



A Pruritic Eruption

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Ingrid is a 52-year-old woman who complains of a pruritic persistent eruption on her left breast of three years duration. She was treated with various topical steroid preparations overseas. Recently, she returned to Canada and decided to seek the advice of a new physician because of a serosanguinous discharge from the site. She thinks she is allergic to her detergent.



Figure 1. A pruritic persistent eruption on the left breast.

Medical history

She is otherwise healthy and there is no family history of breast cancer.

Physical examination

Examination of the breast reveals an indurated 3 cm red, scaling, crusted plaque on the areolar region. The nipple is retracted and diminished in size. There is no other palpable mass on breast exam. There is no regional lymphadenopathy.

What's your diagnosis?

- Allergic contact dermatitis to detergent
- Irritant dermatitis
- Paget's disease of the breast
- Ecthyma
- Neurodermatitis

Answer: Paget's disease (PD) of the breast

What is your next step?

- Change detergents
- Switch to topical antibiotic cream
- Arrange for skin biopsy and mammogram
- Arrange for allergy testing

Answer: Arrange for skin biopsy and mammogram

About PD

PD of the breast was first described by Sir James Paget, an English surgeon in 1874. He reported a case of an eczematous reaction to ductal carcinoma of the breast. Histologically, there is infiltration and proliferation of Paget cells in the epidermis associated with underlying intraductal carcinoma of the breast. Although somewhat controversial, Paget cells are felt to be malignant glandular cells derived from the intraductal epithelium. They display many of the common tumour cell markers including proto-oncogenes and carcinoembryonic antigen. The ensuing

cutaneous dermatitis is felt to represent the phenomenon of epidermotropism, with spread of malignant cells through the ductal glandular system of the breast into the epidermis.

Mammary PD occurs in < 5 % of all cases of breast cancer. There is no racial predilection. It almost always occurs in women although rare cases have been reported in men. The majority of patients present in their 50s. Often there is a delay in the diagnosis.

Clinically, PD presents as a persistent, red, scaling plaque on the nipple and/or areolar region, with a similar appearance to eczema. The average size is approximately 3 cm in diameter. Often there is nipple retraction or invagination. There may be an associated palpable tumour and/or axillary lymphadenopathy.

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Over ninety per cent of cases of mammary PD have infiltrated breast carcinoma. The presence of a palpable nodule on clinical exam is a poor prognostic sign. Nearly one-half of patients with a palpable breast nodule will have lymph node metastasis. Survival rate is < 40% at five years. Ten year survival is < 30%. However, patients without a breast mass have > 90% survival at five years.

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Surgery is the treatment of choice. A modified radical mastectomy may be required when there is invasive disease. Adjuvant therapy include radiation and chemotherapy.

Rare cases have been reported without underlying breast carcinoma. Nonetheless, a significant number of these patients may still develop disease later on in life and require close surveillance.

Conclusion

PD is an uncommon presentation of breast cancer manifested by an eczematous reaction affecting the areolar region. Any persistent dermatitis of the breast should be considered for skin biopsy. Warning signs include duration of lesion greater than three months, loss of nipple structure, unilateral involvement and lack of response to steroid treatment. **Dx**

Resources

1. National Cancer Institute (U S National Institutes of Health).
2. Kaelin CM: Paget's Disease. In: Harris JR, Lippman ME, Morrow M, Osborne CK (ed): *Diseases of the Breast*. 3rd Edition. Lippincott Williams and Wilkins, Philadelphia, 2004, pp.667-682.
3. Marcus E: The Management Of Paget's Disease Of The Breast. *Curr Treat Options Oncol* 2004; 5(2):153-60.