

INTRAPAROTID SCHWANNOMA: A CASE SERIES FROM A TERTIARY CARE CENTRE OF NORTH EAST INDIA

Pathology

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ABSTRACT

Background: Schwannoma is a benign, encapsulated tumor arising from the Schwann cells of myelinated central, autonomic and peripheral nerves. Schwannomas arising from the facial nerve are rare, mostly intra-temporal, with only 9% extra-temporal lesions, presenting as parotid swellings with non-specific symptoms, making the pre-operative diagnosis difficult and challenging. **Methods:** In this case series, three cases of parotid masses that underwent fine needle aspiration cytology during the last two years in the department of Pathology, Gauhati Medical College and Hospital, Guwahati were analyzed with respect to age, sex, site, clinical, radiological and cyto-morphological findings. **Results:** Out of the three cases, all diagnosed as Intraparotid Schwannoma based on FNAC, one patient was male and two were females. Two cases involved the right parotid gland and one involved the left parotid gland. Age range of the patients was 10-46 years. All the three cases presented as slow growing, painless parotid masses without symptoms of facial nerve involvement. Radiologically, these cases were diagnosed as pleomorphic adenoma. **Conclusion:** Few reported cases in literature, non-specific clinical symptoms and difficult radiological diagnosis makes Intraparotid Schwannomas a challenge for the pathologist.

KEYWORDS

Schwannoma, Parotid Mass, Cytology.

INTRODUCTION

- Schwannoma is a benign, encapsulated tumor arising from the Schwann cells of myelinated central, autonomic and peripheral nerves. It can arise in the parotid gland forming a primary salivary gland tumor, either from the facial nerve or from any other peripheral nerve running through the gland.¹ 25-45% of benign schwannomas can be seen in the head and neck region.² In approximately 10% of cases, it is seen to solely arise from the intraparotid portion of the facial nerve,³ representing 0.2-1.5% of all schwannomas.⁴
- These are classically seen in the 5th to 6th decade of life with a history of slowly growing, painless, mobile parotid masses present for a variable number of months to years.⁵ There is no clear sex predilection.
- It is difficult to differentiate it radiologically from Pleomorphic Adenoma.
- Though Fine Needle Aspiration Cytology is a common and appropriate aid in pre-operative diagnosis,⁶ histopathology still remains the gold standard for confirmation.

MATERIALS AND METHODS

- Type of study:** Hospital based cross-sectional study
- Study area:** Gauhati Medical College and Hospital, Guwahati, Assam
- Study period:** June, 2020 to June, 2021
- All the three cases of parotid masses underwent fine needle aspiration in the cytology section of the department of Pathology, Gauhati Medical College and Hospital from June, 2020 to June, 2021.
- The smears were air-dried, stained with May Grunwald Giemsa and Papanicolaou stains, and viewed under light microscope.
- The three cases are analyzed with respect to age, sex, side involved, clinical, radiological and FNA findings.
- The cases were followed up for histopathological confirmation.

Case reports

CASE 1

- A 28 years old male presented with a slow growing, progressive right sided parotid mass for last 1 year, with slight pain on chewing and opening of mouth.
- On local examination, the swelling was in the right parotid region of size (2x1.5) cm², firm in consistency, mildly tender, slightly mobile with normal overlying skin and local temperature.
- On USG of parotid region, a fairly well defined heterogeneously hypoechoic lesion measuring (3.3x2.6) cm with internal cystic spaces involving right parotid was noted. D/D- Pleomorphic adenoma.
- On FNA, blood mixed material was obtained. 5 air dried smears were prepared and stained with MGG stain. Under light

microscope, cellular FNA smears showed multiple clusters of spindle cells with plump round to oval nuclei, inconspicuous nucleoli, moderate amount of cytoplasm. Cells showing nuclear palisading, overlapping and crowding at places were noted. Background showed myxoid and hyalinized stroma and foamy histiocytes. Impression: Intraparotid Schwannoma.

- The diagnosis was confirmed by histopathological examination.

CASE 2

- A 10 years female presented with a gradually progressive, painless swelling over left parotid region for 2 years.
- On local examination, a left sided parotid swelling of size (4x4) cm², soft in consistency, mobile, non-tender with normal local temperature and overlying skin.
- Radiologically, it was diagnosed as Pleomorphic Adenoma.
- On FNA, blood mixed mucoid material was obtained. Air dried smears were prepared, stained with MGG stain and viewed under light microscope. Cellular FNA smears showed multiple clusters of spindle cells with plump to elongated pointed nuclei, scanty to moderate cytoplasm along with some fish hook type cells. Vague nuclear palisading was noted. Background showed occasional basaloid cells and myxoid stroma. Impression: Neurogenic tumor/ Schwannoma.
- Histopathological examination of the same was consistent with the diagnosis of Schwannoma.

CASE 3

- A 25 years old female presented with a gradually progressive, painless swelling over right parotid region for 1 year.
- On local examination, a right sided parotid swelling of size (5x4.5) cm², soft in consistency, mobile, non-tender with normal local temperature and overlying skin was noted.
- On USG of the same, differential diagnosis of Pleomorphic Adenoma was given.
- On FNA, 1.5 ml of blood mixed material was aspirated. Smears showed clusters of benign spindle cells having elongated nuclei, bland nuclear chromatin and moderate amount of cytoplasm. Background showed myxoid material and cyst macrophages. Impression: Benign spindle cell lesion (Intraparotid Schwannoma).
- This diagnosis was confirmed by histopathological examination.

RESULTS:

- In this case series, the age range of the patients was 10-28 years. Mean age of presentation was 21 years.
- Male to female ratio was 1:2.
- Out of the three cases, two were on the right and one was on the left side.
- All the three cases were diagnosed as Pleomorphic Adenoma radiologically.

5. On FNA of all the three cases showed clusters of benign spindle cells with plump oval to pointed nuclei, inconspicuous nucleoli and scanty to moderate amount of cytoplasm. Background shows myxoid stroma.

TABLE 1: COMPLETE DATA OF THE THREE CASES OF INTRAPAROTID SCHWANNOMAS

SLNO	AGE	SEX	SIDE	CLINICAL HISTORY	LOCAL EXAMINATION FINDINGS	RADIOLOGICAL FINDINGS	FNA FINDINGS	HPE FINDINGS
1	28 years	Male	Right	a) Swelling at the angle of jaw for 1 year b) Pain on chewing and opening of mouth	Site: right parotid region Size: (2x1.5) cm ² Consistency: Firm Tenderness: mildly tender Mobility: slightly mobile Temperature: normal Overlying skin: normal	Fairly well defined heterogeneously hypoechoic lesion with internal cystic spaces involving right parotid. D/D- Pleomorphic adenoma	Multiple clusters of spindle cells with plump round to oval nuclei, inconspicuous nucleoli, moderate amount of cytoplasm. Cells showing nuclear palisading, overlapping and crowding at places. Background shows myxoid and hyalinized stroma and foamy histiocytes. Impression: Intraparotid Schwannoma	Schwannoma
2	10 years	Female	Left	Gradually progressive, painless swelling over right parotid region for 2 years.	Site: left parotid region Size: (4x4) cm ² Consistency: soft Mobility: mobile Tenderness: absent Temperature: normal Overlying skin: normal	Pleomorphic adenoma	Multiple clusters of spindle cells with plump to elongated pointed nuclei, scanty to moderate cytoplasm along with some fish hook type cells Vague nuclear palisading noted. Background shows occasional basaloid cells and myxoid stroma. Impression: Neurogenic tumor/ Schwannoma.	Schwannoma
3	25 years	Female	Right	Painless, gradually progressive mass over left parotid for last 1 year	Site: right parotid region Size: (5x4.5) cm ² Consistency: soft Mobility: mobile Tenderness: absent Temperature: normal Overlying skin: normal	Pleomorphic adenoma	Clusters of benign spindle cells having elongated nuclei, bland nuclear chromatin and moderate amount of cytoplasm. Background shows myxoid material and cyst macrophages. Impression: Benign spindle cell lesion (Intraparotid Schwannoma).	Schwannoma

6.Histopathologically, all the cases were confirmed as Schwannoma.

PHOTOGRAPHS



Fig 1: image showing the right parotid swelling

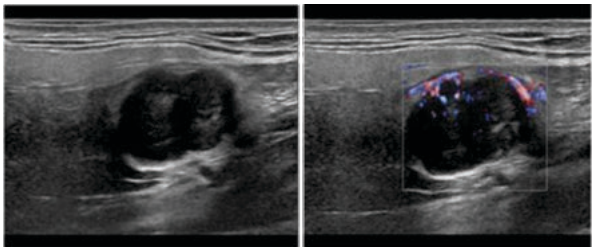


Fig 2: USG picture of the right parotid swelling, a-with Doppler b-without Doppler

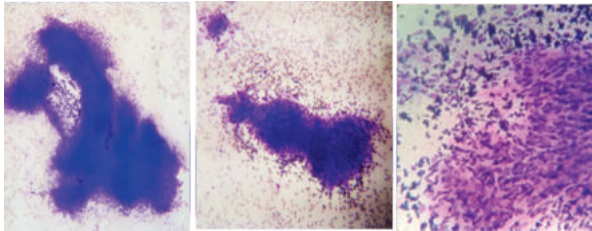


Fig 3: A,B-low power (10x10) views and C-high power(10x40) views of Intraparotid Schwannoma (MGG stain)

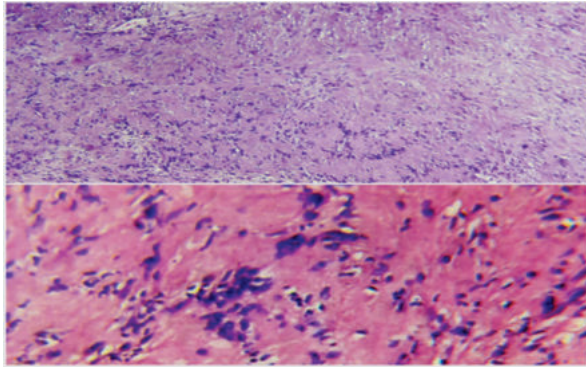


Fig 4: Low power(10x10) and high power(10x40) views of Intraparotid Schwannoma (H&E stain)

DISCUSSION:

- Intraglandular nerve schwannoma has been reported in the major salivary glands (mostly the parotid gland) and even the sublingual glands, as slow growing asymptomatic swellings, with sporadic cases of neural involvement.⁷
- It was first reported by Ibarz in 1927.
- It can occur at any age without any gender bias.
- Prevalence of such lesions reported in literature is low, so proper diagnosis and treatment is challenging.
- Many studies have questioned the diagnostic efficacy of FNAC before surgery, however the study done by Inohara et al⁸ concluded 80% and 62% accuracy for benign and malignant parotid lesions respectively.
- Most of these lesions are asymptomatic, painless swellings, making clinical and radiological diagnosis difficult.
- FNA shows characteristic spindle shaped neoplastic cells forming Verocay bodies with nuclear palisading within a hypocellular stromal matrix.
- Histopathological Examination is confirmatory, characterized by stream of elongated cells, with cell thick areas called Antoni A and myxoid, loosely placed cell areas called Antoni B.
- S100 staining helps to differentiate it from Neurofibroma.

CONCLUSION:

So, from this study it can be concluded that FNAC can be diagnostic for intraparotid facial nerve schwannoma if done properly. A larger sample size can be helpful to draw a definite conclusion.

- **Conflict of Interest:** Nil.
- **Funding sources:** Nil.

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