Primary breast Burkitt lymphoma
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Section: Breast imaging
Area of Interest: Breast
Imaging Technique: Ultrasound
Imaging Technique: CT
Imaging Technique: Mammography
Case Type: Clinical Cases
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Patient: 58 years, female

Clinical History:
A 58-year-old woman came to our hospital with a palpable painless mass in her right breast.

Imaging Findings:
A 58 year-old woman without family history of breast cancer was admitted to our hospital with palpable painless mass in her right breast and in ipsilateral axilla, confirmed by physical examination. Conventional mammography showed a mass with ill defined margins in the subareolar right breast without suspicious microcalcifications; US scan demonstrated a large (4 cm), highly vascularised and irregular shape mass with spiculated margins and ipsilateral axillary swollen lymph node. Hystological examination after core-biopsy revealed a diffuse neoplastic growth, largely replacing normal breast parenchyma, composed of large lymphoid cells positive for CD79a and CD20, with high MIB-1 index (> 90%). This pattern was suggestive for non-Hodgkin's lymphoma, diffuse B large cell, Burkitt-type. B5. CT scan was performed and didn't show lymphadenopathies in the other locations so we classified it as primary breast lymphoma. The patient was treated with chemotherapy and complete regression of the tumour followed.

Discussion:
Burkitt lymphoma of the breast is a specific and very rare clinical manifestation of the disease and it originates from B cells similar to those of germinal centres, growing as a solid mass infiltrating the organs and tissues and it is characterised by a rapid spread and a poor prognosis because of the high proliferative capacity of cancer cells; the incidence of primary breast lymphoma lies between 0.04-1.1% for all breast tumours and 1.7-2.2% for all extranodal NHL; in particular most of these lymphomas are high-grade malignant neoplasms, mainly large cell and Burkitt lymphoma and so they constitute 0.07% of all NHL and 1.7% of extranodal NHL.
Burkitt lymphoma has been classified into three categories: the endemic or African type, the sporadic type, which may develop in any of the abdominal organs but especially in the terminal ileum and lymph nodes, and the third type which occurs in human immunodeficiency virus–positive patients. The endemic type is seen in young Africans in close association with Epstein-Barr virus and malaria and it generally involves the bones of the jaw and other facial bones, whereas the sporadic type is seen in Europe and the United States. Neoplastic cells of Burkitt's lymphoma are infected by EBV in 95% of cases in endemic form, 30-40% in the form associated with HIV and 20% in the sporadic form. The existence of EBV-negative Burkitt's lymphoma shows that viral infection isn't a necessary condition for the development of the disease and that other mechanisms are also involved as by the increase in transcription of the c-MYC. There is no single imaging finding diagnostic of lymphoma, in fact it can have variable mammographic appearances but usually it manifests with a bilateral and diffuse marked increase in parenchymal density. The sonographic appearance is most often that of a solid hypoechoic mass but it is non specific; both
radiologic and clinical appearance are similar to carcinoma and therefore the differential diagnosis is difficult, but microcalcifications are not a usual feature in lymphoma. The final diagnosis is dependent on histopathological confirmation so this case reiterates the importance of the biopsy both for the diagnosis and the line of treatment. There are a lot of possible treatment protocols and all of them involve the use of polichemotherapeutic regimes.

**Differential Diagnosis List:** Burkitt lymphoma of the breast, Breast malignant cancer, Other lesion of the breast

**Final Diagnosis:** Burkitt lymphoma of the breast

**References:**


Description: Craniocaudal and mediolateral oblique projection show a solitary, non-calcified mass with ill defined margins in retroareolar right breast. Origin:
Description: Craniocaudal and mediolateral oblique projection show a solitary, non-calcified mass with ill defined margins in retroareolar right breast. Origin:
Description: US of the breast shows a mass irregular in shape with spiculated margins. Origin:
Description: CT scan shows a solitary mass in the right breast. Origin:
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**Description:** Photomicrograph of sample from core-biopsy of right breast shows cells’ positivity to CD20 (magnification x 25) and CD79a (magnification x100) respectively. **Origin:**
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