

Granulomatous Mastitis Mimics Breast Carcinoma- A Diagnostic Concern

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Extensive research has been done to investigate and treat malignant conditions of the breast. Benign breast lesions are, however, more common than breast malignancies. Patients presenting with acute mastitis or abscess rarely undergo fine needle aspiration cytology and biopsy, since diagnosis is usually based on clinical grounds. Breast cancer and infection may be present in the same patient; acute mastitis can raise suspicion of inflammatory carcinoma.

Granulomatous mastitis is not a common chronic inflammatory disease of breast which resembles carcinoma and has multiple etiologies like tuberculosis, fungal infections, parasite like filariasis, brucellosis, traumatic fat necrosis, idiopathic granulomatous mastitis (IGM) and systemic diseases like Wegner's granulomatosis. Association of IGM with lactation, hormone intake and autoimmune disorders have been proposed.

Tuberculosis is commonly regarded as a pulmonary disease, however, rare cases have been reported in extra pulmonary sites like breast and skin. Tuberculous mastitis is a very rare disease in younger age. The reason for this rarity has been labelled to the resistant environments offered by breast parenchyma for growth survival of tuberculous bacilli.

Sir Astley Cooper in 1829 was the first to describe a tuberculous breast lesion and called it as "scrofulous swelling of the bosom of young women". Secudder (1889) reported 83 cases of tuberculosis of the breast, this figure was raised to 205 by Shipley and Spencer in 1926, by 1931 Morgan had collected 439 cases from literature. Nearly 500 cases of

tuberculosis mastitis were reported by Hamit and Ragsdale by 1982.¹ Robert Koch discovered tubercle bacilli in 1882, since then tuberculosis remains one of the most important health problems, according to World Health Organization one-third of the world's population is suffering from tuberculosis. According to population commission report tuberculosis is the fourth major cause of death in Pakistan. In the United States of America an increasing percentage of extra-pulmonary tuberculosis has been reported. In spite of the fact that many people are suffering from tuberculosis all over the world, the overall incidence of tuberculous mastitis varies from 0.1% in developed countries to 0.3%-5% in developing countries where tuberculosis is endemic.

Tuberculous mastitis has distinct pathological types like, nodular, diffuse and sclerosing. The nodular and sclerosing varieties mimic carcinoma. Cytology (FNAC) and histopathological examination are necessary for reaching a conclusion, however, they can be inconclusive and diagnosis is usually based on histopathological picture comprising Langhans type of giant cells, lympho-histiocytic infiltrate and epithelioid cells, thus befitting the category of a granuloma. Care, however, must be taken to demonstrate microorganisms in tissue sections. Diagnosis can be missed frequently as biopsy specimens most of the times lack bacilli and investigations like culture are usually negative, tests like polymerase chain reaction (PCR) do not have the same diagnostic utility as in pulmonary tuberculosis it, therefore, becomes difficult to differentiate culture negative mastitis from granulomatous mastitis. Without clinical presentation, the true picture of the disease remains unclear. It is pertinent to say, that diagnosis of IGM should be made only after an adequate trial

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of anti-tuberculous therapy. Idiopathic granulomatous mastitis (IGM) was first reported by Kessler and Wolloch in 1972 and later reinforced by Cohan in 1977. The exact etiology of IGM is not known, however, it has been associated with oral contraceptive use, pregnancy and autoimmune disorders.

Idiopathic granulomatous mastitis is present in certain patients in post-lactation period and, therefore, called postlactational granulomatous mastitis, a rare benign predominantly lobular disease that clinically resembles breast carcinoma and tuberculosis. It usually presents as a firm, well defined, unilateral breast lump, often associated with an ulcerated inflamed skin, retracted nipple and sinus formation. Fine needle aspiration cytology (FNAC), however, is not conclusive since the targeted area sometimes is missed in the procedure. Granulomatous lobular mastitis is a benign inflammatory disease of the breast diagnosed mostly by excisional biopsy, the histological picture presents as lobular epithelioid and multinucleated giant cell granulomas, with minor ductal, periductal inflammation and micro abscesses. Before making a diagnosis of Idiopathic granulomatous mastitis other etiologies for chronic specific mastitis such as tuberculosis, Sarcoidosis, Fungal and parasitic infections must be excluded. This entity, like tuberculosis can be considered in the differential diagnosis of any breast lump

Sarcoidosis is a non caseating granulomatous inflammatory disease that affects multiple organs in the body and may involve the breast parenchyma, it is a perplexing disease when it comes to deciding between benign and malignant lumps. Although sarcoidosis of the breast is a rare disease it does come in the differential diagnosis of breast cancer

even if the patients have no clinical evidence of systemic disease. Biopsy is mandatory to exclude malignancy, since clinical findings, mammography, and ultrasound results can be inconclusive.

Few reports of fungal necrotic breast masses have been seen in the literature, more than 100 fungal species cause phaeohyphomycosis. Biopsy typically shows suppurative subcutaneous inflammatory infiltrate and possibly a granulomatous reaction. Abnormal mammograms have been mistaken as breast carcinoma while blastomycosis was identified as the causative agent. This infection must always be considered by clinicians practicing in the endemic region.

Tuberculosis is prevalent in most of the economically deprived countries. This has been and is going to be a great concern in foreseeable future. There is a strong need for awareness among surgeons, pathologists and radiologists regarding the difficulty in differentiating acid-fast bacilli (AFB) negative tuberculous mastitis from granulomatous mastitis. Chronic granulomatous mastitis resembles breast malignant lump on physical and radiological assessment; there is an essential need to address this issue to take care of avoidable surgical procedures.

References

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