Breast cancer is the most common malignancy in woman and it frequently metastasizes to bone. Moreover carcinoma of the breast accounts for 2–3% of cases of neoplasms with unknown primary sites. 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 8.8×10⁹/L, platelet count 254×10⁹/L and a slightly elevated erythrocyte sedimentation rate (ESR) (30 mm/hr). Other 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.

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).

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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 metastases led to the diagnosis of the primary neoplasm.

References