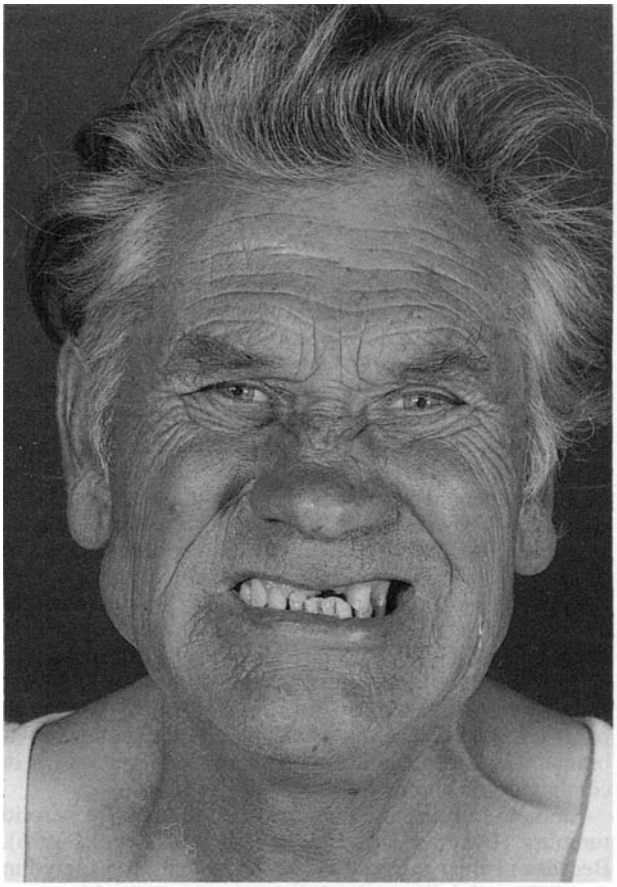

Fig. 1
Photograph of the patient showing the mass in the right parotid region and the partial facial paralysis.

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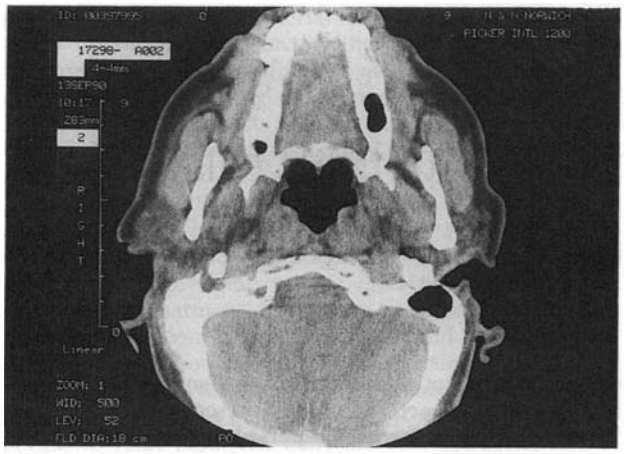

FIG. 2

Axial CT scan showing the homogenous mass in the right parotid region involving only the superficial lobe.

Through a classical parotidectomy incision, the parotid gland was exposed. A soft circumscribed mass was seen in the superficial part of the gland. Frozen section biopsy was reported as mature adipose tissue. As it was thought that a lipoma was unlikely to cause facial palsy it was decided to trace the facial nerve and to perform superficial parotidectomy. The main trunk and the two divisions of the facial nerve were exposed. When the main trunk was stimulated with a nerve stimulator, only the upper half of the face contracted. There were no responses on stimulation of the lower branches, although there was no evidence of tumour infiltration of branches of the nerve by the neoplasm. The mass was removed with wide margins and sent for histology. The post-operative period was uneventful. The partial facial paralysis did not improve even after four years.

Discussion

This case report combines two very rare features of an intraparotid lipoma and facial paralysis due to a benign lesion. Facial paralysis is one of the cardinal features of parotid malignancy, the others being pain, skin fixation and cervical lymphadenopathy. Eneroth (1972) reported a large series of parotid tumours in which all the patients who developed facial palsy, had malignant lesions. However, several case reports have documented the association of non-malignant lesions of the parotid gland and facial paralysis. O'Dwyer *et al.*, (1990) reviewed the English literature and found that among the benign neoplasms there were five pleomorphic adenomas, four Warthin's tumours and one case of oncocytoma. The inflammatory lesions associated with paralysis include parotid abscess (Delozier *et al.*, 1989), cat scratch fever (Premachandra and Milton, 1990) and infectious mononucleosis (Johnson and Avery, 1991). Most of these patients had total paralysis. When there was partial paralysis, the mandibular branch was the commonly affected one, either alone, or in combination with one or two other branches.

Lipomas constitute one to two per cent of the parotid tumours (Baker *et al.*, 1981; Walts and Perzik, 1976). Because of their rarity, they are not usually considered in the differential diagnosis. A lipoma can occur either as a circumscribed swelling or as a diffuse infiltration of the parotid gland. Localized lipomas present as painless, soft mobile lumps in the parotid gland. Diffuse lipomatosis due to fatty infiltration of the gland is bilateral and less commonly unilateral. It is secondary to an underlying metabolic abnormality (diabetes mellitus, alcoholism, thyroid disorders and malnutrition) or drug-induced (thiouracil, thiocyanate).

Various mechanisms have been proposed to account for the nerve involvement in a non-malignant lesion to the parotid gland. These include direct pressure (Mamakos *et al.*, 1977) inflammation and necrosis (Lessor and Spector, 1985) and haemorrhage into a cyst or a tumour (Wilkie and White, 1969). Histologically, ischaemia of the perineural vessels occurs consequent to the extrinsic compression of the nerve bundles (Kokide *et al.*, 1994). It is surprising that many pleomorphic adenomas even though they are large enough to compress and stretch the nerve, do not cause paralysis. It may be that the strategic position of the lesion in relation to the nerve is the deciding factor in causing paralysis. This may also explain the frequent involvement of the mandibular branch in cases of partial paralysis.

Clinical diagnosis of a parotid lipoma is generally difficult. It appears as a slow growing, non-tender, soft, circumscribed mass thereby mimicking a Warthin's tumour or a parotid cyst. High resolution CT scanning can be helpful in diagnosing the parotid lipomas. Normal parotid tissue shows positive density (greater than water) similar to, or less than, muscle. A lipoma typically has a homogenous appearance and negative attenuation with values of –50 to –150 Hounsfield units (Korentager *et al.*, 1988). But in our case CT scans were not able to point to the aetiology. Fine needle aspiration biopsy requires an experienced cytologist, but still it has a significant false negative rate in salivary gland tumours and diagnostic interpretation is more difficult than many other head and neck neoplasms (Lau *et al.*, 1986). Therefore, we did not perform fine needle aspiration biopsy in our patient.

The surgical management of uncomplicated lipomas in the parotid gland (after the diagnosis is made by frozen section biopsy) is controversial (Malave *et al.*, 1994). Some surgeons recommend simple enucleation while others advocate superficial parotidectomy. Frozen section biopsy in parotid tumours can be false negative sometimes (Hillel and Fee, 1983) and re-operation is associated with increased risk of injury to the nerve. It is wise to explore the facial nerve and excise the mass with wide margins.

References

Baker, S. E., Jensen, J. L., Correll, R. W. (1981) Lipomas of the parotid gland. *Oral Surgery, Oral Medicine, Oral Pathology* **52:** 167–171.

Delozier, H. L., Spinella, M., Johnson, G. D. (1989) Facial nerve paralysis with benign parotid masses. *Annals of Otology, Rhinology and Laryngology* **98:** 644–647.

Eneroth, C. M. (1972) Facial nerve paralysis: A criterion of malignancy in parotid tumour. *Archives of Otolaryngology* **95:** 300–304.

Hillel, A. D., Fee, W. E. (1983) Evaluation of frozen section in parotid gland surgery. *Archives of Otolaryngology* **109:** 230–232.

Johnson, P. A., Avery, C. (1991) Infectious mononucleosis presenting as a parotid mass with associated facial nerve palsy. *International Journal of Oral and Maxillofacial Surgery* **20:** 193–195.

Koide, C., Imai, A., Nagaba, A., Takahashi, T. (1991) Pathological findings of the facial nerve in a case of facial palsy associated with benign parotid tumour. *Archives of Otolaryngology, Head and Neck Surgery* **120:** 410–412.

Korentager, R., Noyek, A. M., Chapnik, J. S., Steinhardt, M., Luk, S. C., Cooter, N. (1988) Lipoma and liposarcoma of the parotid gland: High resolution preoperative imaging diagnosis. *Laryngoscope* **98:** 967–971.

Lau, T., Balle, V. H., Bretlau, P. (1986) Fine needle aspiration

biopsy in salivary gland tumours. *Clinical Otolaryngology* **11:** 75–77.
Lessor, R. W., Spector, J. G. (1985) Facial nerve palsy associated with Warthin's tumour. *Archives of Otolaryngology* **111:** 548–549.
Malave, D. A., Ziccardi, V. B., Greco, R., Patterson, G. T. (1994) Lipoma of the parotid gland. *Journal of Oral and Maxillofacial Surgery* **52:** 408–411.
Mamakos, M. S., Wright, R., Earle, A. S. (1977) Facial nerve palsy in a child with a parotid tumour. *International Surgery* **62:** 468–469.
O'Dwyer, T. P., Gullane, P. J., Dardick, I. (1990) A pseudomalignant Warthin's tumour presenting with facial nerve paralysis. *Journal of Otolaryngology* **19(5):** 353–357.
Papangelou, L., Alkalai, K., Kyrillopoulou, M. (1982) Facial nerve paralysis in the presence of a benign parotid tumour. *Archives of Otolaryngology* **108:** 458–459.
Premachandra, D. J., Milton, C. M. (1990) Cat scratch disease in the parotid gland presenting with facial paralysis. *British Journal of Oral and Maxillofacial Surgery* **28:** 413–414.
Walts, A. E., Perzik, S. L. (1976) Lipomatous lesions of the parotid area. *Archives of Otolaryngology* **102:** 230–232.
Ward, G. E., Hendrick, J. W. (1950) *Tumours of the head and neck.* 1st Edition. Williams and Wilkins Co., Baltimore, pp 388–390.
Wilkie, T. F., White, R. A. (1969) Benign parotid tumour associated with facial nerve paralysis. *Plastic Reconstructive Surgery* **43:** 528–530.

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