BREAST NEURILEMMOMA


Neurilemmoma is a benign neoplasm of Schwann cell origin, most frequently occurring in the extremities and the trunk and head regions. The breast is a very unusual site for this tumor. We report a case of breast neurilemmoma in a 27-year-old woman. The palpable mass was localized in the lower outer quadrant of the right breast. This intramammary tumor appeared ultrasonographically as a well-circumscribed, inhomogeneous solid mass. Microscopically, it had a pattern similar to that of neurilemmoma at other sites.

Keywords: Breast • neurilemmoma • Schwann cell

Introduction

Most primary tumors of the breast have an epithelial origin. Nonepithelial tumors arising from indigenous structures in the breast are rare. Neurilemmomas, tumors derived from the Schwann cells enveloping peripheral nerves, can be benign or malignant. Solitary benign or malignant Schwannomas can arise in any anatomical sites in the body, however neurilemmoma of the breast is rarely seen. A review of the international literature yielded 15 cases of mammary neurilemmoma. We report a case of benign solitary neurilemmoma presenting as a breast lump.

Case Report

A 27-year-old woman presented with painless breast palpable lump. The mass was in the lower outer quadrant of the right breast. Although, the mammography findings indicated that mass was benign, ultrasonography showed a well-circumscribed, inhomogeneous solid mass. At operation, there was a well-defined and an oval-shaped mass measuring 7 × 6 × 5 cm with a rim of fatty tissue. The external surface of the mass was gray-white and smooth. It was well circumscribed. The cut surface showed a partially encapsulated mass with minute hemorrhagic areas (Figures 1 and 2). The microscopic sections revealed a Schwannoma with a classic Antoni A and B pattern composed of woven spindle cells with occasional pallisading of the nuclei and formation of Verocay bodies (Figures 3 and 4). Immunohistochemical examination was positive for S-100 protein.
The Schwann cell is the supporting element of the peripheral nerve. These cells give rise to two types of tumors: the neurofibroma and the Schwannoma or neurilemmoma. Malignant Schwannoma is, in contrast to neurofibroma, an exceptionally rare event.\(^5\)

Schwannoma is one of the few truly encapsulated neoplasms of the human body and is almost always solitary. It’s most common locations are the flexor surfaces of the extremities, neck, mediastinum, retroperitoneum, and posterior spinal roots.\(^6\) The tumor can vary in size from a few millimeters to > 20 cm, but usually measures < 5 cm.\(^7\)

Microscopically, the neurilemmoma consists of two alternating components, an organized cellular component consisting of long bipolar cells that often form a pallasiding arrangement known as Verocay bodies (Antoni A area) and a loose hypocellular component (Antoni B area).\(^6\)

Immunohistochemically, the tumor cells exhibit intense and uniform staining for S-100 protein, which helps to distinguish it from the neurofibroma.\(^8\)

Benign Schwannomas most commonly occur between the ages of 20 – 50 years, with an almost equal male: female ratio. Although presenting signs and symptoms of solitary benign Schwannomas vary according to anatomical site, most patients present with a painless slowly growing mass. Breast Schwannoma can arise from the parasympathetic or sympathetic division of the autonomic nervous system present in the organ, and is rare. Only seventeen cases have been reported previously in literature, sixteen cases were benign Schwannoma. One case of solitary malignant Schwannoma has been reported.\(^1\) A case of two benign Schwannomas of the right breast in a 25-year-old woman is reported by Galant, including the use of fine-needle aspiration and biopsy diagnosis.\(^9\) The first case of neurilemmoma of male breast diagnosed by fine-needle aspiration cytology (FNAC) was reported in 1992.\(^10\)

Adequate treatment of solitary benign Schwannoma consists of simple enucleation of the encapsulated tumor. But recurrence after surgical excision has not been reported. Clinicians should be aware that this benign breast tumor might simulate a malignant neoplasm clinically as well as mammographically. A final diagnosis of Schwannoma was established by histopathological examination of the excised mass.

References

2. Rosen PP, Dershaw DD, Liberman L. Breast Pathology: Diagnosis by Needle Core Biopsy. Philadelphia:
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Lippincott Williams and Wilkins; 1999.

3 Gultekin SH, Cody HS 3rd. Schwannoma of the breast. 

4 Ashley DJB. Evan's Histological Appearances of Tumors. 

5 Rosai J. Ackerman’s Surgical Pathology. 8th ed. St. Louis: Mosby; 1996.

Retroperitoneal neurilemmoma: CT and MRI findings. 

7 Melato M, Bucconi S, Marus W, et al. The Schwannoma: 
an uncommon type of cystic lesion of the pancreas. 

8 Vander-Wall JD, Reid HA, Shaw JHF. Neurilemmoma 
appearing as a lump in the breast. Arch Pathol Lab Med. 
1982; 106: 539 – 540.

9 Galant C. Two Schwannomas presenting as lumps in the 

10 Mondal A, Choudhury PK. Cytological diagnosis of 
neurilemmomas of male breast by fine-needle aspiration. 