

## CASE SERIES

# Dermatoses of the nipple

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**D**ermatoses of the nipple are rare, and because gross appearances of these lesions are very similar, differential diagnosis is of great clinical importance. Early lesions of dermatoses are scaly and erythematous, and they can be misdiagnosed as eczema or inflammatory skin disorders of the nipple and treated with topical medication. However, neoplastic dermatoses of different origins with distinct manifestations can be underestimated.

We retrospectively reviewed the cases of 24 patients who received treatment at the Baskent University Adana Hospital for dermatoses of the nipple between January 2002 and December 2007. Through patient records and telephone interviews, we analyzed demographic data, patient histories, ultrasound and mammography findings, surgical procedures and ultimate pathological diagnoses. We used the classification of dermatoses reported by Tavasolli.<sup>1</sup> We also reviewed clinically apparent and histologically confirmed cases of patients with Paget disease.

## RESULTS

Of the 24 patients whose cases we reviewed, 18 had Paget disease, 2 had nipple adenomas, 1 had molluscum contagiosum, 1 had soft fibroma, 1 had an epidermal cyst and 1 had cellular blue nevus (Fig. 1).

### *Patients with Paget disease*

All 18 patients with Paget disease had underlying breast cancer. Of these patients, 13 (72.2%) had invasive adenocarcinoma and 5 (27.8%) had ductal carcinoma in situ (DCIS). Among the 13 patients with invasive adenocarcinoma, histological examinations confirmed that 7 (53.8%) had grade III tumours and 6 (46.2%) had grade II tumours. Of the 5 patients with DCIS, 4 (80.0%) had high-grade tumours and 1 (20.0%) had a low-grade tumour. Metastatic lymph nodes were positive in 10 (55.6%) of 18 patients with Paget disease, and 10 (76.9%) of the 13 patients with invasive adenocarcinoma had metastatic lymph nodes.

Estrogen receptors were negative in 12 (66.7%) of the patients with Paget disease, whereas progesterone receptors were negative in 9 (50.0%) patients. Overexpression of the c-erbB-2 protein as well as estrogen and progesterone receptor negativity indicated an aggressive pattern of tumours associated with Paget disease. Staining for c-erbB-2 was positive for 16 (88.9%) patients with Paget disease. Staining was negative for 1 (5.6%) patient with an invasive tumour, and the protein was overexpressed in 12 (92.3%) of 13 patients with invasive carcinomas and in 4 (80.0%) of 5 patients with DCIS. Seven patients had distant metastases to the bones, lungs and skin after a mean follow-up of 19 (standard deviation 10.5) months.

### *Patients with other dermatoses*

Two patients with nipple adenoma (Fig. 2) and cellular blue nevus were

admitted to our hospital with bloody discharges from the nipples and were referred in case they had a malignant condition or Paget disease.

One patient had soft fibroma with pedunculated character and was referred for a suspicious malignant mass. The patient with molluscum contagiosum and the patients with epidermal cysts of the nipple and cellular blue nevus had cutaneous bulging in the nipple and firm masses.

We treated all of these benign dermatoses by local excision, offering good cosmetic results without relapse. The patient with molluscum contagiosum underwent 5% im-

iquimod therapy administered 3 times a week for 2 months without any recurrent lesions.

## DISCUSSION

Paget disease is associated with an underlying breast carcinoma in 98.5%–100% of cases.<sup>2,3</sup>

In our unit, we perform mastectomy with axillary dissection for patients with Paget disease because these patients may have poor prognoses. Nevertheless, wide local excision with adjuvant radiotherapy may be a good alternative, as emphasized in the literature. In our study, the rate of high-grade tumours, estrogen and progesterone receptor negativity, c-erbB-2 overexpression and metastatic lymph nodes confirmed the relative histologic aggressiveness of Paget disease reported in the literature.<sup>4</sup>

The patients with other dermatoses of the nipple in our series did not exhibit cancerous progression. Fibroma of the nipple is an extremely rare condition, and there have been few cases in the literature.<sup>5</sup> To our knowledge, ours is the first study to present pedunculated fibroma in photomicrographs and images showing stromal details (Fig. 2).

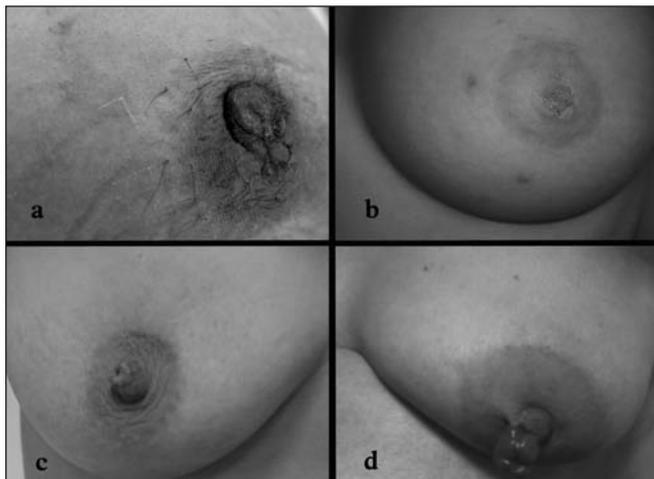
In conclusion, patients with Paget disease have aggressive tumours with underlying cancer. Dermatoses of the nipple can easily be mistaken for benign skin disorders, and benign lesions can be confused with cancerous conditions. As a result, malignancy can be over- or underestimated and treatment should be considered within this setting.

**Competing interests:** None declared.

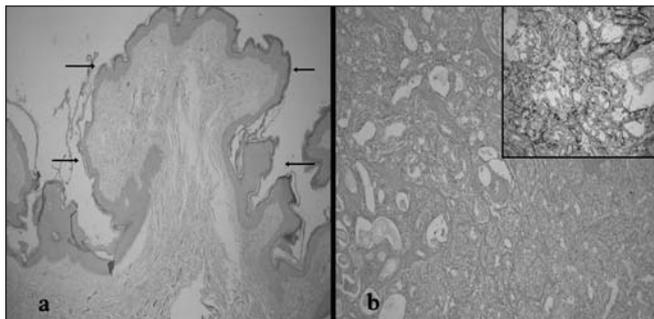
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## References

1. Tavassoli FA. Diseases of the nipple. In: *Pathology of the breast*. 2nd ed. Stamford (CT): Appleton & Lange; 1999. p.731-61.
2. Kothari AS, Beechey-Newman N, Hamed H, et al. Paget disease of the nipple: a multifocal manifestation of higher-risk disease. *Cancer* 2002;95:1-7.
3. Paone JF, Baker RR. Pathogenesis and treatment of Paget's disease of the breast. *Cancer* 1981;48:825-9.
4. Chen CY, Sun LM, Anderson BO. Paget disease of the breast: changing patterns of incidence, clinical presentation, and treatment in the U.S. *Cancer* 2006;107:1448-58.
5. Iancu D, Nochomovitz LE. Pseudoangiomatous stromal hyperplasia: presentation as a mass in the female nipple. *Breast J* 2001;7:263-5.



**Fig. 1.** Typical clinical features of (a) Paget disease, including eroded and scaling nipple areola, (b) molluscum contagiosum (i.e., pearly, papular lesions with dimples in the centre) and (c) cellular blue nevus. (d) A rare example of pedunculated nipple-areola fibroma.



**Fig. 2.** (a) Histological examination of the soft fibroma showing the epidermis raised in a papilliform shape (arrows) and underlying loose collagenous stroma with scattered spindle cells and dilated capillaries (hematoxylin and eosin  $\times 40$ ). (b) Adenoma of the nipple showing glandular pattern (hematoxylin and eosin  $\times 100$ ) Inset: Myoepithelial cells positive for smooth muscle actin (immunohistochemical staining for SMA  $\times 100$ ).