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Images in hematology-oncology

AYŞEN TERZİ, ARZU SAĞLAM, AYŞEGÜL ÜNER

Hacettepe University Faculty of Medicine, Department of Pathology, Ankara-Turkey

A 79 year-old woman with a mass in the right breast

CLINICAL HISTORY

A 79-year old woman noticed a mass in her right breast three years prior to admission but did not seek medical attention. 7-months before admission she noticed a rapid enlargement in the mass after a blunt trauma to her chest. Subsequently, she was admitted to the hospital with a complaint of bloody nipple discharge and enlarging mass in her right breast.

In the physical examination a 6x10 cm hard mass in the breast and enlarged conglomerated ipsilateral axillary lymph nodes were noted. The laboratory tests showed CEA: 80,2 and CA 15-3: 543.

A right radical mastectomy and lymph node dissection was performed. In the gross examination of this material the nipple was fixated. A 8x8x6 cm mass with a cream-colored cut surface with focal areas of necrosis occupying the inner quadrants of the breast was seen. Grossly the underlying muscle was involved with positive surgical resection margins. The skin overlying the neoplasm was ecchymotic.

In the microscopic evaluation, the neoplasm was composed of variably sized invasive epithelial islands most of which showed necrotic centers, surrounded by a desmoplastic stroma (Figure 1). These islands were composed of neoplastic cells heterogenous in nature. In the periphery of the islands the cells displayed squamoid features with single layer of basaloid cells showing nuclear palisading. Towards the center solid sheets of cells with squamoid features showing various degrees of keratinization was noted. In the center of the islands glandular differentiation was present. Some of the neoplastic islands were purely squamoid in nature. The neoplastic cells showed prominent atypia and high mitotic activity (5-10/10 HPF).

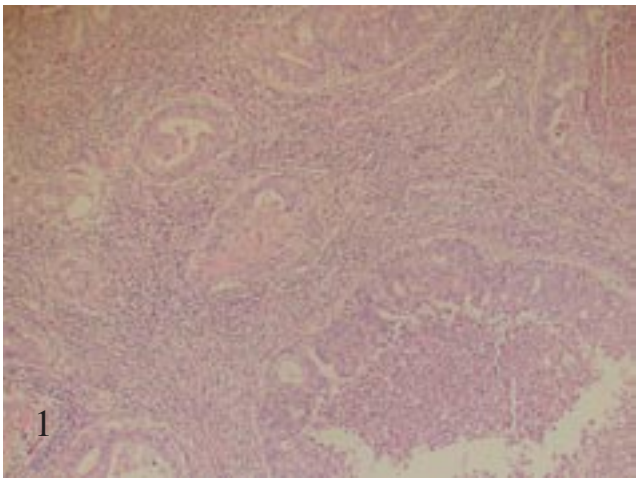
Staining with mucicarmine showed the presence of intraluminal and intracytoplasmic mucin in the glandular areas at the center of the neoplastic islands (Figure 2). Immunohistochemically CK5/6 staining was prominent at the periphery and CK7 staining was prominent at the center of the islands (Figures 3 and 4, respectively). A small number of residual myoepithelial cells could be identified scattered in between the basaloid and squamoid cells at the periphery with SMA and S100 staining.

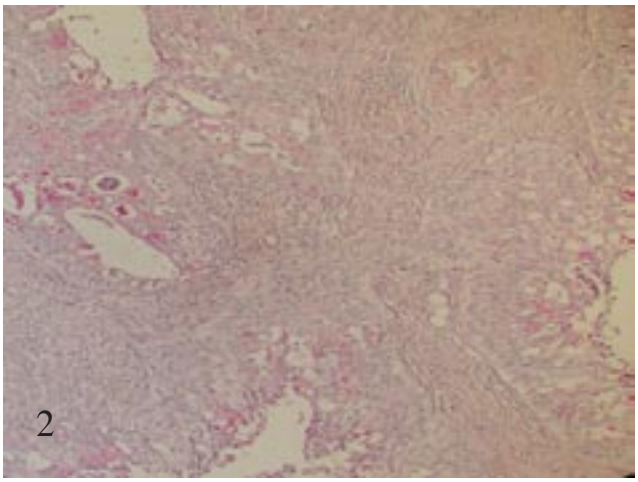
The neoplasm infiltrated the fascia and muscle tissue and surgical resection margins were microscopically confirmed to be positive. The overlying skin was also infiltrated by microscopic foci of neoplastic cells leading to microscopic foci of ulceration.

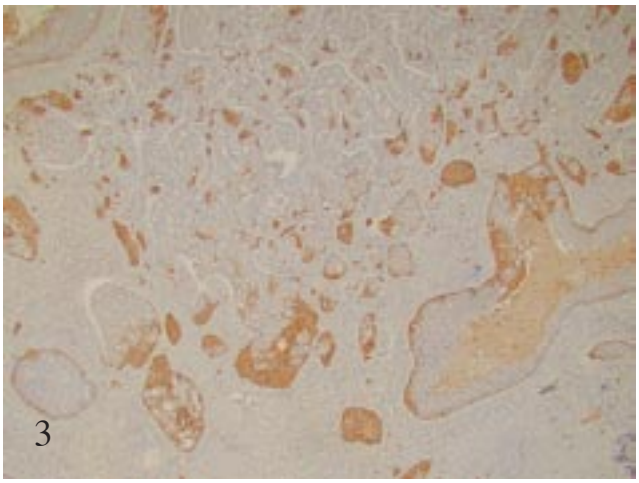
A focus of atypical ductal hyperplasia was identified in the adjacent nonneoplastic mammary tissue.

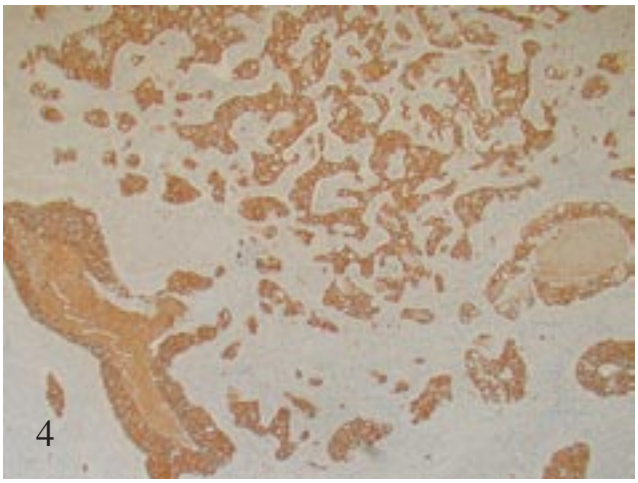
In four of the 14 axillary lymph nodes metastatic foci were shown.

What is your diagnosis ?









PATHOLOGIC DIAGNOSIS

High grade mucoepidermoid carcinoma of the breast

DISCUSSION

Mucoepidermoid carcinoma of the breast (MEC-B) is a rare entity with a total of only 22 case reported in the English literature (1-4). MEC-B shows morphologic and immunohistochemical similarities with mucoepidermoid carcinomas of the salivary gland (MEC-S) (4). By light microscopy, they consist of luminal cells showing mucus secretion, squamoid cells and intermediate cells. A small number of S100 positive myoepithelial cells can also be seen and are thought to play an important role in the histogenesis of MEC-B (5).

Two forms of mucoepidermoid carcinoma have been accepted generally; namely low grade and high grade lesions (1,2). Although the criteria for this grading system are not clearly stated, large areas of undifferentiated components, necrosis, neural invasion, anaplasia and prominent mitotic activity are predictive of an aggressive behaviour (6,7).

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