

Solitary Schwannoma of the Breast

- A Case Report -

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Schwannomas arise from the neural crest-derived Schwann cells. Their most common locations are the extremities, neck, mediastinum, retroperitoneum, and cerebellopontine angle. They have rarely been reported to occur in the breast. We herein report on a case of schwannoma of the breast in a 30-year-old woman. The ultrasonographic examination showed a well defined ovoid hypoechoic mass in the upper outer quadrant of her left breast. A presumptive diagnosis of fibroadenoma was made, and the mass was then removed. The histopathologic and immunohistochemical features confirmed the diagnosis of schwannoma of the breast.

Key Words : Schwannoma; Breast

Solitary schwannoma of the breast is a rare neoplasm and only 17 cases have been described in the literature.^{1,2} Histologically, the tumors showed the typical appearance of schwannoma that occur in other locations. The prognosis of the patient after a complete resection of the tumor is generally good. Malignant transformation of a schwannoma is extremely rare. We present here a rare case of solitary schwannoma of the breast, and this is the second case report in Korea.

CASE REPORT

A 30-year-old female presented with a palpable mass in the upper outer quadrant of her left breast. She had no previous history of any other major illness. The ultrasonographic examination showed a well defined ovoid hypoechoic mass (Fig. 1). The mass was surgically removed under the clinical impression of a fibroadenoma. On gross examination, the mass was relatively well encapsulated, and it measured 1.7 cm in the greatest dimension. The cut surface was myxoid and showed several foci of hemorrhage and cystic areas. On histological examination, two different patterns were present. The cellular areas were composed of

spindle cells that were often arranged in a palisade or organoid fashion (Fig. 2). In the cystic areas, the tumor cells were separated by abundant edematous fluid forming cystic spaces. Vascular hyalinization and collection of foamy macrophages were also noted. Mitoses were absent. On immunostaining, the tumor cells were diffusely positive for S-100 protein (Fig. 3) and vimentin, while they were negative for smooth muscle actin. The morphological findings were consistent with schwannoma. After the tumor excision, the patient has been free of symptoms and disease recurrence for five months.

DISCUSSION

Schwannoma of the breast is an uncommon neoplasm, with only 17 cases having been described in the world literature.^{1,2} There has been only one case report in Korea.³ These benign tumors arise from the neuroectodermal nerve sheath and they are usually solitary. Clinically, the breast schwannomas almost always occur in women whose age ranging from 18 to 76 years, but rare cases have been reported to occur in men.⁴ The main symptom of breast schwannoma is a palpable mass with or without pain.

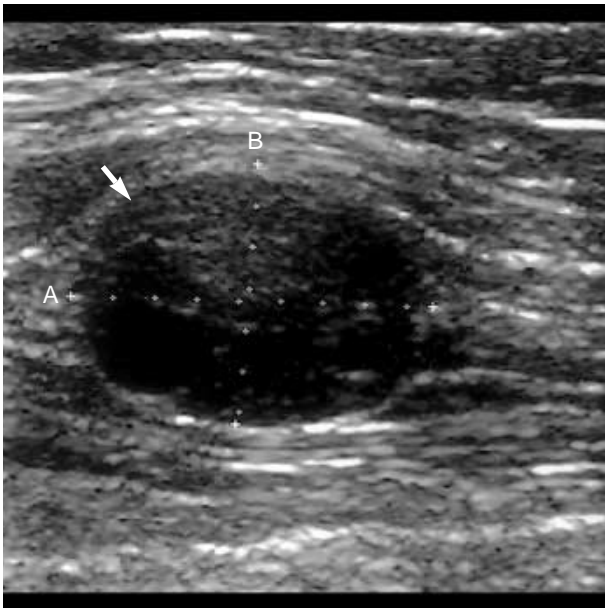


Fig. 1. Ultrasonographic finding of a well defined ovoid hypoechoic mass (arrow).

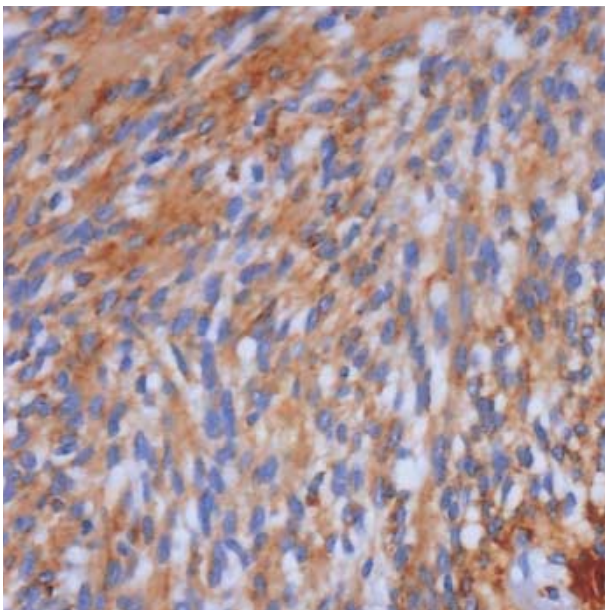


Fig. 3. The tumor cells show diffuse immunoreactivity for S-100 protein.

The diagnosis can be aided by mammography, ultrasonography, and fine-needle aspiration. However, diagnosis on the basis of aspiration cytology may be difficult.⁵ Thus, a final diagnosis is usually made by histopathological examination of the excised mass. Histologically, the tumors show the typical appearance of a schwannoma occurring in another location. They contain both Antoni type A and type B tissue patterns. The cellular areas (Antoni type A) consist of spindle cells with oval or elongated nuclei that

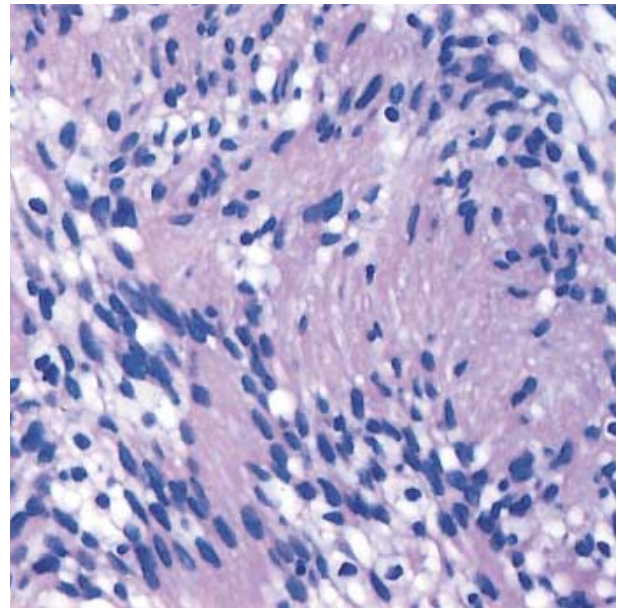


Fig. 2. The tumor is composed of spindle cells arranged in a palisading pattern in the cellular area.

have a palisade and wavy appearance. Verocay bodies are often seen in these areas. The hypocellular areas (Antoni type B) contain spindle shaped cells, small cells with hyperchromatic nuclei, and lipid-laden histiocytes. Collagen fibers and mast cells are present as well. Immunohistochemically, schwannomas are characterized by being diffusely positive for S-100 protein and alpha-synuclein, and by their pericellular immunolabeling for laminin and type IV collagen.⁶ On electron microscopy, the tumor cells have a continuous basal lamina, numerous extremely thin cytoplasmic processes, aggregates of intracytoplasmic microfibrils, peculiar intracytoplasmic lamellar bodies, and long-spacing collagens.⁷

The differential diagnosis of breast schwannoma includes other spindle cell tumors such as fibroadenoma, phyllodes tumor, fibromatosis, and metastatic carcinoma.

The treatment of choice is a complete excision. Recurrences after surgical excisions have not been reported and the malignant transformation is extremely rare, although a local recurrence can follow an incomplete resection.²

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