A 73-year-old woman was previously treated 8 years ago at our institution with breast conserving surgery and axillary node dissection for a T2N0M0 ER/PR positive, invasive lobular carcinoma of the right breast. She was treated with adjuvant chemotherapy in the form of six cycles of FAC (5-FU, doxorubicin, cyclophosphamide) and radiation with 4256 cGy divided into 16 equal daily fractions, without a boost. This was followed by adjuvant tamoxifen for 5 years and then extended therapy with letrozole.

Eight years later, she presented with a gradual onset of ecchymosis and skin thickening in the medial aspect of her breast in addition to the usual radiation-induced changes. The patient denied any breast pain or tenderness or history of recent or remote trauma to the area. A repeat mammogram was negative for any significant findings other than postsurgical scarring. Ultrasound of the breast to rule out hematoma was performed and several large areas of heterogenous echogenicity mostly consistent with hematoma were identified.

Over the next few months, her presentation gradually worsened as she began to develop dark, violet-colored papules that proceeded to become widely distributed over the affected breast (Fig. 1a). A repeat ultrasound revealed extensive skin thickening in addition to the previously identified heterogenous...
echogenicities. MRI not only confirmed the extensive skin thickening and enhancement, it also showed several areas of asymmetric non-mass like enhancement associated with edema within the same breast (Fig. 2a).

Several full thickness punch biopsies of the skin papules were then taken from multiple areas of the breast. Pathological analyses, including immunohistochemical staining with vascular markers Factor VIII and CD34, confirmed the diagnosis of intermediate grade angiosarcoma within radiation-induced changes in the breast tissue (Fig. 3a–c).
Staging investigations, including CT scans of the chest, abdomen and pelvis, were negative for metastatic spread. The patient was evaluated by a surgeon, who judged the disease to be quite extensive, extending beyond the usual mastectomy borders. After discussion at the multidisciplinary Tumour Board, it was decided that a trial of “neoadjuvant” gemcitabine-taxane chemotherapy may help in reducing the extent of disease.

The patient was placed on a six-cycle gemcitabine-taxane chemotherapy regimen. On day one, gemcitabine 675 mg/m² (patient dose of 1083 mg) was given, while both docetaxel 100 mg/m² (patient dose of 160 mg) and gemcitabine 675 mg/m² were given on day eight. Dramatic improvement was seen after two cycles, with diminution of skin discoloration, skin thickening and papule appearance. After four cycles, MRI revealed a near-complete resolution of the areas of asymmetric enhancement in the breast as well as marked improvement of skin thickening and enhancement (Fig. 2b). Clinically, the involvement beyond the mastectomy borders had resolved, making the patient eligible for resection with intent to achieve wide negative margins (Fig. 1b).

The patient had a simple mastectomy extending beyond the usual mastectomy borders and coverage with split-thickness skin graft 4 weeks after her last cycle of chemotherapy. Grossly, there was a 2–5 cm margin around the skin papules. Histologically, there was extensive periductal fibrosis, dermal scarring, and hemosiderin deposition consistent with effects of chemotherapy upon the breast and skin. There was no evidence of residual disease, neither carcinoma nor angiosarcoma, in the skin or the breast.

Radiation-induced angiosarcoma is a rare but well-known sequela of breast conserving surgery that is often advanced on presentation due to a delayed diagnosis. Survival is poor and systemic therapy options have traditionally been ineffective and limited. We report the first case of a locally advanced radiation-induced angiosarcoma of the breast that not only facilitated complete surgical resection, but also showed dramatic complete radiologic and pathologic resolution after neoadjuvant gemcitabine-docetaxel chemotherapy.

**Epithelioid Cell Myofibroblastoma of the Breast: A Potential Diagnostic Pitfall**

Gaetano Magro, MD

*Division of Anatomic Pathology, Department G.F. Ingrassia, Policlinico-Vittorio Emanuele University Hospital, Catania, Italy*

A 40-year-old woman presented with a 0.9-cm, non-calcified, well-circumscribed nodular mass in her upper outer left breast, detected on screening mammogram. Ultrasound examination confirmed the presence of a solid hypoechoic nodule. There was no family history of breast cancer or recent trauma. Lumpectomy was performed. The surgical specimen was comprised of breast parenchyma measuring 2.5 cm in greatest dimension. The cut section revealed a 1-cm, well-circumscribed nodule, whitish in color and firm in appearance. Histologic examination revealed a homogeneously highly cellular tumor composed of medium-to-large sized epithelioid cells with abundant eosinophilic cytoplasm and round to oval, centrally or eccentrically placed nuclei with one or two prominent nucleoli (Fig. 1a). Bi-nucleated or multi-nucleated neoplastic cells, closely reminiscent of Reed-Sternberg-like cells, were focally seen (Fig. 1b). Thin-to-thick eosinophilic collagen bands were interspersed among neoplastic cells (Fig. 1a,b). Immunohistochemically neoplastic...