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Neurofibroma in Breast : A Case Report[1]

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Neurofibromas are common benign tumors and can originate from any nerve tissue in the body. A solitary neurofibroma in breast parenchyma has rarely been reported, however. We report a neurofibroma originating from breast parenchyma in a 61-year old woman. On mammography, the mass appeared as a well marginated and circumscribed mass, suggesting a benign tumor, and after excisional biopsy, was pathologically proven to be a neurofibroma.

Index Words : Breast neoplasms, radiography

Neurofibromas are common benign tumors which originate from peripheral nerves. Lesions may be either solitary and localized or multiple, in which case they are a partial manifestation of neurofibromatosis. A solitary neurofibroma usually arises in cutaneous nerves of the dermis or subcutis (1). Multiple cutaneous neurofibromas can be seen in the breasts of a patient with neurofibromatosis (2). To our knowledge, however, the presence of a solitary neurofibroma in breast parenchyma has not yet reported. We describe a case of neurofibroma in breast parenchyma.

Case Report

A 61-year-old woman presented with a mass in the superior portion of the left breast. On palpation, the mass was firm, movable and was not tender. Mammography showed a well-circumscribed, partially lobulated mass measuring 4×3×2.5 cm (Fig. 1A, B). It did not show microcalcifications. There were several benign calcifications with central low density in the parenchyma of the left breast suggesting fat necrosis. Although we believed the mass would be a benign lesion such as a fibroadenoma, the possibility of malignancy could not be excluded because a focal area of spiculated border was seen. Twelve and two years previously, a mass had been excised from the patient's left breast; on both occasions, the pathologic diagnosis was fibroadenoma. Under the clinical impression of phylloides tumor, simple mastectomy was performed. The mass was well-marginated, with a thin capsule and a yellowish-whitish cut surface (Fig. 1C). Under high power field of light microscopy, the mass was seen to have a profound fibrotic component and to consist of a loose pattern of interlacing bands of delicate spindle cells with elongated, slender, and some wavy nuclei (Fig. 1D). There was no proliferation of ducts. Although immunohistochemical staining for S-100 protein was negative, the pathologic diagnosis was neurofibroma. The patient had no other neurofibroma elsewhere in the body and no stigmata of neurofibromatosis. The diagnosis was therefore a solitary neurofibroma.

Discussion

Most solitary neurofibromas occur in young adults aged between 20 and 30, a slightly younger age than that of schwannoma patients. Solitary neurofibromas usually arise in cutaneous nerves of the dermis or subcutis and are distributed randomly over the surface of the body (1). Moreover, there is significant association with neurofibromatosis, which markedly increases the risk of malignant transformation. The presence of multiple neurofibromas is the characteristic of the peripheral form of neurofibromatosis. Solitary neurofibromas are slowly growing masses which are usually asymptomatic. Radiologically, neurofib-

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romas are usually well-defined and smooth, with low attenuation values on CT that may increase slightly following the administration of intravenous contrast material (2). Suh et al. reported that on T2-weighted MR images, seven of ten neurofibromas showed a target pattern of increased peripheral signal intensity and decreased central signal intensity (3). Kopans described multiple cutaneous neurofibromas in the breasts of a patient with neurofibromatosis; the tumors were all similar, well-circumscribed and scattered throughout the breast (4). In our case, the well-circumscribed margin of the mass was similar to that of multiple neurofibromas. However, the solitary lesion and parenchymal location of the mass were different from those of multiple neurofibromas.

Neurofibromas are benign fibroblastic neoplasms of peripheral nerves whose consistency and histologic appearance vary from myxoid to fibrous according to the differentiation of the neoplastic element. The bulk of the tumor volume consists of intracellular collagen

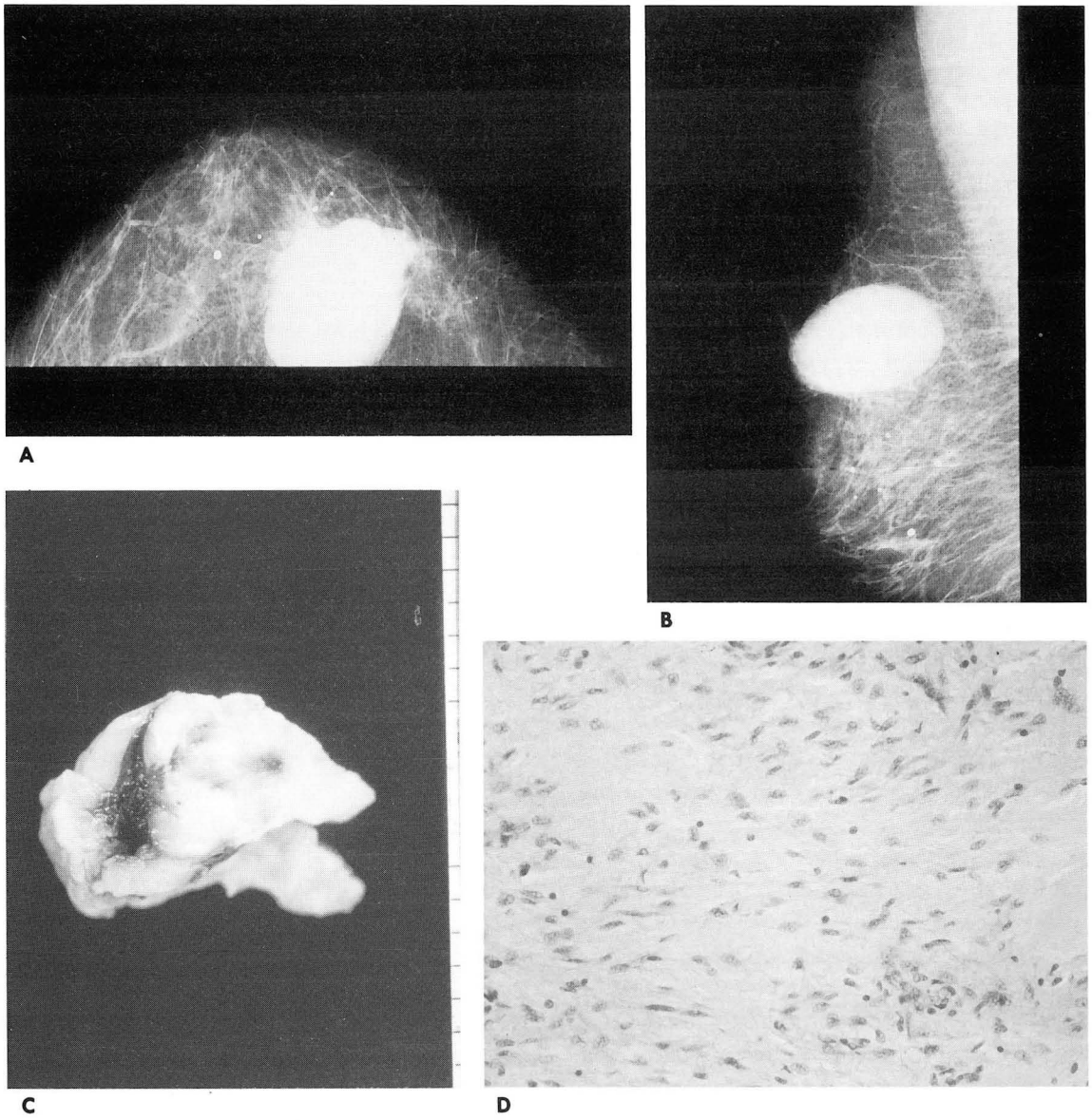

Fig. 1. A neurofibroma in 61-year-old woman.
A, B. Mammography shows a well-circumscribed, partially lobulated mass measuring 4×3×2.5cm at superior portion of the left breast. Incidentally, multiple benign calcifications are noted.
C. Cut surface of the mass shows well-circumscribed, partially lobulated border with a thin capsule and yellowish-white color.
D. Microscopic findings shows profound fibrotic component. The mass shows interlacing bands of spindle cells with elongated, slender, and some wavy nuclei and no proliferation of ducts under high power field (100×, H & E). The pathologic diagnosis is neurofibroma.

fibrils in a nonorganized myxoid matrix (5). Grossly, neurofibromas are white-to-gray and have a firm texture. They are often multiple, are usually but not always unencapsulated, and appear as fusiform enlargements on a distal nerve usually located in the dermis or subcutis. Microscopically, schwannomas are distinguished by the presence of areas of high and low cellularity, known as Antoni A and B tissue, respectively. In Antoni A tissue there may be foci of palisaded nuclei called Verocay bodies. Neurofibromas have none of these features and usually consist of a loose pattern of interlacing bands of delicate spindle cells with elongated, slender, and sometimes wavy nuclei (6). Fibroadenomas are sharply circumscribed, lobulated, rubbery masses; microscopically, they show a balanced proliferation of ducts and stroma (7).

In soft tissue outside the central nervous system, S-100 protein is normally found only in Schwann cells (8). Using the peroxidase-antiperoxidase immunohistochemical method, S-100 was also found in tumors derived from Schwann cells and melanocytes, including neurofibromas, neurilemmomas, granular cell myoblastomas, cutaneous nevi, and malignant melanomas (8). A test which is negative for S-100 protein does not, however, exclude the possibility of peripheral nerve tumors.

Neurofibromas can arise from any nerve tissue in the body. A solitary neurofibroma can arise from breast parenchyma. If on mammography, a well-circumscribed benign looking mass is seen, the possibility of a neurofibroma must be considered.

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유방의 신경섬유종:1예 보고[1]

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이 경 원 · 임 정 기 · 연 경 모

신경섬유종은 신체 모든 부위의 신경조직에서 생길 수 있는 흔한 양성종양이나 유방실질에서 기원한 단일성 신경섬유종은 거의 보고된 바 없다. 저자들은 61세 여자환자의 유방실질에서 발생한 신경섬유종 1예를 보고한다. 유방촬영에서 분엽성의 경계가 좋은 양성종양의 형태로 나타났고 수술생검으로 확진되었다.

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