

Bone sequestration metastasis of the skull: An unusual presentation of Breast Cancer

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Description

A 68-year-old female with past medical history of stage 2 infiltrating ductal carcinoma of the left breast without current treatment and low grade papillary transitional cell carcinoma of the bladder treated with transurethral resection 10 years ago presented to our institution for shortness of breath, dizziness and palpitations. Patient reported abdominal pain, constipation, generalized weakness, persistent nausea/vomiting, 20-pounds weight loss and several emergency department visits for the past two months. Vital signs: Blood pressure 154/89mm/hg, pulse 100, temperature 98.6 °F (37 °C), respiratory rate 22 and SpO₂ 89 %. Physical examination revealed jaundice, photophobia, hearing loss, wheezing, stridor and dizziness upon standing and walking. Laboratories demonstrated hyperbilirubinemia, hypokalemia, elevated thyroid stimulating hormone and transaminases. Computed tomography of the head (Figure 1), chest, abdomen and pelvis (Figure 2) were requested demonstrating multiple metastatic deposits. CT of the head also revealed a small rounded calcification within a lucent lesion consistent with bony sequestrum. (arrows). Interventional radiology was consulted and performed a bone marrow biopsy of the left iliac bone (Figure 3) that reported metastatic carcinoma, breast primary with estrogen receptor positivity (Figure 4). During the hospitalization, patient presented with progressively neurological exam deterioration. There was a goal of care discussion with her who elected for hospice care and comfort measures. Patient subsequently died secondary to cardiopulmonary arrest.

By Pathology definition, bony sequestrum is a portion of devitalized bone, separated from the surrounding bone during necrosis. Radiology description of bony sequestrum consist of a calcification evident inside a lucent lesion, completely isolated from the encircled bone [1-3]. The term “button sequestrum” was first described by Wells as an osteolytic lesion “with a central nidus of intact bone” which was evident in the calvarium of a patient presented with eosinophilic granuloma of the skull [4,5]. Conditions that may present with a bony sequestrum include osteomyelitis, skeletal tuberculosis, radiation necrosis, eosino-

philic granuloma, primary lymphoma of bone [1-4] and to a lesser extent, metastatic carcinoma of the esophagus and breast [2,6]. To our knowledge, this is the second case report highlighting bone sequestration metastasis of the skull findings in a patient with breast cancer. The first case was described by Rosen and Nadel in 1969 [6].

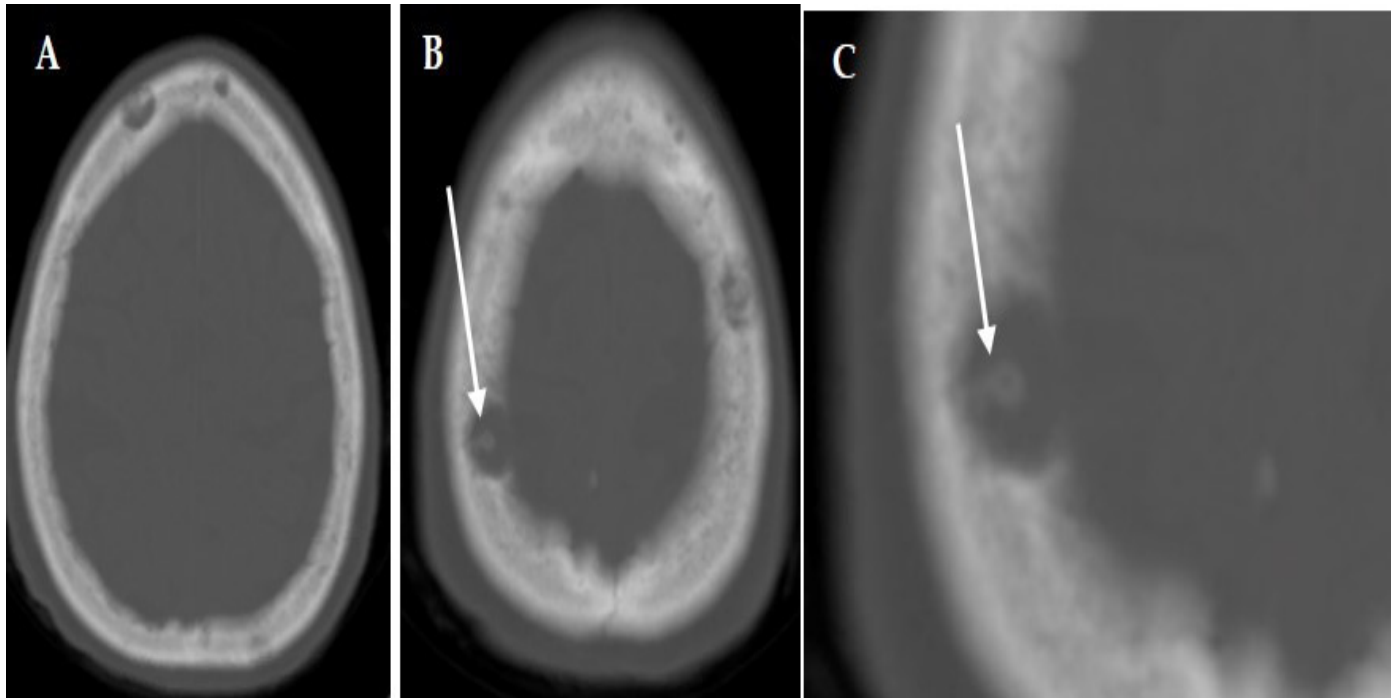


Figure 1: Computed tomography of the head, (A) and (B) axial planes, (C) high power, reveal multiple lytic lesions in the skull with sequestrum (arrows), which may be evident in metastasis from breast cancer.

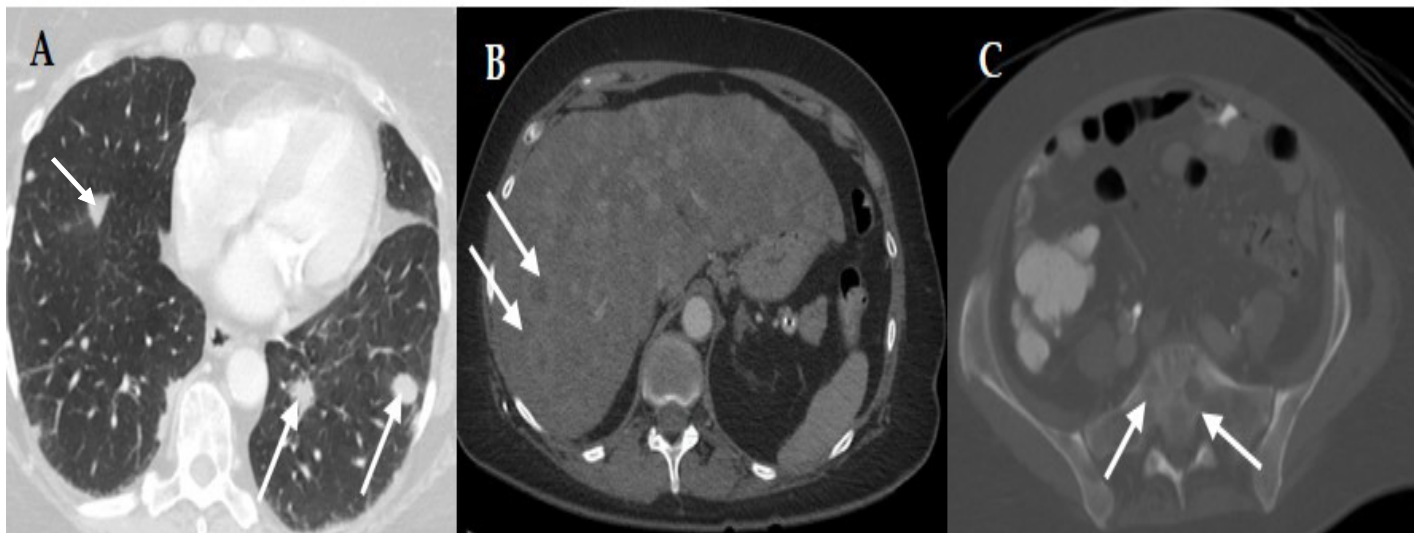


Figure 2: Computed tomography of the (A) chest, (B) abdomen and (C) pelvis, axial planes show pulmonary, hepatic and skeletal metastatic deposits respectively (arrows).

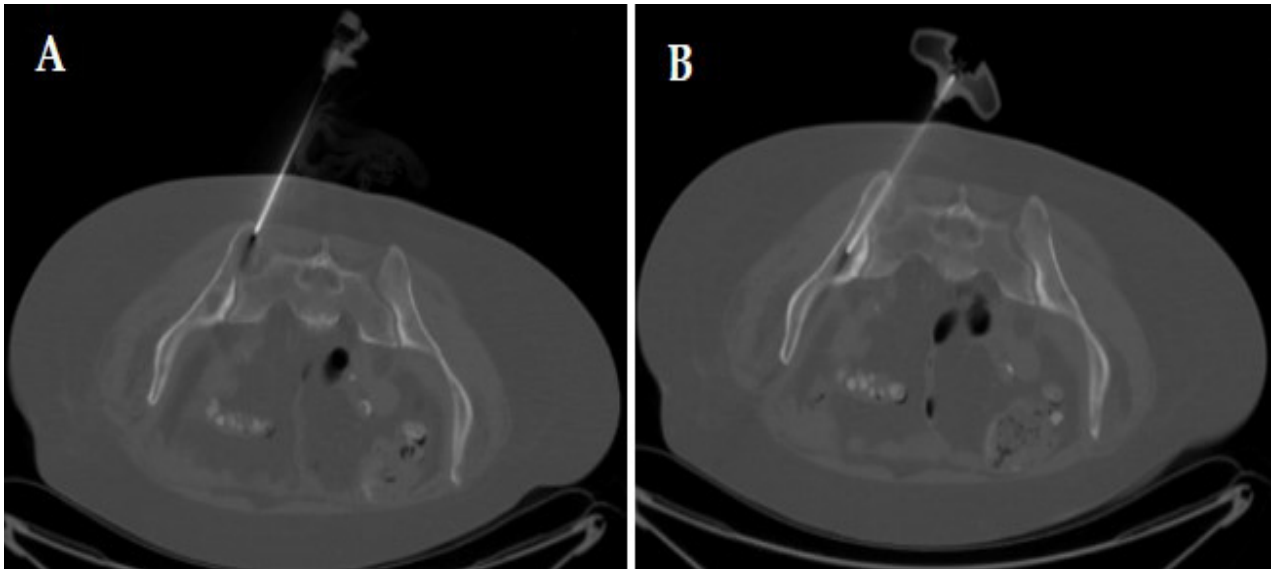


Figure 3: Computed Tomography guided biopsy of bone marrow and core bone biopsy from the left iliac tuberosity lytic lesion, axial planes. **(A)** Needle towards lytic lesion **(B)** Needle within lytic lesion.

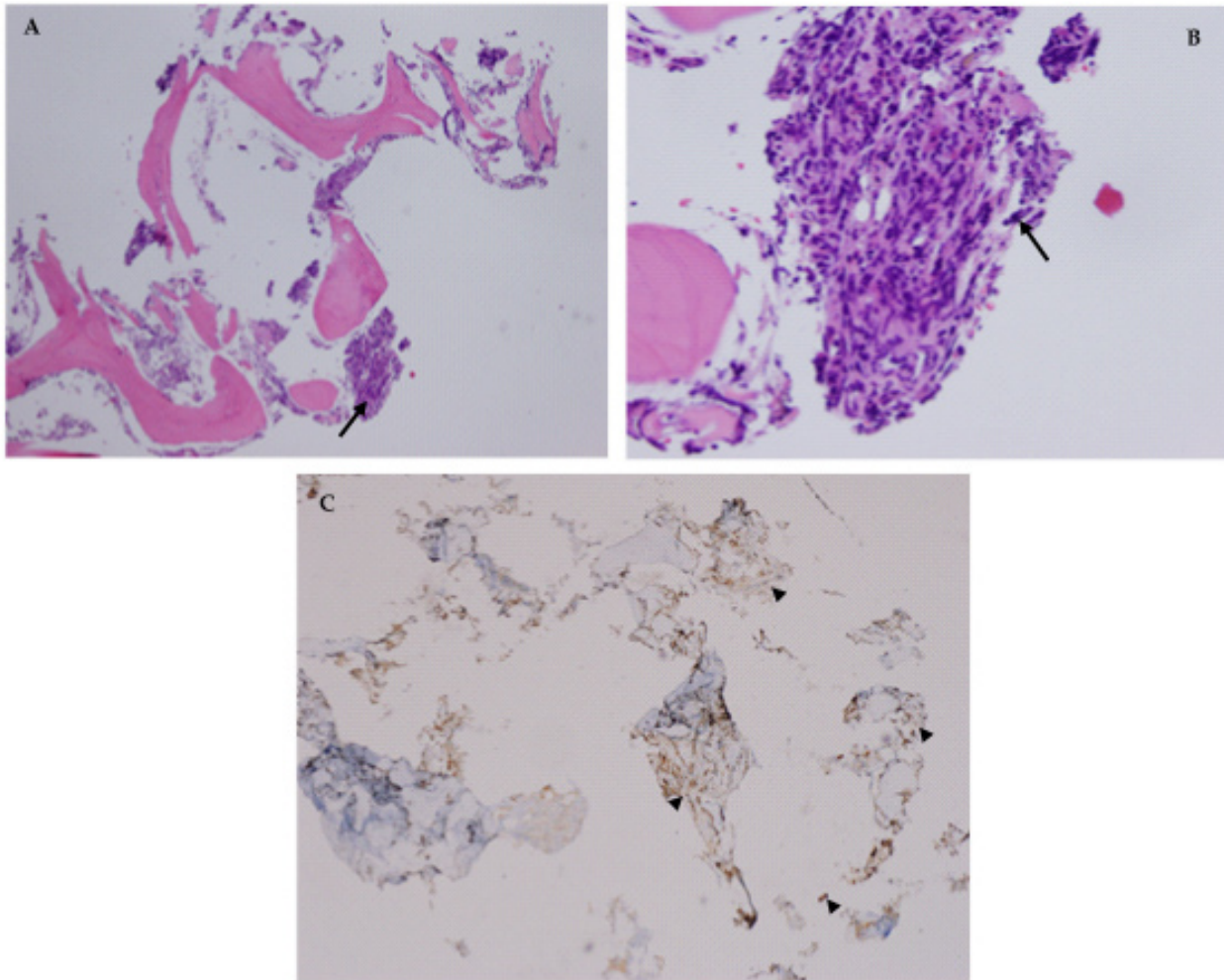


Figure 4: Hematoxylin and eosin (H&E) stain of bone marrow at low power **(A)** and high power **(B)** demonstrates hypercellular marrow with trilineage hematopoiesis. In the crushed cellular areas, atypical cells are likely seen, with loose clusters, intermediate in size, with irregular nuclear contours, conspicuous nucleoli, and relatively abundant cytoplasm suggesting metastatic deposits (arrows). **(C)** The neoplastic cells are positive for Estrogen Receptors (ER) staining (arrowheads). Findings are consistent with metastatic carcinoma, breast primary.

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Manuscript Information: Received: January 22, 2020; Accepted: March 12, 2020; Published: March 16, 2020

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Citation: Barbeito s, Paryani B, Gregorio ML, Gomez JS, Dabrowski D, Cuellar H. Bone sequestration metastasis of the skull: An unusual presentation of Breast Cancer. *Open J Clin Med Case Rep*. 2020; 1640.

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