

Mammographic and Ultrasonographic Appearances of Plasmacytoma of the Breast: Case Report¹

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Plasmacytoma is a tumor composed of plasma cells in the absence of bone involvement. These malignant tumors can occur anywhere in soft tissue, and especially in the upper respiratory tract and oral cavity. Plasmacytoma of the breast is a rare condition that may occur as a solitary finding or in association with multiple myeloma. We report the mammographic and ultrasonographic findings of a case of breast plasmacytoma associated with a recurrent plasmacytoma in left eyelid involving the sphenoid sinus.

Index words : Breast neoplasms

Metastases

Radiography

Extramedullary myeloma (Plasmacytoma) is a malignant tumor composed entirely of plasma cells in the absence of bone involvement. These tumors can occur anywhere in soft tissue, especially in the upper respiratory tract and oral cavity (1). Plasmacytoma of the breast is a rare condition that may occur as a solitary finding or in association with multiple myeloma (2). We report here on a case of plasmacytoma of the breast that was associated with a plasmacytoma in left eyelid involving the sphenoid sinus. To our knowledge, this report is the first case of plasmacytoma of the breast in Korea.

Case Report

A 50-year-old woman presented with a palpable mass in her left breast for a month. On physical examination,

a palpable mass (about 3 × 3 cm) was identified at the 6 o'clock area of the left breast. The patient had a history of a plasmacytoma of the left eyelid with the involvement of the sphenoid sinus 3 years ago, which recurred at the right eyelid and left preauricular area in spite of chemotherapy and radiation therapy after an excision biopsy. The left mammogram revealed a 3 × 3 cm-sized, circumscribed, high-density mass at the 6 o'clock area (Fig. 1). The patient's previous mammogram 5 months ago was normal. The high-resolution ultrasound examination using a 12 MHz linear array transducer (HDI 5000, ATL Bothell, WA U.S.A.) demonstrated a relatively well-defined, round-shaped, heterogeneously hypoechoic mass with a mild posterior acoustic enhancement in the left breast (Fig. 2A). Increased vascularity was noted in the solid hyperechoic portion of the tumor on the color Doppler study (Fig. 2B).

Fine needle aspiration biopsy was performed, and specimen was composed of dispersed plasmacytoid cells with abundant, basophilic cytoplasm and eccentric nuclei, including some in mitosis (Fig. 3). These appearances were characteristic of plasmacytoma or multiple myeloma. The bone marrow biopsy was done and mul-

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tiple myeloma was ruled out again. The patient received another round of chemotherapy including cisplatin, etoposide and dexametasone.

Discussion

Plasmacytoma usually arises from the bone marrow, and it is known as myeloma that can be divided into an uncommon solitary and common multiple entity (multiple myeloma, myelomatosis). In approximately 70% of patients with multiple myeloma, autopsy findings show

microscopic neoplastic plasma cell infiltrations outside the skeletal system that may occur in almost any organ (3).

However, extamedullary plasmacytomas are rarely detected macroscopically, and so they are seldom noticed before death. There is a distinction between a solitary form and disseminated form. The latter is indistinguishable from disseminated multiple myeloma and can be considered as an end-stage, advanced disease.

In the breast, plasmacytoma is very rare. It was first described by Cutler in 1934 (3), and only 12 cases have

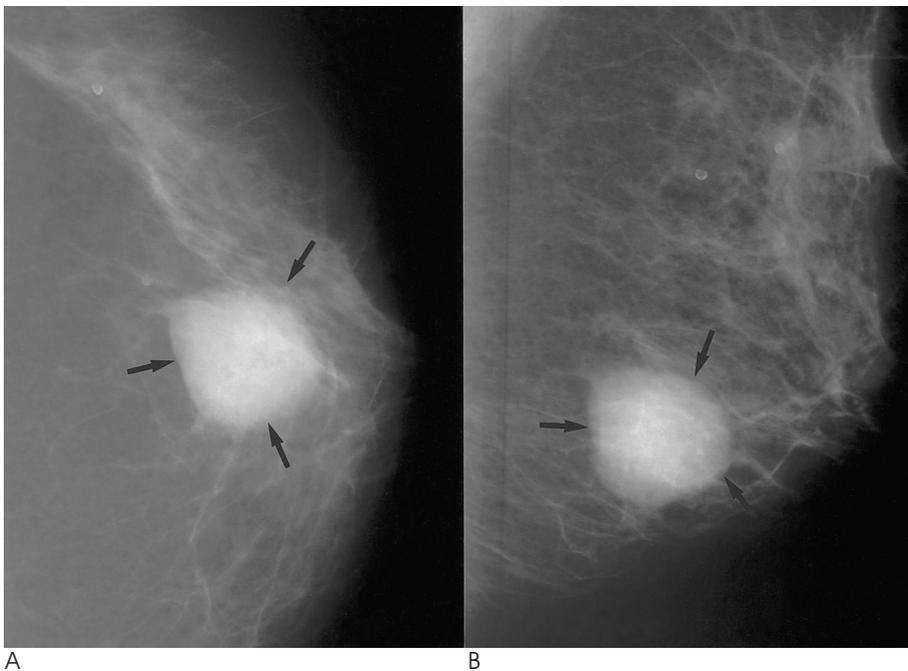


Fig. 1. A, B. Left mammogram shows a 3 × 3 cm-sized, circumscribed, high-density mass (arrows) at the 6 o'clock area of the breast.

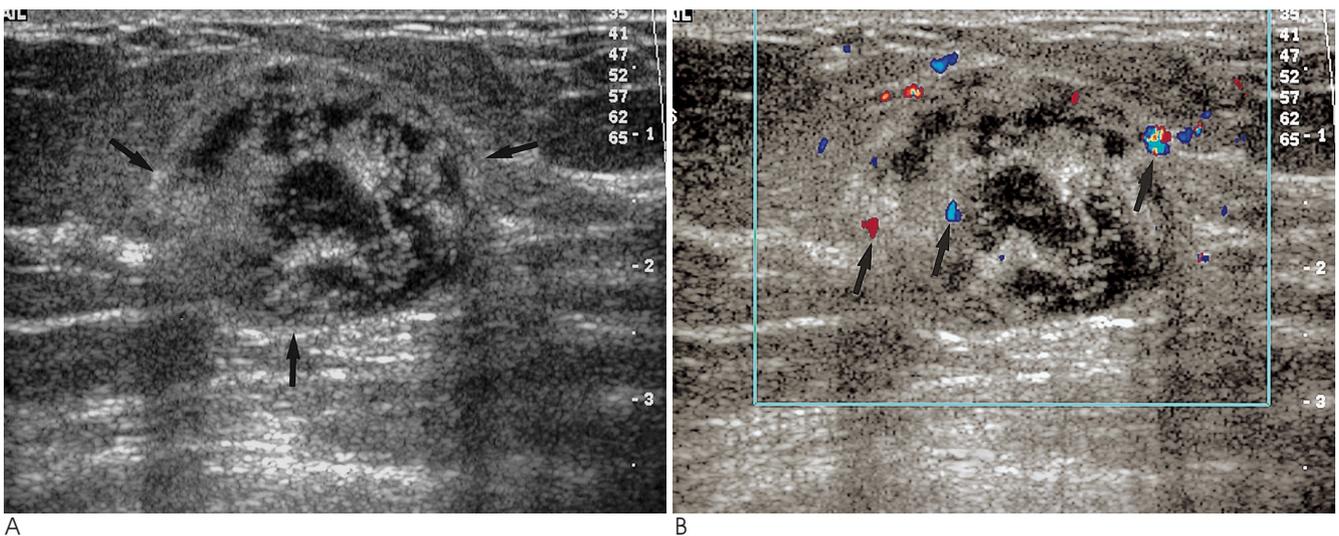


Fig. 2. A. Transverse ultrasonography of the mass shows a well-defined heterogeneous echoic solid mass (arrows) with a hypochoic center in the left breast.
B. Color Doppler study shows an increased vascularity in the mass.

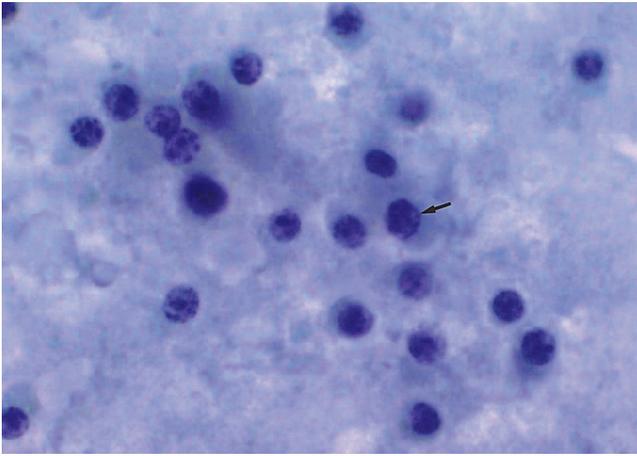


Fig. 3. Photomicrograph of fine needle aspiration biopsy specimen shows dispersed plasmacytoid cells with abundant basophilic cytoplasm and eccentric nuclei, including some mitosis (arrow) ($\times 400$, Wright stain).

been reported to date. Mammographic findings were mainly a well-circumscribed and dense mass. In 3 cases of the 12, ultrasonography demonstrated a heterogeneous hypoechoic mass with posterior acoustic shadowing in one case, but there was posterior acoustic enhancement in the other cases. Vascularity was relatively increased in two of the masses (4 - 6).

Our present study showed a rapidly growing breast mass, as in a case of plasmacytoma. By statistical incidence, primary adenocarcinoma of the breast should be considered as the first differential diagnosis. Mesenchymal sarcomas of the breast stroma also needed to be ruled out because of its significant incidence. Primary and secondary lymphoproliferative processes, such as malignant lymphoma and plasmacytoma are, however, exceedingly rare (4). But considering the growth rate of mass and the presence of an underlying plasmacytoma in the eyelid, plasmacytoma can be in-

cluded into the differential diagnosis. Moreover, the mass showed a well-defined margin mammographically, a lobulated heterogeneous hypoechogenicity sonographically, and an increased vascularity on the color Doppler image. These findings were similar to those of plasmacytoma of the breast, as was described in previous cases (5 - 7).

Recognition of extramedullary plasmacytoma as a distinct variant of myeloma is important, because this condition responds to systemic and local treatment much better than multiple myeloma, and its natural history is also different(8).

We report here on the first case of plasmacytoma of the breast in Korea with its mammographic and ultrasonographic findings.

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