Case report:

Neglected left intraparotid facial nerve schwannoma causing complete facial nerve palsy: A case report

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Abstract

Extracranial schwannomas in the head and neck region are relatively rare neoplasms. The tumours are slow growing and often unnoticeable. The nerve of origin is unable to be determined until the time of surgery. Proper preoperative assessment of the disease can be done by imaging studies such as magnetic resonance imaging. The treatment for these tumours is surgical resection with preservation of the neural pathway. We report a case of left intraparotid facial nerve schwannoma in a middle-aged lady causing complete facial nerve paralysis. The clinical features, diagnostic possibilities and management are discussed.

Keywords: Schwannoma; extracranial schwannoma; parotid; facial nerve; paralysis

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Introduction

Schwannomas, also known as neurilemmomas or neurinomas are benign, slow-growing, encapsulated nerve sheath neoplasm that arises from Schwann cells which may originate from any peripheral, cranial or autonomic nerve of the body.[1] The involvement of the intraparotid part of facial nerve is extremely rare, representing about 10% of all cases of facial nerve schwannomas.[2] As there is no diagnostic modality that is certain, thus the diagnosis made intraoperatively and confirmation by histopathological examination. Here, we report a case of neglected left intraparotid facial nerve schwannoma causing complete facial nerve paralysis which successfully excised but poor postoperative facial nerve function.

Casereport

A 40-year-old housewife with six children, presented with a painless left neck swelling for five years, which was gradually increasing in size. There was associated facial asymmetry and numbness for one year made her unable to close her left eye completely and dropping left angle of mouth angle. Otherwise, she denied other significant history. Physical examination revealed a single 6 cm x 6 cm firm, mobile, well-defined margin and non-tender mass over the left infra-auricular region. The left facial nerve function was identified as House-Brackmann VI (Figure 1). The contralateral facial nerve and other cranial nerves were spared. The ear, throat and nose examinations were normal.

Contrast-enhanced magnetic resonance imaging (MRI) scan showed a well-defined lobulated lesion in the left stylomastoid foramen with extension into the left parotid gland (intraparotid involvement and left carotid space, measuring 2.8 cm (AP) x 4.7 cm (W) x 3.2 cm (CC). It has cystic degeneration within the parotid gland, which displaced the gland laterally, and common carotid artery and internal jugular vein anteromedially (Figure 2). There was no intracranial extension. Fine needle aspiration for cytology (FNAC) revealed sheets of spindle cells in hypercellular and hypocellular areas with some of the cells exhibit palisade pattern forming a vague Verocay bodies. S100 protein immunochemistry staining showed strongly positive result, which was consistent with schwannoma.

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All branches of facial nerve (zygomatic, temporal, buccal, marginal mandibular and cervical) were identified however unable to demonstrate any nerve activity using nerve stimulator and no muscle twitching was detected. The decision to proceed for total excision of the tumor was made after discussion with the Reconstructive Surgery team intraoperatively. The mass was excised and revealed it was arising from facial nerve trunk until the stylomastoid foramen (Figure 3). The histopathological examination confirmed it as a schwannoma. There was no improvement of facial nerve function noted until sixth month post-operative visit instead regular physiotherapy. The patient was planned for facial reanimation later however patient defaulted follow up.

Discussion

Facial nerve schwannomas can occur at any point along the nerve from the cerebellopontine angle to its peripheral branches in the face. Extratemporal part of facial nerve rarely present as schwannoma, and if it is usually an asymptomatic parotid mass.[3,4] Preoperative diagnosis of this tumor in the parotid gland is generally difficult because of the low frequency of the disease and few typical signs associated with it.[5,6] In our case, the patient presented with complete facial nerve paralysis in one-year duration, which is different from other case reports, whereby no facial nerve paralysis on first presentation to clinic. The reason of delay in seeking treatment was due to her personal matter as she was a full-time housewife and needed to take care of six children at home. She also had pain and numbness over the parotid and facial nerves areas, which indicates the tumor affecting the trigeminal nerve. Otherwise no association with other cranial nerves symptoms.

MRI is the best diagnostic approach for these tumors,[7] as it provides the highest degree of soft-tissue resolution and is not obstructed by bone artifact from the skull base. It usually demonstrates homogenous enhancement with larger lesions with cystic degeneration seen intramurally. Shimizu et al described MRI findings in five facial nerve schwannomas. They suggest that the presence of a sign and growth toward the facial canal are distinguishing features of this tumor.[8] However, the appearance of the nerve sheath tumors is often difficult to differentiate between schwannoma and neurofibroma. Furthermore, facial nerve schwannomas cannot be differentiated from schwannomas derived from the vestibulocochlear nerve, when the lesions reach a certain size and fill out the entire internal auditory canal.[9]

FNAC is controversial, inclusive results are not uncommon.[10] However, it is still our preference for screening tool because it is readily available and minimally invasive. Histopathological findings showed a distinctive cylindrical structures and palisading of nuclei (Antoni A) and loose stroma fibres cells (Antoni B) which was confirmed schwannoma.[11] Other typical features include haemorrhage and cystic degeneration. In our case, patient underwent FNAC and the result was convincing of schwannoma.

Treatment of nerve sheath tumours is always a complete surgical excision of tumor with preservation nerve function. Intracapsular enucleation is one of the method to preserve nerve fibres function up to 30% when compare to tumour resection with primary anastomosis.[12] Total removal of tumor can be accomplished with sacrifice the involved fascicles. Facial nerve deficit after complete tumor excision can be resolved by nerve grafting.[13] The best obtainable recovery of facial nerve function is House-Brackmann grade III to IV.[14] We used preauricular approach for tumor excision. The important anatomic point is the schwannomas invade the nerve fascicles at the proximal pole. It is technically difficult to preserve the integrity of the nerve trunk, where the involved segment needs to be resected and cable grafting should be performed. In our case, after discuss with Reconstructive Surgery team, intraoperative nerve function was assessed using nerve stimulator revealed nerve atrophy and nonviable, and also unable to identify the normal facial nerve trunk, therefore no immediate nerve anastomosis was performed. The team decided for facial reanimation later.

The prognosis of schwannomas usually is good and regional recurrence is rare. However, close follow-up is recommended to ensure early detection of recurrence. In our case, the permanent facial nerve paralysis should be treated with facial reanimation if patient agreeable. The patient eventually defaulted all the subsequent appointments with her facial asymmetry persist.

Conclusion

Intraparotid facial nerve schwannoma is a rare benign neoplasm in the head and neck region. With the advancement of diagnostic tools such as MRI and histopathological study, the diagnostic dilemma is greatly minimized nowadays. The ultimate treatment for this tumour is still surgical resection with preservation of the nerve functions. However, in our case the best plan is facial reanimation in order to prevent further complications cause by paralysis of extratemporal branches of facial nerve.

Figure 1: The left facial nerve function was identified as House-Brackmann VI (A) with sparing of contralateral facial nerve. A single firm, mobile, well-defined margin and non-tender mass over the left infra-auricular region (B).

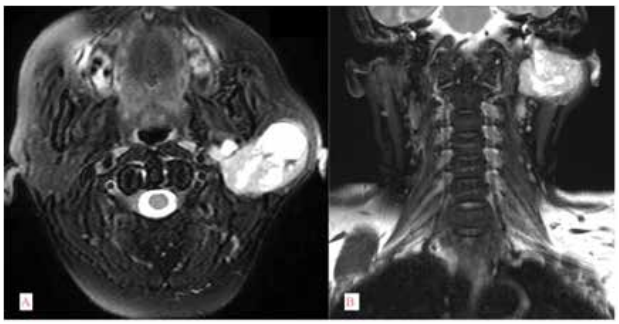

Figure 2: The axial (A) & coronal (B) view of contrast-enhanced MRI scan showed a well defined lobulated lesion in the left stylomastoid foramen with extension into the left parotid gland. The parotid gland was displaced laterally, and common carotid artery and internal jugular vein displaced anteromedially. There were no intracranial extension.

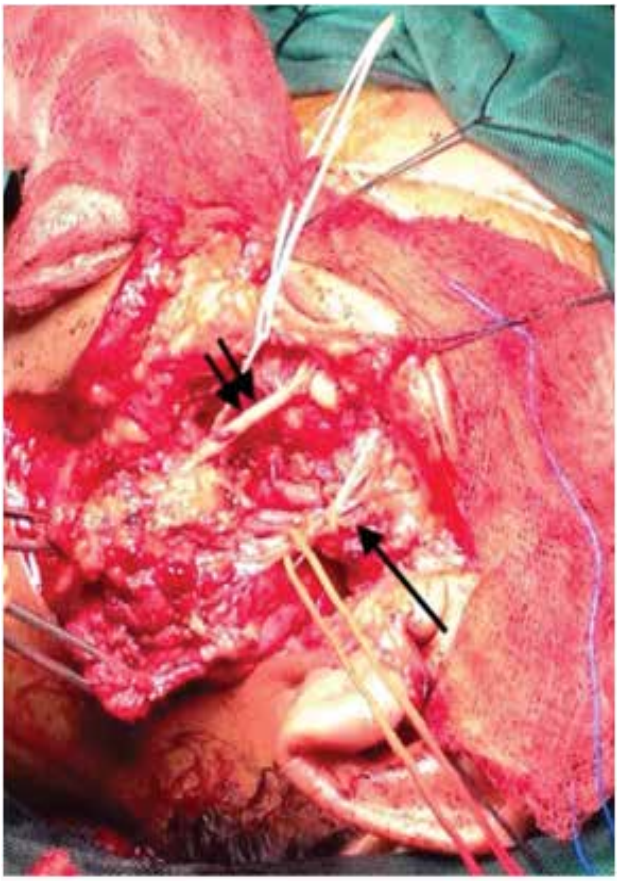

Figure 3: The mass is arising from facial nerve trunk until the stylomastoid foramen with zygomatico-temporal (single arrow) and buccal (double arrow) branch were identified. No neural activity was detected using nerve stimulator intraoperatively.

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