# **Case Report**

DOI: http://dx.doi.org/10.18203/2349-2902.isj20164303

# Schwanomma of the parotid gland and its presentation

C. P. Madhu\*, Swetha Venugopal

Department of Surgery, JSS Medical College, Mysore, Karnataka, India

**Received:** 09 November 2016 **Revised:** 15 November 2016 **Accepted:** 22 November 2016

\*Correspondence: Dr. C. P. Madhu,

E-mail: drcpmadhu@gmail.com

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## **ABSTRACT**

Our objective is to present a very rare clinical case of intraparotid facial nerve schwannoma that clinically presented as an asymptomatic parotid tumor, cystic neoplasm of the left parotid gland and was diagnosed after histopathology as schwanomma of the facial nerve. Another purpose is to discuss diagnostic possibilities, appropriate planning for the management and predictive outcomes of surgical management. A clinical case of a patient with an asymptomatic parotid mass diagnosed as a facial nerve schwannomaintraoperatively is presented. The patient's presentation and the diagnostic procedures, surgery and the follow up procedures are discussed. Intraparotid facial nerve schwannoma is an extremely rare entity and rarely diagnosed preoperatively. Management of intraparotid facial nerve schwannomas (IFNS) is very challenging because the diagnosis is often made intraoperatively and in most cases resection can lead to severe facial nerve (FN) paralysis with significant aesthetic consequences. Imaging studies and fine-needle aspiration cytology are not always helpful in preoperative diagnosis.

Keywords: Fine-needle aspiration cytology, Parotid, Schwannoma

# INTRODUCTION

The most common tumors of the parotid, such as pleomorphic adenoma and Warthin tumor, are benign, easily diagnosed and are therefore easily treated. These tumors represent the vast majority of parotid tumors; however, other tumors, such as schwannoma, are rarely encountered.

Schwannomas (or neurilemmomas) are benign peripheral nerve sheath tumors that may arise at any point in the peripheral nervous system, and are rarely seen in the parotid gland. Nine percent of schwannomas arising from the facial nerve arise from the intraparotidportion; overall, schwannomas account for 0.5% to 1.2% of all parotid gland tumors. To date, approximately 80 intraparotidschwannomas have been reported in the literature worldwide. Most published data have been written from a surgical perspective.

### **CASE REPORT**

A 65-year-old female presented with a painless, gradually progressive swelling in left preauricular region for 3 years. Patient denied any facial weakness, twitching or pain. On examination, there was a well-defined  $4 \text{ cm} \times 3$ cm, firm, nontender, mobile swelling in right parotid region. Facial nerve function was normal. Usg scan showed a well circumsied cystic lesion in the parotid region probably cystic lesion of parotid? Warthims of left lobe of the parotid gland. FNAC was performed, and the cytology smears suggested of bening parotid lesion. Surgical excision of the tumor showed an encapsulated cystic lesion in between the deep and superficial lobe of the gland, the tumor measuring 3 cm×2 cm×2 cm (Figure 1). Cut surface was whitish with focal areas of hemorrhage. Microscopy revealed a well-encapsulated tumor having hypercellular (Antoni A) and hypocellular (Antoni B) areas composed of spindle-shaped cells

having elongated nuclei with pointed ends and eosinophilic cytoplasm (Figure 2). Focal nuclear palisading was seen. Final histopathologic diagnosis of schwannoma was made. Post-operatively the patient was asymptomatic without any features of nerve palsy.

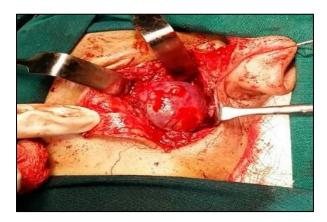


Figure 1: Intra-operative picture of the schwanomma.

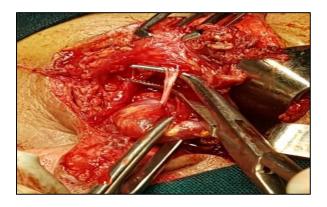


Figure 2: Intra-operative photograph of facial nerve and its proximity to the tumour.

The cells that build the tumor were fusiform nucleated spindle cells and had eosinophiliccytoplasms with ill-defined boundaries. In these cells there was palisade forming hypercellular areas and wavy structure of the fibers in the stroma in some places.

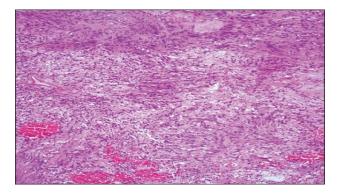


Figure 3: Histopathology section of schwannoma of the parotid gland showing bundles of spindle cells with cellular and hypocellular areas.

#### **DISCUSSION**

Schwannomas were first reported by Virchow in 1908 and arise from the neural sheath of the peripheral sensory, motor, sympathetic, and cranial nerves. 4,5 Schwannomas are encapsulated, soft and white, yellow, or pink tumors. They occasionally feature areas of calcification and/or cystic degeneration. Their capsule is continuous with the epineurium, the most external nerve sheath. Microscopically the diagnosis is confirmed by histopathologic evaluation. Histologically, two types of tissues are seen: the Antonia area is characterized by the presence of elongated and spindle-shaped Schwann's cells, and their nuclei are aligned in a palisading pattern (Verocay bodies). The hypo cellular Antoni B area has a varying degree of cell pleomorphism; irregular cell types are scattered in loose connective tissue, and there is no definable palisading of tumor cell nuclei. Both Antoni areas are usually found in the same tumor, but their respective proportions vary. Nerve fibers are not part of the tumor because the mass arises from Schwann's sheath and pushes the nerve axons aside.<sup>6,7</sup> Immunostaining for S-100 is required to establish the neural origin of the tumor and smooth muscle actin (SMA) to rule out a leiomyoma.8

The difficulty in establishing a correct preoperative diagnosis has been pointed out by Conley and Janecka because this tumor is infrequent and generally unsuspected as preoperative facial nerve paresis is unusual. FNAC is frequently used preoperatively to evaluate the salivary gland lesions with reasonable sensitivity and specificity, ranging from 60-100% to 90-100%, respectively. Most of the parotid tumors have characteristic cytomorphologic features that aid indefinite preoperative diagnosis, however a few lesions, both benign and malignant, can cause problems in interpretation.

FNS are uncommon; approximately 25% and 40% of all schwannomas have occurred in the head and neck region. These tumors are most common tumors of facial nerve and can be either benign or malignant. The majority of FNS are intratemporal, with 9% of cases arising from the intraparotid portion. Caughey et al. had conducted a retrospective study over 38-year period, focusing on facial nerve schwannoma involving parotid gland. Out of a total of 3722 patients with schwannomas reviewed, only 29 were related to facial nerve. From this small group, only eight involved the parotid segment of the facial nerve.

Treatment of intraparotid FNS is surgical excision. Because preoperative diagnosis is impossible, much responsibility falls to the surgeon during the operation. Because in almost all cases no facial nerve palsy is detected preoperatively; even during surgery, it can be difficult to determine whether the tumor originated from the parotid gland or the facial nerve; half of the tumors originate from the main trunk of the facial nerve and that is why it is impossible to find main trunk. There are

strong adhesions between the tumor and the nerve and so in such cases surgery becomes quite difficult. As a result FNS are quite rare tumors and the preoperative diagnostic tests usually provide no valuable information. During management it seems important to behave conservatively because tumor rarely affects the facial nerve function and grows very slowly. Complete excision leads to complete cure.

Funding: No funding sources Conflict of interest: None declared Ethical approval: Not required

#### **REFERENCES**

- 1. Balle VH, Greisen O. Neurilemmoma of the facial nerve presenting as parotid tumors. Ann Otol Rhinol Laryngol. 1984;93(1):70-2.
- 2. Sneige N, Batsakis JG. Primary tumors of the facial (extracranial) nerve. Ann Otol Rhinol Laryngol. 1991;100(7):604-6.
- 3. Marchioni D, Ciufelli AM, Presutti L. Intraparotid facial nerve schwannoma: literature review and classification proposal. J Laryngol Otol. 2007;121(8):707-12.
- 4. Gore DO, Rankow R, Hanford JM. Parapharyngeal neurilemmoma surgery. Gynecol Obst. 1956;103(2):193-201.
- Parisier SC, Edelstein DR, Levenson MJ. Facial nerve neuromas in otolaryngology. Paparella MM, Shumrick DA, Gluckman JL, Meyerhoff WL. W.B. Saunders Company, Philadelphia, USA;1991:1465-1466.

- 6. Kyriakos M. Neurogenous tumors in Comprehensive management of head and neck tumors. Thawley SE, Panje WR. W. B. Saunders, Philadelphia, USA. 1987:1253-61.
- 7. Johnson JR, Myers EN, Curtin HD. Tumors of the parapharyngeal space in Cancer of the Head and Neck, Myers EN, Suen JY. Churchill Livingstone; New York, USA. 1989:669-90.
- 8. Verma RK, Prasad RK, Bharti S, Panda NK. Intraparotid facial nerve schwannoma involving the deep lobe: a case report. Egyptian J Ear, Nose, Throat Allied Sci. 2011;12(3):163-6.
- 9. Layfield LJ, Tan P, Glasgow BJ. Fine-needle aspiration of salivary gland lesions. Comparison with frozen sections and histologic findings. Arch Pathol Lab Med. 1987;111:346-53.
- 10. Conley J, Janecka I. Neurilemmoma of the facial nerve. Plast Reconstr Surg. 1973;52:55-60.
- 11. Forton GJE, Moeneclaey JJM, Offeciers JE. Facial nerve neuroma. Report of two cases including histological and radiological imaging studies. European Archives Otorhino Laryngol. 1994;251(1):17-22.
- 12. Caughey RJ, May M, Schaitkin BM. Intraparotid facial nerve schwannoma: diagnosis and management. Otolaryngol Head Neck Surg. 2004;130(5):586-92.

**Cite this article as:** Madhu CP, Venugopal S. Schwanomma of the parotid gland and its presentation. Int Surg J 2017;4:411-3.