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BREAST IMAGES

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Low-grade myofibroblastic sarcoma of the breast

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A 62-year-old woman presented with a mass of her right breast on September 2016. Clinical examination revealed a palpable nontender mass in her right breast, and no lymphadenopathy was apparent. The breast sonography and mammography revealed a 2-cm-sized well-defined nodular mass with high density, which was radiologically diagnosed as benign lesion, likely phyllodes tumor. She underwent an ultrasound-core needle biopsy (Figure 1), and the mass was diagnosed as "*spindle cell tumor with atypical cells, suggestive for sarcoma N.O.S.* (not otherwise specified)."

The patient was treated with a right breast lumpectomy.

Histologically tumor was composed of a uniform proliferation of spindle cells exhibiting a palely eosinophilic cytoplasm and oval to fusiform nuclei with focal mild to moderate atypia (enlarged, hyperchromatic, and irregular nuclei). The neoplastic cells were arranged in short intersecting fascicles and focally showed storiform or whorled patterns. Tumor stroma was predominantly collagenous with focal myxoid changes. Mitotic rate averaged 15/10 HPF; atypical mitoses and tumor necrosis were absent (Figure 2). Immunohistochemically tumor cells diffusely expressed vimentin and a-smooth-muscle actin, while no staining was obtained with AE1/AE3, CAM5.2, 34bE12, Ck5/6, Ck7, Ck14, Ck17, BER-EP4, EMA, p63, CD31, CD34, ERG, BCL2, CD99, DESMIN, Melan-A, HMB45, S100, MDM2, and STAT6. Ki67 stain showed a proliferative index of 25% of neoplastic cells. Based on the above-mentioned morphological and immunohistochemical features, the diagnosis of "*low-grade myofibroblastic sarcoma*" was rendered.

The patient received neither radiotherapy nor chemotherapy.

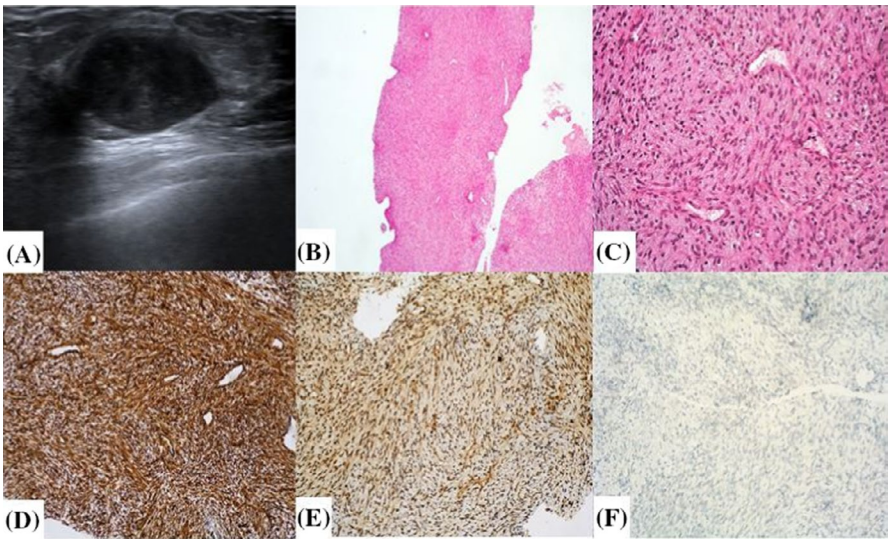

FIGURE 1 Preoperative evaluation. A, US revealed a hypoechoic IEQ/para-areolar capsulated nodule, 35 mm. B-F, Bioptical fragments of a spindle cell neoplasia (B: H&E, 4×), highly cellulated, and with a fasciculated pattern of growth (C: H&E, 10×) composed of atypical cells, immunostained for vimentin (D: LSAB-HRP, 10×) and ASMA (E: LSAB-HRP, 10×), negative for AE1/AE3 (F: LSAB-HRP, 10×)

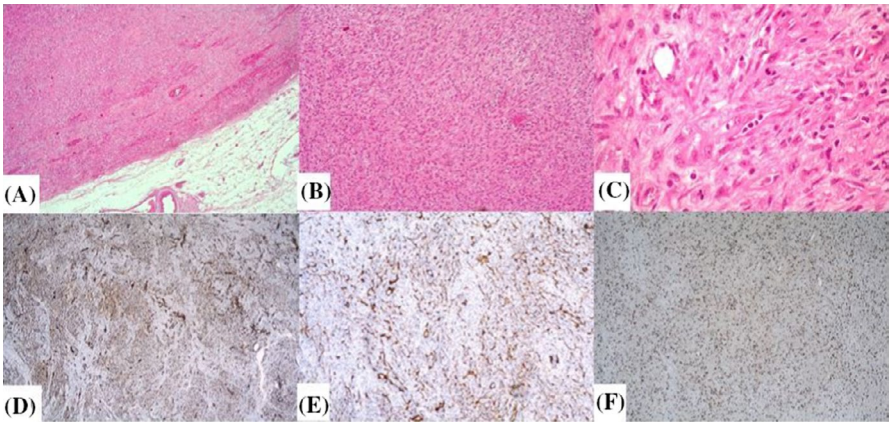

FIGURE 2 Morphological and immunohistochemical findings on surgical specimen. A, Malignant mesenchymal neoplasia, with well-defined margins (H&E, 4×). B, Proliferation of spindle cells arranged in intersecting fascicles, sheets, or storiform whorls, with a variable amount of collagenous stroma (H&E, 10×). C, The cytoplasm was weakly eosinophilic, and the nuclei were fusiform and focally hyperchromatic. There was mild nuclear atypia, and the mitotic rate averaged 15/10 HPF (H&E, 20×). D-F, Negative immunostaining for CD31 (D: LSAB-HRP, 10×) and CD34 (E: LSAB-HRP, 10×); proliferation index (Ki67) equal to 35% (F: LSAB-HRP, 10×)

Two years later after surgery, the patient experienced a local tumor recurrence as a small nodule on the scar. The patient underwent total mastectomy, and she is still alive without evidence of disease after a 42-month follow-up.

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