

Inflammatory carcinoma of breast in a post menopausal woman - a case report

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Abstract:

Inflammatory breast carcinoma (IBC) is uncommon, aggressive form of primary breast cancer due to its rapid proliferation. Diagnosis is made on clinical, cytology and histology correlation. Imaging is performed to look for the extent of disease. Breast ultrasound and mammography are common modalities performed for primary lesion detection, local progression of disease and for monitoring of treatment.

Keywords: Inflammatory breast cancer, carcinoma mastitis, infective mastitis, breast ultrasound, mammography.

Inflammatory breast carcinoma (IBC) is also known as carcinoma mastitis (CM) and represents the most virulent form of breast cancer. It is an uncommon and aggressive form of breast cancer with inflammatory skin changes¹. Usually presents in women between the 4th and 5th decades. The first description of IBC / CM in the scientific literature was published in 1814 by Sir Charles Bell², then in 1938 the terms “True IBC” and “Primary IBC” were coined to distinguish “IBC” and “secondary IBC”. Secondary IBC was defined by secondary changes in the breast or recurrence of breast cancer³. The incidence of IBC varies in different regions of the world. More common in North Africa, 5-7% of all breast cancer in Tunisia⁴, 4-5% in Morocco⁵, while in Egypt it has a rate of 11%⁶.

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Data for IBC from India are limited. The median age was reported as 45 years with a range 23-66years and median duration of symptom was 5 months. IBC is characterized by its rapid progression and higher potential of metastasis⁷. Diagnosis of this entity is essentially clinical and histological. Multidisciplinary modality approach of imaging surgery and chemotherapy is required to diagnose and treatment of IBC. The 5-year survival of patients with this cancer type is low compared to other breast cancers⁴.

Case

A 61 years old post menopausal female was referred to the radiology department for mammography and breast ultrasound. She was complaining of swelling and redness in right breast with retraction right nipple since 2 months. On examination, overlying skin appeared red with retracted right nipple (figure 1).



Figure 1: Clinical photograph of inflammatory changes

On palpation, swelling was warm, tender and edematous. A lump was palpable in outer upper quadrant of right breast, which was adherent to skin but not to underlying muscle. No palpable axillary lymph nodes noted. Other system examination was within normal limits. There was no positive family history of breast cancer in her family. Her personal history was insignificant. Skiagram chest and ultrasound abdomen and pelvis were normal. Her breast ultrasound revealed - poorly defined heterogeneous hypoechoic mass lesion with microlobulated margins causing posterior acoustic shadowing in upper outer quadrant of right breast (figure 2). Lesion was non parallel in orientation with diffuse skin thickening of more than 3 mm. Increased vascularity of lesion was seen on color doppler.



Figure 2: Right breast ultrasound poorly defined heterogenous hypoechoic mass lesion

Subcutaneous tissue oedema was seen adjacent and surrounding to focal lesion. Mammogram of right breast revealed an ill defined dense lesion in upper outer quadrant with spiculated margins and few scattered micro calcification (figure 3). Nipple was retracted with thickening of adjacent skin and subcutaneous tissue.



Figure 3: Right Mammo MLO view – focal dense with spiculated margins with few scattered microcalcification, retraction of nipple with skin and subcutaneous tissue thickening.

Opposite breast and both axillary region were normal on BU and Mamo. Mammography assessment BIRAD V Right breast. USG guided aspiration cytology from right breast mass lesion was suggestive of IBC (figure 4). Planned radical mastectomy for right breast was performed. Specimen histology confirmed invasive duct carcinoma Gr II with no evidence of any involvement of lymph node. Nipple and Areola were unremarkable. Skin and subcutaneous tissue were free.

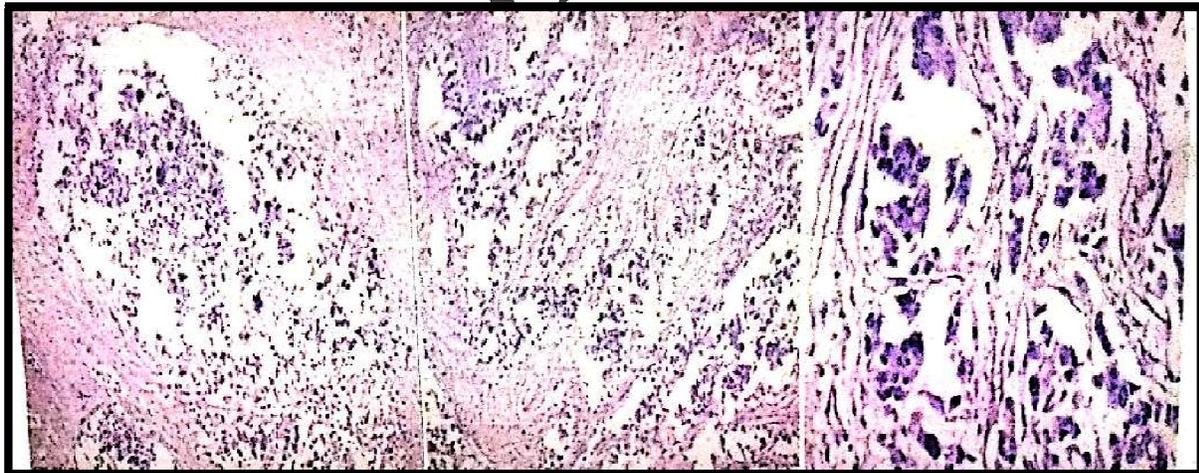


Figure 4: Invasive ductal carcinoma Grade II

Discussion

Inflammatory breast carcinoma is uncommon locally and aggressive breast cancer⁸. Its incidence is 1-4% of all breast cancers¹. Commonly seen in females between 4th to 5th decades⁹. There are no established risk factors for IBC. However few suspected risk factors associated with IBC are black race, body mass index (BMI), age and region¹¹.

Affected mostly in African American women have 50% higher incidence than Caucasian^{8,10}. The median age was reported as 45 years with a range 23-66 and median duration of symptom was 5 months^{12,13}. Clinically, inflammatory breast cancer mimics mastitis⁹. IBC commonly presents with rapid progressive tenderness, warmth, and enlargement of involved breast, duration of history < 6 months. Skin is erythematous, warmed, indurated as well as peau d'orange. Nipple retraction with axillary lymph nodes enlargement is commonly seen on affected side. The condition is not painful as compared to the alarming appearance on examination. Systemic symptoms do not include fever and patient does not respond to antibiotics⁸. These may help differentiate IBC from IM. Currently there are no definitive molecular or pathological criteria for IBC diagnosis¹⁰. Histologically, IBC is uncommon type of invasive breast cancer. Invasive ductal carcinoma is the most common type of all primary breast cancer. Hence the diagnosis is entirely based on clinical symptoms like rapid onset of erythema and edema of breast skin, similar to any benign bacterial infection such as mastitis. IBC is not present with symptoms of infection like fever^{10,14}. As per American Joint Committee on Cancer AJCC IBC diagnosis criteria are rapid onset of erythema occupying at least one-third of the breast, edema and or orange peel of the breast and / or a warm breast of initial presentation of 3 months^{10,15}. Our patient also presented with swelling and redness of skin in right breast with retraction right nipple of 2 months duration. As such IBC is not considered as a specific histological sub type of breast carcinoma and has no specific diagnostic pathological features. Most IBC are ductal carcinoma with high nuclear grade¹⁰. About 17 to 30 % of IBC cases are triple negative and 18 to 44% are epidermal growth factor receptor 2 (HER 2) positive¹⁰. Usually with the characteristic clinical presentation and histopathological examination confirm the diagnosis of IBC. Dermal lymphatic emboli are seen in about 75% of cases. However no direct correlation seen in between the presence, number or size of emboli and the degree of redness of the skin in patients with IBC¹⁰. No evidence of involvement of skin, nipple areola and axillary lymph nodes were seen on excised MRM specimen of the case.

Advances in imaging techniques have improved the diagnosis of breast carcinoma, IBC and useful to monitor the response to treatment with screening of contra lateral breast¹⁵.

Breast ultrasound provide valuable information for regional axillary and supraclavicular lymphnode along with primary breast tumor skin and subcutaneous tissue status. Mammography is the current standard imaging, al though optimal compression can be limited by the pain related to breast's inflammation. Mammography can reveal skin thickening, stromal infiltration, architectural distortion and or diffuse increase in density. The tumor mass is absent in 25% of IBC. There was focal mass lesion with architectural disorganization, surrounding skin thickening with nipple retraction noted in our case. Distant metastases noted in 20-30% of newly diagnosed IBC cases¹⁰. Post operative, Chemotherapy was given to her. There was no evidence of distant metastasis during the initial stage and on subsequent follow up to 6 months post operative period.

Conclusion

Breast cancer is one of the most common cancer found in Indian women. IBC is very virulent variety of breast cancer. Common presentation is seen in both IBC and mastitis. Our case of IBC was presented in post menopausal women of short duration. A clinical suspicion of IBC was confirmed on imaging and cytology. Finally histopathology reconfirmed the diagnosis of IBC.

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