

Paget's disease of the Nipple: Case Study and Literature Review

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Abstract: *Paget's disease of the breast is cancerous involvement of the nipple-areola complex, accounts for 1-5% of all breast cancers and is often associated with underlying in situ or invasive carcinoma, imaging based on ultrasound mammography and breast MRI is therefore to look for underlying cancer, The diagnosis of Paget's disease is confirmed by histological examination, and we report the case of a patient with Paget's disease of the nipple and we review the main clinicopathologic and therapeutic features of breast Paget's disease. The prognosis of Paget's disease of the nipple is governed by the presence of an associated palpable mass and the invasiveness of the underlying cancer*

Introduction:

Paget's disease of the breast is rare and was first described by Sir James Paget in 1874 [1]. Because the condition itself is often harmless and superficial in appearance, it is sometimes dismissed, when in fact it is indicative of a very serious underlying condition, breast cancer. The disease is characterized by the damage of the epidermis by malignant cells. These malignant cells are large with abundant clear or slightly colored cytoplasm. and nuclei with prominent nucleoli. Clinically, patients often present with changes in the nipple and areola.

These include itching, erythema, bloody nipple discharge, nipple erosion or ulceration, and nipple retraction. Its pathogenesis and surgical treatment remain subjects of clinical debate. The aim of this study is to describe the clinical and pathological features, histogenesis and treatment modalities of this disease.

Patient(s) and observation(s):

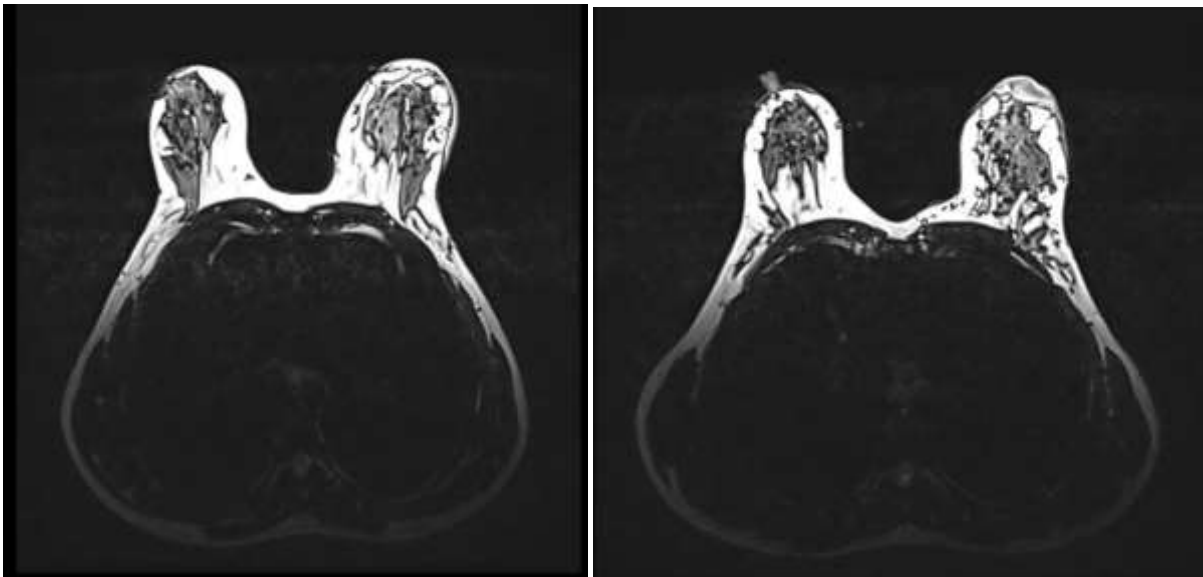
A 46-year-old woman presented to our department with a reddish, pruritic, erosive and oozing nipple lesion on her left breast that had been evolving for 4 months. The interrogation did not reveal any particular history. The clinical examination found an ulcerated and oozing lesion on the left breast, the rest of the examination of the left breast was without particularity, in particular there was no palpable nodule, nor nipple discharge, the axillary hollows were free.(figure 1).

The ultrasound mammogram showed a thickened tumor of the left areolar plate, the appearance of which was suggestive of Paget's disease of the left nipple, with two homolateral axillary adenopathies with thickened cortex, which were suspicious given the context. A biopsy of the areolar-nipple plate showed a histological and immunohistochemical aspect of a Paget's disease of the nipple, MRI in favor of a tissue lesion of the areolar and nipple plate of the left breast with a suspicious appearance associated with a very moderate retro nipple glandular contrast, with a slightly anarchic aspect and a type 2 enhancement curve(figure 2)

The patient underwent removal of the left areolar-nipple plate ("PAMectomy") with homolateral axillary lymph node dissection . The definitive histological analysis concluded to a non-specific infiltrating breast carcinoma of grade 3 SBR extended over 3cm, absence of carcinoma in situ, presence of vascular emboli with Paget's disease of the nipple and lymph node invasion 3 positive nodes out of 13 sampled, Stade pT2N1Mx .



Figure 1



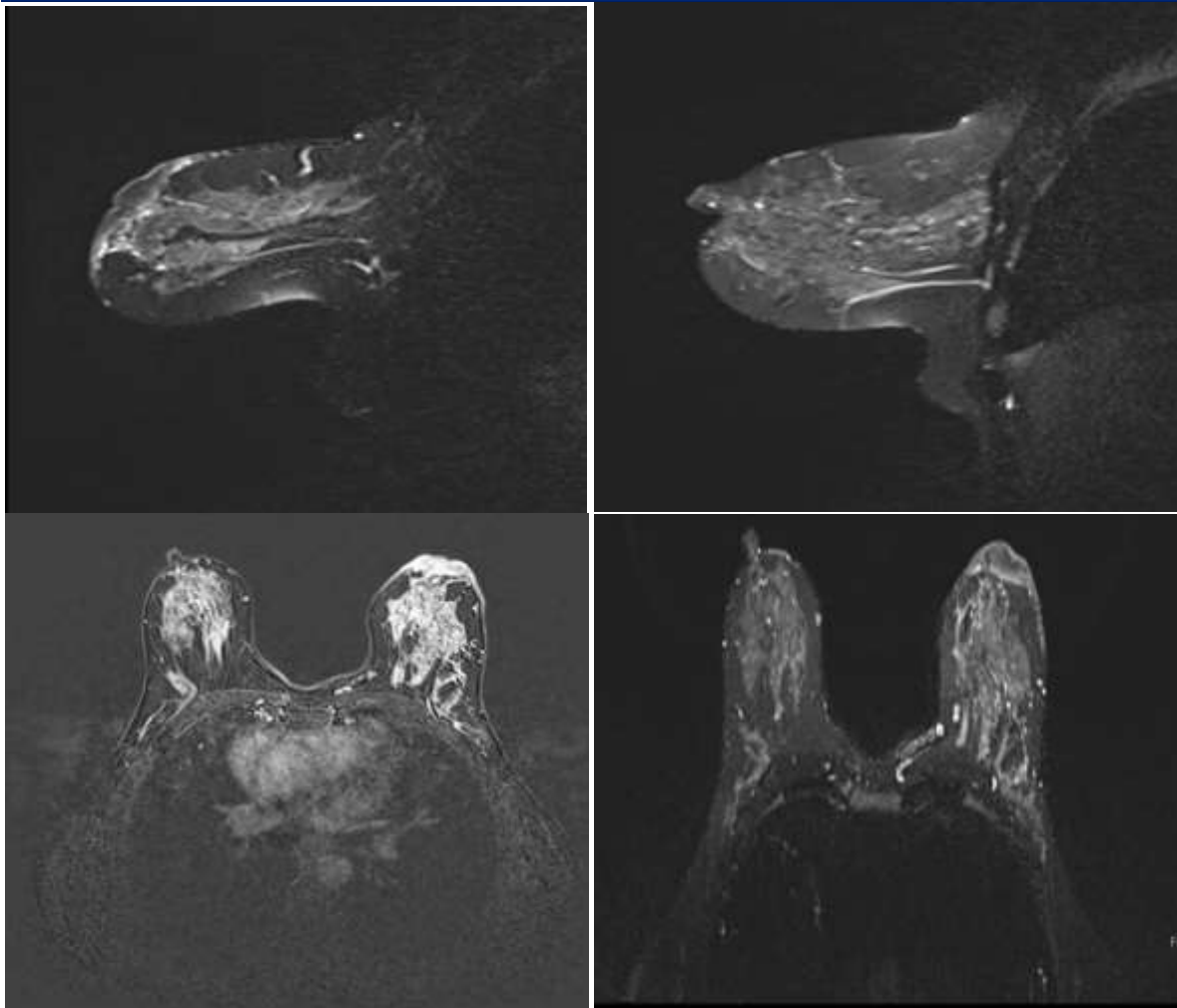


Figure 2

Discussion:

Paget's disease of the breast First described by James Paget in 1874, is a rare form of breast cancer that initially presents as an eczematous rash on the nipple and/or areola.

Breast Paget's disease accounts for 1-5% of all breast cancers [2,3].

It occurs in postmenopausal women in two thirds of cases, with an average age of 62. No clinical or epidemiological factors are known to predispose to the development of this disease [4].

Paget's disease of the nipple could be explained by the malignant transformation of nipple keratinocytes. However, the most accepted theory is the migration of Paget cells from an underlying ductal carcinoma [7].

Paget's disease of the breast is almost always a sign of underlying breast cancer with prevalence of associated cancers ranging from 67 to 100% [5,6].

A theory of in situ transformation has been proposed according to which malignant cells can arise in the nipple epidermis independently of any pathological process in the parenchyma.[8,9] Clinically, Paget's disease of the nipple manifests as a scaly, thickened lesion that is sometimes pigmented with irregular borders. This lesion may be limited to the nipple or extended to the areola and even to the surrounding skin. In more advanced forms, the disease results in an ovoid or polycyclic eczematoid plaque. This plaque may ulcerate and destroy the areola-nipple complex [10].

Clinically, Paget's disease of the nipple manifests as a scaly crusted lesion sometimes pigmented with irregular borders and thickened. This lesion may be limited to the nipple or extended to the areola and even to the surrounding skin.

In more advanced forms, the disease results in an ovoid or polycyclic eczematoid plaque. This plaque may ulcerate and destroy the areola-nipple complex [10].

The diagnosis of Paget's disease is made either by cytological scraping of the nipple or, at best, by nipple-areolar biopsy. Histologically, this lesion is characterized by the presence of pagetic cells in the nipple epidermis. These are large cells with clear cytoplasm and a large irregular hyperchromatic nucleus, the site of mitoses. [11].

Paget's disease cells usually express low molecular weight cytokeratins, including CK7, and this labeling allows, with a sensitivity close to 100% to confirm the diagnosis. However, in very rare cases, CK7 labeling may be negative [12].

The main differential diagnosis of Paget's disease is nipple eczema. However, the unilaterality, the evolution and the lack of response to corticosteroid therapy allow to correct the diagnosis.

Other differential diagnoses, such as psoriasis, superficial basal cell carcinoma, and melanoma, may also be considered and only histology will confirm the diagnosis. Imaging is useful for the diagnosis of underlying breast cancers, the sensitivity of mammography to detect a tumor is 97% in the presence of a palpable mass while it is only 50% in the absence of a palpable mass. Several studies have shown that in cases of Paget's disease of the nipple without a palpable mass and without mammographic abnormalities, histological examination found 43% occult cancers, of which 33-75% were non-invasive cancers and 5%-9% were invasive carcinomas [13].

MRI is more sensitive than mammography for the diagnosis of associated carcinoma in situ with a sensitivity of 95% for the detection of infiltrating ductal carcinoma and 89% for ductal carcinoma in situ. The overall specificity varies between 60 and 85% [14]. However, breast MRI has no significant value in the study of the nipple-areolar plate and only the clinical-radiological comparison can evoke the diagnosis of Paget's disease of the nipple [15].

Mastectomy with or without axillary lymph node dissection has been established as the standard treatment [5,9] for Paget's disease of the breast because of the strong association of underlying breast carcinoma. Currently, breast conservative treatment has been adopted. This treatment consists of performing a central lumpectomy removing the areola-nipple plate followed by radiation therapy [16], in a retrospective study of more than 200 women with nipple Paget's disease, 20% had received conservative treatment, Dalberg et al. found that the type of surgery (conservative or radical) did not influence survival and that the two true prognostic factors were the presence of an underlying infiltrating cancer and the presence of a palpable mass [16].

Dominici et al. in their recent study showed that conservative treatment for Paget's disease of the nipple is a defensible alternative in patients who have limited associated cancer proven by imaging [17].

The performance of a sentinel node is still unclear, it is recommended in case of underlying invasive carcinoma, It does not seem necessary to perform a sentinel node in patients with a central noninvasive tumor, especially if MRI is normal on the rest of the breast [18].

The 15-year survival rate for breast Paget's disease alone or associated with adenocarcinoma in situ is close to 90%, whereas it is 60% when associated with invasive adenocarcinoma [4].

Conclusion:

Paget's disease of the nipple, although rare, must be evoked in front of any eczematiform lesion of the nipple, dragging, not having answered the medical treatment. Confirmation by histology. Mammography and breast ultrasound, possibly with breast MRI, should look for underlying breast cancer and guide surgical management. The prognosis of Paget's disease of the nipple is conditioned by the presence of an associated palpable mass and the invasiveness of the underlying cancer.

Conflict of interest

The authors declare no conflicts of interest.

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