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Unusual bone marrow metastases in a breast cancer patient

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Breast cancer is the most common malignancy in woman and it frequently metastasizes to bone.[1,2] Moreover carcinoma of the breast accounts for 2–3% of cases of neoplasms with unknown primary sites.[3,4] We present a case in which bone marrow biopsy led to a diagnosis of breast cancer in the absence of a clinically detected breast lesion.

A 49-year-old female with a three year history of low back pain was admitted to our Institution in January 1998 because an X-ray examination had revealed the presence of multiple osteolytic lesions. Complete blood counts showed moderate anemia (Hb 10.8 g/dL), WBC 8.8×10^9/L, platelet count 254×10^9/L and a slightly elevated erythrocyte sedimentation rate (ESR) (30 mm/hr). Others laboratory tests were normal. A possible diagnosis of multiple myeloma was made and the patient was submitted to bone marrow aspiration and biopsy. The bone marrow aspirate was a dry tap. The bone marrow trephine specimen was fixed in formalin, embedded in glycol methacrylate resin (JB-4 Kit, Polysciences, Inc., USA) and cut into 1.5 µm sections which were stained with Giemsa.

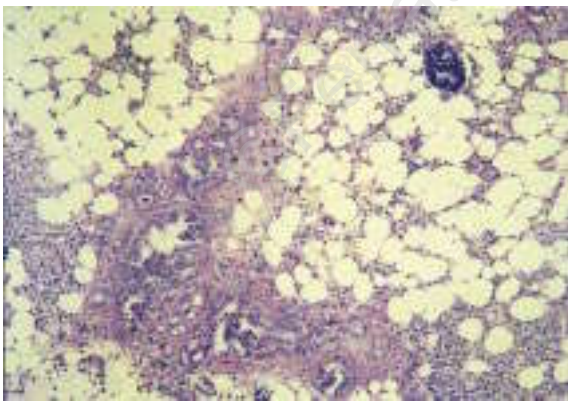

Figure 1. Bone marrow trephine section. Large area of marrow replaced by neoplastic cells showing gland-like structures. Giemsa ×10.

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Microscopic bone marrow examination revealed the presence of large areas of marrow replaced by well organized ductal structures which had the appearance of normal breast tissue (Figures 1 and 2). Higher magnification showed that the ducts were lined by a single cell layer and that the cells possessed apocrine snouts. A substance, probably secreted by the metastatic cells, was present within the lumen (Figure 3).

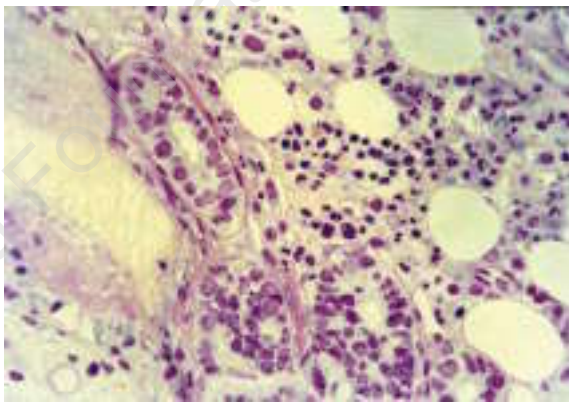

Figure 2 . Bone marrow trephine section. Ducts and acini resembling normal breast tissue. Giemsa ×40.

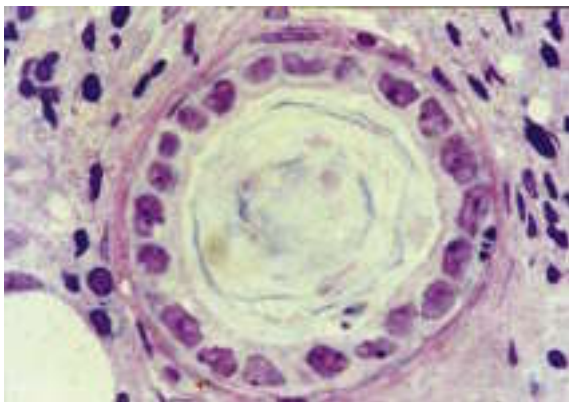

Figure 3. Bone marrow trephine section. High magnification of a duct showing apocrine snouts and a secretion inside the lumen. Giemsa ×100.

As a result of the bone marrow picture, the patient was submitted to a mammography which revealed a lesion less than 1 cm. in the right breast. A wide surgical biopsy of the lump was then performed and the histology report was: «*ductal infiltrating carcinoma with estrogen and progesterone receptor expression in 50% of neoplastic cells and a low proliferative index*».

Bone metastases of breast carcinoma rarely look like ectopic ducts having the appearance of normal breast tissue, usually they are composed of clusters of tumor masses.[5]

In our case the particular morphology of the bone marrow metatstases led to the diagnosis of the primary neoplasm.

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