Enlarging Bump on the Scrotum

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Abstract

Extramammary Paget disease is a rare, slow-growing intraepithelial neoplasm of the skin or its underlying appendages. It more commonly affects the apocrine glands of the axilla, vulva, perianal region, scrotum, and/or penis. It often presents as a well-demarcated, thickened, erythematous, or gray-white scaly plaque with indolent growth that may become ulcerated, crusted, papillomatous, or eczematous over time. Pruritus, pain, and burning sensations are common symptoms; however, they are not appreciated by all patients. Many patients are erroneously treated for eczema for months to years before a proper diagnosis is reached. Patients presenting with chronic genital or perineal dermatitis or skin lesions that have been unresponsive to topical therapy should be biopsied for definitive diagnosis.

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Question

A Caucasian male in his late 50s presented to the dermatology clinic 2 months after noticing a new growth on the scrotum that appeared shortly after shaving the area with a razor. The lesion began as an erythematous patch that gradually progressed into a small “bump” of increasing size. He denied existence of pain, pruritus, or burning

sensation. There was no improvement with trimethoprim sulfamethoxazole, azithromycin, or topical ketoconazole provided by outside physicians for possible bacterial or fungal infections. The patient's past medical history was significant for hypertension and mild fatty liver. Of note, recent analysis of prostate-specific antigen levels was normal. His family history was positive for colorectal carcinoma in his mother. Physical examination of the right anterior scrotum revealed a 1.5 × 1.5 cm nontender, friable tumor with surrounding erythema and focal areas of hyperpigmentation (Fig. 1). There was no appreciable inguinal lymphadenopathy. Two 4-mm punch biopsies were performed, one on the friable nodule and another from an adjacent pigmented area.

Histological examination of both biopsies demonstrated pagetoid spreading of poorly differentiated carcinoma along the epidermis and eccrine ducts. Large, pale, vacuolated cells with prominent nucleoli (Paget cells) were seen infiltrating the epidermal-dermal junction (Fig. 2). A pandemic nodular pattern of growth with small gland formation within the tumor was also noted. Immunohistochemistry of the tumor cells was positive for cytokeratin and GATA 3 and negative for S100, Melan A, CK5/6, TTF1, p63, and CDX2. Given the constellation of physical and histological findings, what is your diagnosis?

Color version available online

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Fig. 1. Clinical photograph of a right scrotal lesion.

Fig. 2. Representative histopathologic micrographs of the right scrotal lesion. **a** A cluster of cells (arrow) is visible in the upper layers of the epidermis. H&E. $\times 10$ magnification. **b** At a higher magnification, the cells, either in clusters or as single units, are large, pale, with vacuolated cytoplasm, and devoid of intercellular bridges (arrows). H&E. $\times 40$ magnification.

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Extramammary Paget disease (EMPD) is a rare, slow-growing intraepithelial neoplasm of the skin or its underlying appendages [1, 2]. It is considered an adenocarcinoma of the apocrine glands of the axilla, vulva, perianal region, scrotum, and/or penis [3]. The pathogenesis of EMPD is highly debated; however, current theory suggests that primary EMPD arises as a primary neoplasm from the intraepidermal cells of the apocrine gland ducts or from pluripotent keratinocyte stem cells, while secondary EMPD represents the spread from an underlying visceral neoplasm of the bladder, urethra, prostate, and/or rectum to a dermal adnexal gland or a local organ with contiguous epithelium [4, 5]. Primary EMPD most commonly arises in the vulva of women and rarely in the penoscrotal area of men aged 50–60 years [1, 2].

It often presents as a well-demarcated, thickened, erythematous, or gray-white scaly plaque with indolent growth that may become ulcerated, crusted, papillomatous, or eczematous over time [1, 2, 6]. Pruritus, pain, and burning sensations are common symptoms; however, none were appreciated by our patient [6]. Histopathologic analysis of EMPD showed round, large vacuolated Paget cells with rich cytoplasm, multiple or large nucleoli, irregular and large nuclei, and mitoses [7].

Disease can present as carcinoma in situ or as invasive disease with metastasis to the lymph nodes and/or distant organs [3]. For this reason, adequate workup should include screening for metastatic malignancy after histologic diagnosis was established [6]. A computed tomographic scan of the abdomen and pelvis is recommended to detect any associated or metastatic abdominal or genitourinary cancers [3]. If lymph node metastases are detected clinically or histopathologically, complete ilioinguinal lymph node dissection is indicated [8]. Screening with chest X-ray, colonoscopy, cystoscopy, and serum prostate-specific antigen levels is also performed by some physicians. Poor prognostic indicators include perianal disease, dermal invasion, and lymph node metastasis [3, 6].

Differential diagnosis includes contact dermatitis, fungal infection, psoriasis, eczema, melanoma, squamous cell carcinoma, and intraepidermal spread of visceral carcinoma [1, 6]. Many patients are erroneously treated for eczema for months to years before a proper diagnosis is reached. Heymann [9] suggests that any lesion in an apocrine gland-bearing region that does not

heal within 1 month should be biopsied for suspicion of EMPD.

The standard of care for EMPD is surgical resection, although radiation therapy, 5% imiquimod, and phototherapy can be offered as alternative treatments for patients who decline surgery or are not suitable candidates due to contraindications [2]. Due to financial circumstances, our patient pursued metastatic workup and treatment by an outside physician.

In conclusion, our case highlights the imperative diagnosis of EMPD made by physicians to allow for earlier intervention and prevention of metastatic progression and adverse outcomes. Patients presenting with chronic genital or perineal dermatitis or skin lesions that have been unresponsive to topical therapy should be biopsied for definitive diagnosis.

Keywords

Apocrine glands · Clinicopathologic correlation · Diagnosis · Medical dermatology · Paget disease · Sweat gland tumor · Tumor

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Statement of Ethics

Informed consent was obtained.

Disclosure Statement

The authors have no conflicts of interest to disclose.

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