

Case Report

Schwannoma at an unusual locations: Report of two cases and review of literature

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Abstract

Schwannomas are benign tumors of Schwann cells which are commonly seen at head, neck regions, and extremities. Schwannomas at rare locations such as breast and parotid are very uncommon. Here, we present two case reports of breast schwannoma and parotid schwannoma. In first case, 24-year-old female presented with left breast lump which was clinically diagnosed as fibroadenoma and lumpectomy was done. In second case, 50-year-old female presented with left parotid swelling associated with mild pain. Pleomorphic adenoma was suspected clinically and lesion was excised. Histologically, both cases showed hypocellular and hypercellular areas suggestive of schwannoma. Further, the diagnosis was confirmed with S-100 immunohistochemistry marker. Thus, schwannoma should be considered as one of the differential diagnosis for spindle cell lesion in breast and parotid swelling.

Keywords: Breast, parotid, spindle cell lesion

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INTRODUCTION

Schwannomas arise from the Schwann cells which are derived from the neural crest cells.^[1] The most common sites of presentation are head and neck regions, nerves of upper and lower extremities, mediastinum, retroperitoneum, and cerebellopontine angle. These benign tumors are slow growing and commonly affects younger age group.^[1,2] Schwannomas of breast and parotid gland are rare and account for only 2.6%^[3] and 0.2%–1.5%,^[3] respectively. Schwannomas are often misdiagnosed because of their rare location.

CASE REPORTS

Case 1

A 24-year-old female presented with a lump in the left breast since 1 year. On examination, a lump was noted in the upper outer quadrant, which was painless and freely mobile. There was no evidence of axillary lymphadenopathy. Fine-needle aspiration cytology was done at other center and details were not available. Clinical diagnosis of fibroadenoma was made and excised specimen was sent for histopathological examination. On gross examination, the mass was well encapsulated and was measuring 2 cm × 2 cm. Cut section was solid, pale white, and homogeneous.

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Sections were given from representative areas and stained with H and E stain.

Case 2

A 50-year-old female presented with left parotid swelling since 6 months and it was associated with mild pain. There was no history of fever or lymphadenopathy. Clinical diagnosis of pleomorphic adenoma was made. Lesion was excised and sent for histopathological examination. On gross examination, mass was 4 cm × 3 cm × 2 cm and was well encapsulated. Cut section showed solid, gray white appearance. Sections were given from representative areas and stained with H and E stain.

Microscopic examination of breast lump and parotid swelling showed a well-encapsulated tumor tissue which was arranged in sheets and interlacing fascicles [Figure 1]. Individual tumor cells were spindle-shaped with spindle-shaped nucleus and moderate amount of eosinophilic cytoplasm. Few cells were arranged in palisading pattern with central eosinophilic acellular material suggestive of verocay bodies [Figure 2]. Hypocellular areas with loose stroma were noted. Also noted myxoid stroma, cystic degeneration, hemosiderin laden macrophages along with perivascular hyalinized blood vessels and foamy macrophages in sections of parotid swelling. Based on these findings, the diagnosis of schwannoma of breast and ancient schwannoma of parotid gland was given.

Immunohistochemistry (IHC) was done in both cases and it showed diffuse cytoplasmic positivity for S-100 [Figure 3]. Based on IHC findings, the diagnosis of schwannoma of breast lump and parotid swelling was confirmed.

DISCUSSION

Schwannomas are encapsulated, solitary tumors arising from the peripheral nerves. They are slow growing tumors and usually seen in the third decade of life.^[4] Schwannomas are seen arising from Schwann cells and are located in any part of the body but most favorable location being head and neck region accounting for 45%.^[5] Schwannomas of breast and parotid glands are very rare.

The size of breast schwannoma ranges from few millimeters to 11 cm and most commonly located in upper outer quadrant.^[2] Patients present with palpable lump in breast with or without pain. Ultrasound shows well-defined hypoechoic lesions without microcalcifications.^[6] They show well-circumscribed opacities on mammography. On mammography and ultrasound, breast schwannoma do not

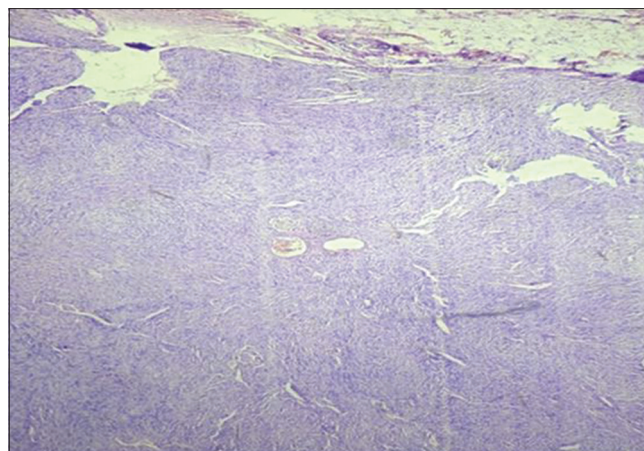


Figure 1: Microphotograph shown an encapsulated tumor tissue comprised of spindle shaped cells in collagenous stroma (H and E, ×100)

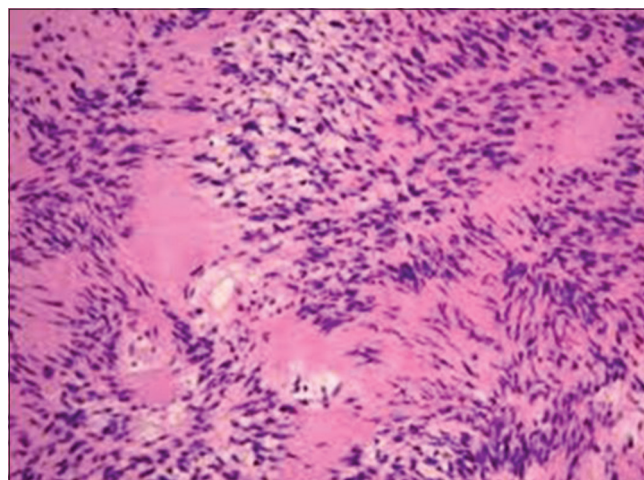


Figure 2: Microphotograph shows Antoni A areas along with verocay bodies and peripheral palisading of the cells (H and E, ×400)

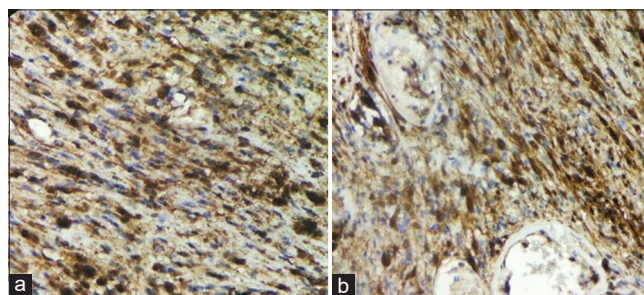


Figure 3: Immunohistochemistry showing diffuse cytoplasmic positivity for S100 in breast (a) and parotid (b) schwannoma

show any worrisome features, but imaging alone cannot aid in the diagnosis. In the current study, breast schwannoma case was presented as painless lump in the left breast which was well defined and mobile. Fine-needle aspiration cytology was done at other center and details were not available. So with the clinical diagnosis of fibroadenoma, surgical excision was done.

On microscopic examination, schwannomas of breast are mistaken for other benign breast diseases such as phyllodes tumor, fibromatosis, neurofibroma, and in some instances for metaplastic carcinoma. Phyllodes tumor shows stromal hypercellularity in the form of stromal cells which can be mistaken as Schwann cells. However, there is the absence of Antoni A and Antoni B areas. Fibromatosis consists of infiltrative growth by fibroblasts and myofibroblasts which are separated by collagen. Neurofibromas are comprised of spindle cells which are arranged in interlacing bundles admixed with myxoid stroma. In some instances, schwannoma should be differentiated from metaplastic carcinoma which consists of spindle cells arranged in storiform pattern within the fibrocollagenous stroma.^[5,7,8]

Schwannoma in parotid gland arises from facial nerve and its branches. Clinically, the patient presents with painless mass in the parotid region which is always mistaken for pleomorphic adenoma. Imaging studies remains inconclusive. Fine-needle aspiration cytology diagnosis sometimes misleads to arrive at a diagnosis as pleomorphic adenoma.^[9] In our case, parotid schwannoma case was presented with left parotid swelling with mild pain. Clinical diagnosis of pleomorphic adenoma was made.

In indexed cases, on histology, both tumors showed Antoni A and Antoni B areas. Antoni A areas were hypercellular areas with compactly arranged spindle-shaped cells with palisading and indistinct cell borders. Antoni B areas were hypocellular with loose stroma and myxoid change. On IHC, parotid and breast schwannomas showed diffuse positivity for S 100 which lead to further confirmation of the diagnosis.

In clinical practice, breast schwannomas are considered BIRADS 4A lesion, i.e., the lesion with low suspicion for malignancy.^[7,9,10] Complete excision of the lesion is the treatment of choice.^[7,8] Postoperative follow-up for 1 year revealed no evidence of any recurrence or complication in both cases.

CONCLUSION

Schwannomas are relatively rare in breast and parotid

region. Due to rare lesion and lack of awareness of schwannoma at unusual site, it may lead to difficulty in preoperative diagnosis of schwannoma. These can be mistaken for other spindle cell tumors on cytology and histopathology. Schwannoma should be always considered as one of the differential diagnosis for spindle cell tumors of breast lesions and parotid swelling.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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