



Case report

Right breast schwannoma in a male: A rare case report

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ABSTRACT

Introduction: Schwannoma are benign neoplasms of peripheral nerve sheath. They usually occur in the head, neck and the extremities. Breast is a rare location of Schwannoma.

Case presentation: Our case describes the occurrence of Schwannoma in the right breast, in a 60-year-old male, who has had a breast lump since the last 6 years. After ultrasonography (showed $3.4 \times 2.3 \times 2.0$ cm heterochoic mass in the upper outer quadrant of the right breast), and mammography (showed 2.5×3.2 cm sized high density mass in upper outer quadrant of right breast), an excisional biopsy was performed, and on histopathologic examination, the diagnosis of breast schwannoma was confirmed.

Discussion: Clinical and pathological features resemble that of other benign tumors. On ultrasonography they present a well-defined, solid, hypoechoic mass, with some degree of posterior acoustic enhancement. Diagnosis is usually based on histopathologic examination. Microscopically, it exhibits hypercellular antony A areas along with hypocellular antony B areas. Treatment is usually surgical excision.

Conclusion: Though Schwannomas in breast are rare, they must be considered as differential diagnoses in patients presenting with breast lumps.

1. Introduction

Schwannoma, also called neurilemmoma, neurinoma, or lemmocytoma, are the benign, slow growing neoplasms of the schwann cells of the peripheral nerve sheath [1,2]. These are slow growing tumors that generally affect the young people, and usually presents at third decade of life [3]. They can occur in any sites in the body, most frequent locations being head, neck and the extensor surface of extremities [2,4]. Breast is an extremely rare site for schwannomas [2].

We herein, report a case of schwannoma in the right breast in a 60 years old male patient. The case has been reported in line with SCARE 2020 criteria [5].

2. Case presentation

A 60 years male presented to our center with chief complaints of a right breast lump for 8 years, associated with pain for the last one year. According to the patient, it was initially the size of a pea and painless,

but now due to progressive increase in size, it is approximately the size of a lemon. The lump has been painful since last one year. On examination there was a firm, oval, mobile lump with a sharp margin, measuring 4×4 cm, located on the upper outer quadrant of the right breast.

On ultrasonography, there was a well-defined oval/lobulated heterochoic lesion of size $3.4 \times 2.3 \times 2.0$ cm in the upper outer quadrant of the right breast. There are multiple cystic areas seen within the lesion. Vascularity is seen in the periphery as well as within the lesion. Posterior acoustic enhancement was seen from the lesion.

Mammography revealed a bilaterally symmetrical breast, with non-distorted architecture, with approximately 2.5×3.2 cm sized high density mass with partially obscured, partially circumscribed margins seen in the upper outer quadrant of the right breast about 0.8 cm from the nipple. Hyperdense lymph nodes were seen in the right axilla. It was labeled as BI-RADS category 4b lesion. The findings are shown in mammogram photo in Fig. 1.

Excisional biopsy was performed. And upon histopathologic

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examination, on low power it shows multiple fragments showing a tumor with hypercellular Antoni A areas as well as hypocellular Antoni B areas. On high power the tumor cells were spindle shaped showing mild to moderate degree of pleomorphism. The nuclei were round, oval to elongated with no evidence of Verocay bodies. The histopathologic photograph is shown in Fig. 2. This gave the impression of breast schwannoma.

Our patient is well on follow-up after 6 months of treatment. There is no recurrence of the lesion, as seen on ultrasonography and mammography. The patient party is satisfied with the treatment they received.

3. Discussion

Among peripheral nerve sheath tumors, schwannomas are the common type, usually affecting the young adults in the third decade of life [2]. It was first described by Verocay in 1910 as a neoplasm of the Schwann cells of peripheral nerve sheath, whereas schwannoma in breast was first reported by Collins et al. [1] Schwannomas usually occurs as a solitary well-encapsulated masses, of size ranging from 0.7 to 11 cm, the mean and median size being 3.7 cm and 3 cm respectively [2]. Breast schwannomas account for only about 2–3 % of all the schwannomas, whereas only about 0.2 % of all the breast tumors are schwannomas [1].

Incidence of breast schwannomas in both male and female are almost equal. Though other breast tumors are mostly present in the upper outer quadrant, schwannomas in breast can affect all the quadrants equally [1]. Because of the rare occurrence of breast schwannomas, there are only few reports regarding the sonographic and the mammographic

findings of these tumors [6].

According to the previously reported cases, the clinical and radiologic appearance of these tumors are like that of benign tumors [7]. Mammographic findings of these tumors are described as non-specific, well-defined round or oval densities, though some cases of normal mammographic findings have also been reported [4,7]. In our case, mammography revealed a bilaterally symmetrical breast, with non-distorted architecture, with approximately 2.5×3.2 cm sized high density mass with partially obscured, partially circumscribed margins, in the upper outer quadrant of the right breast about 0.8 cm from the nipple. Ultrasonographic findings have been described to be well-defined and solid hypoechoic mass with a variable degree of posterior acoustic enhancement [4]. In our case, a well-defined oval/lobulated hetero-echoic lesion of size $3.4 \times 2.3 \times 2.0$ cm in the upper outer quadrant of the right breast, with multiple cystic areas within the lesion was seen.

Diagnosis of schwannomas are usually based on the histopathologic examination report. Microscopically they are spindle cell tumors with distinct antony A and antony B patterns in variable proportions. Antony A consists of monomorphic spindle shaped Schwann cells having poorly defined eosinophilic cytoplasm and basophilic nuclei, present within a collagenous stroma. The cells usually show nuclear palisading. The parallel arrangement of such palisades with intervening eosinophilic cytoplasmic processes is called as Verocay bodies [2,4]. Antony B are hypocellular areas with loose stroma and the myxoid change [2].

Schwannomas are rare in breast and usually mistaken for other kinds of benign to malignant masses like fibroadenomas, phyllodes tumor, mesenchymal tumors or even breast carcinomas. Though schwannomas

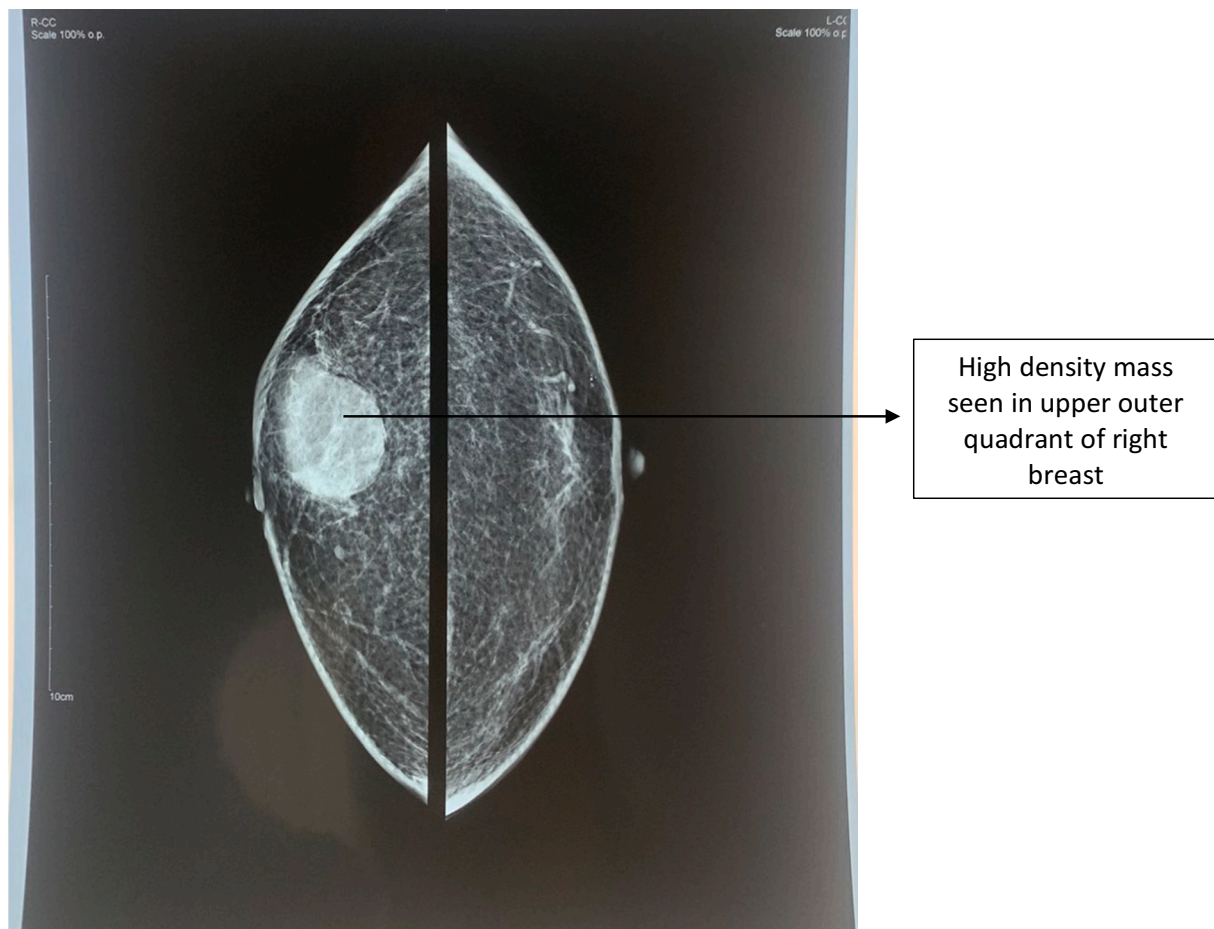


Fig. 1. Mammographic film photograph showing high density mass with partially obscured, partially circumscribed margins seen in the upper outer quadrant of the right breast.

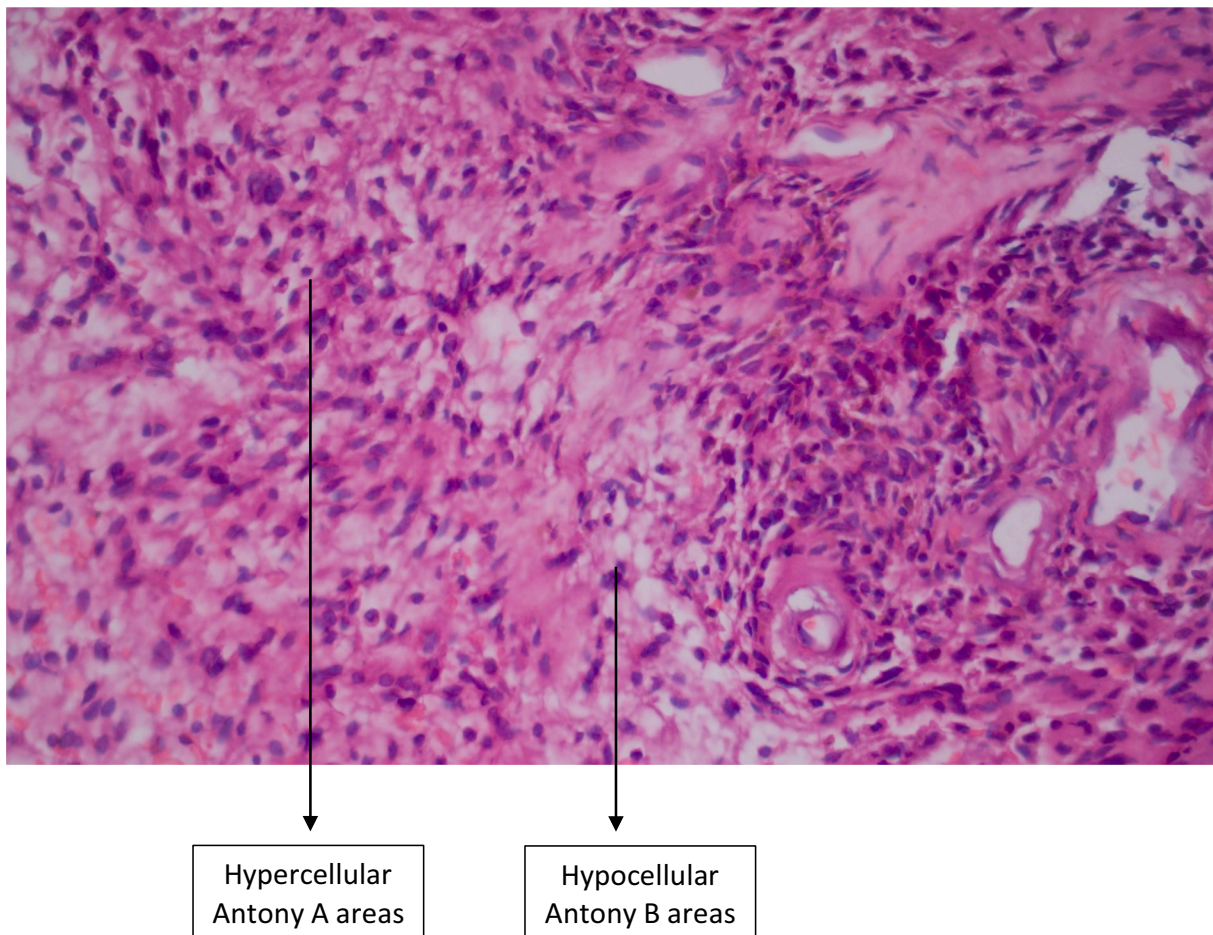


Fig. 2. Microscopic histopathologic photographs of biopsy specimen, showing hypercellular areas called “antony A” and hypocellular areas called “antony B”.

are benign, risk of malignancy within the schwannomas are higher in patients with neurofibromatosis [2,8].

Breast schwannomas, on Breast imaging – reporting and data system (BI-RADS) quality assuring tool, are considered BI-RADS 4a lesions with very low risk of malignant change [9]. Surgical excision is the treatment of choice of these masses and there is a good prognosis [4]. The most appropriate intervention for benign peripheral nerve sheath tumor is complete surgical removal with maximum preservation of residual neurologic function, whereas in malignant peripheral nerve sheath tumor require surgical resection with a sufficiently wide margin [10].

Recurrence of the lesion after surgical excision has not been reported in the literature till date [11].

4. Conclusion

Schwannomas in breasts are rare entity. They are usually mistaken for other lesions in the breast like fibroadenomas, phyllodes tumors, mesenchymal tumors or even breast carcinomas. They must be considered as differentials in patients presenting with breast lump.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Provenance and peer review

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Ethical approval

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Author contribution

Concept of study, and data collection: Navin Poudel, Kshitiz Acharya.

Writing of manuscript: Rupesh Kumar Yadav, Prabin Pathak, Navin Poudel.

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Declaration of competing interest

There are no conflicts of interest.

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