Ulcerative Vulvitis Circumscripta Plasmacellularis

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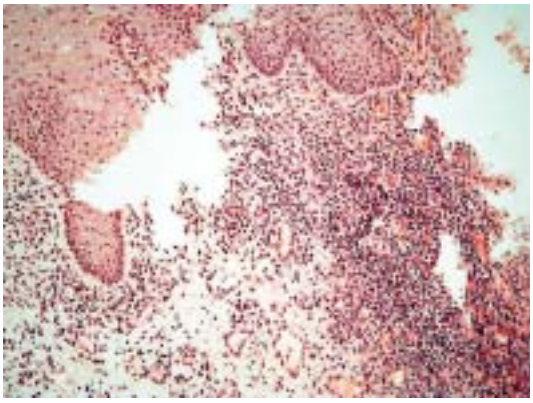
Vulvitis circumscripta plasmacellularis is a pathologic entity of chronic subepithelial dense inflammation with a large quantity of plasma cells. It usually presents as a red patch.

In 1952 Johannes Jacobus Zoon, a Dutch dermatologist, introduced the pathologic entity "plasma cellularis" [1]. He described penile erythroplasia that clinically resembles erythroplasia of Queyrat (an intraepidermal squamous cell carcinoma) but has no malignant sequelae. Later, in 1955, Zoon described two cases of a similar entity in the vulva, and others have reported the same disease in other mucosal sites (mostly oral and conjuctival). Vulvitis circumscripta plasmacellularis is a pathologic entity of chronic subepithelial dense inflammation with a large quantity of plasma cells. Balanitis circumscripta plasmacellularis usually presents as a red patch, but occasionally also as erosions with the tendency to bleed. We report an unusual case of ulcerative VCP in a young woman.

Patient Description

A 24 year old woman presented with a persistent painful vestibule/fourchette vulvar ulcer, with no induration. The ulcer had not healed despite a year of therapy with topical corticosteroids. The patient also complained of recurrent oral aphthous ulcers. On physical examination there were no pathologic findings except for a 1.2 x 1 cm vestibular ulcer with a necrotic core, and no inguinal lymphadenopathy.

Local excision of the ulcer was performed and a 1.2 x 1 x 0.6 cm lesion was sent for histopathologic examination. Histology revealed epithelial acanthosis without atypia. The inflammatory infiltrate comprised mainly plasma cells and some neutrophils. There was dilatation and congestion of vessels without signs of vasculitis [Figure]. Kappa and lambda stains showed the plasma cells to be polyclonal, and periodic-acid Schiff stain did not show any fungal elements. The pathologic diagnosis was compatible with vulvitis circumscripta plasmacellularis, ulcerative type.



A dense lichenoid infiltration of mononuclear cells with a predominance of plasma cells in the infiltrate, dilatation and congestion of blood vessels.(Hematoxylin-eosin x 100).

A workup for Behçet syndrome was negative based on the absence of eye or skin lesions, arthritis and thrombophlebitis, and a negative pathergy test. Leukocyte and erythrocyte sedimentation rate were normal and there were no signs of systemic chronic inflammation. Human leukocyte antigen-B5 (B51) alloantigen was negative. A workup for sexually transmitted diseases including herpes simplex virus, syphilis, *Haemophilus ducreyi* (chancroid), human immunodeficiency virus, *Chlamydia* (lymphogranuloma venereum) and granuloma inguinale was negative. There was no history or signs of *Mycobacterium tuberculosis* exposure, Crohn's disease or systemic lupus erythematosus. There was no history supporting abrasion or a fixed drug eruption.

Comment

Vulvitis circumscripta plasmacellularis is an uncommon genital lesion. The lesion was first reported in uncircumcised elderly men on the glans and prepuce, and was termed balanitis circumscripta plasmacellularis or Zoon erythroplasia [1]. Later, it was described in the vulva. Since the original reports, fewer than 40 cases have been described in the literature, none with progression to malignancy. Treatment is required for the relief of symptoms. VCP has been described under a variety of names, including Zoon vulvitis, benign plasma cell erythroplasia of the female genitalia, and plasmacytosis pudendi.

VCP may appear over a wide age range (8–79 years). Some patients are asymptomatic, while others – as in our case – complain of pruritus, superficial dyspareunia, perineal pain or tenderness. The symptoms are often long-lasting prior to presentation, occasionally even for years. The lesions typically present as glistening, brick-red macular lesions, with multiple pinpoint brighter red spots ("cayenne pepper spots") due to hemosiderin deposition. Balanitis circumscripta plasmacellularis may present with erosions and a tendency to bleed.

The histologic features of VCP include an atrophic epidermis that occasionally shows ulceration with complete effacement of the rete ridge pattern. A decrease in the number and size of the keratinocytes and

VCP = vulvitis circumscripta plasmacellularis

the absence of the horny and granular cell layers account for the epidermal thinning. Atypia and mitoses are absent, although dyskeratotic cells are sometimes found. Spongiosis is an edematous widening of the intercellular spaces between the keratinocytes in the epidermis. Erythrocytes and polymorphonuclear white blood cells are occasionally scattered within the epidermis. A dense lichenoid infiltrate is observed in the dermis [Figure], often extending to the mid-reticular dermis. Plasma cells usually exceed 50% of the infiltrate cells, and lymphocytes and mast cells are also abundant. Vascular proliferation with dilatation of vessels may be seen. Extravasated erythrocytes in the dermal infiltrate often lead to hemosiderin deposition.

The etiology and pathogenesis of VCP is still unknown. Viral, hormonal and autoimmune etiologies have been proposed [2,3]. VCP might represent a non-specific inflammatory response to an undetermined exogenous factor since plasma cells infiltrates are found in some inflammatory conditions of the external genitalia. Predisposing factors such as poor hygiene, heat, sweating, trauma and constant friction have been suggested.

The differential diagnosis of VCP includes: skin diseases such as Paget disease, pemphigus vulgaris, lichen planus and allergic contact dermatitis; sexually transmitted diseases such as herpes genitalis, syphilis, chancroid, lymphogranuloma venereum, granuloma inguinale and human immunodeficiency virus infection; diseases such as Crohn's disease, lupus or Behçet disease; infections such as *Mycobacterium tuberculosis* and mycotic infections; and other conditions such as abrasion, trauma, sexual abuse or fixed drug eruption. A biopsy is essential to confirm the diagnosis and to rule out carcinoma.

The response to therapy is inconsistent. Variable responses have been obtained with estrogens, corticosteroids (topical, aerosolized and intralesional), antifungals, antibiotics, caudal nerve blocks, fulguration, laser ablation, cryotherapy, interferon, etretinate [4], and surgical excision. Some patients achieve long asymptomatic periods with intermittent use of potent topical corticosteroids. Mild topical corticosteroids and antifungal preparations have been associated with poor therapeutic results. Intralesional injections of triamcinolone acetonide or interferon-alpha have resulted in clinical symptomatic improvement of the vulvar lesions. An excellent response to topical cyclosporine has been reported [5]. A course of interferon-alpha resulted in a histologically verified decrease of plasma cell infiltrate and in the disappearance of the herpes simplex virus antigen from the vulvar lesion, suggesting that herpes might be a factor involved in the pathogenesis of VCP. Etretinate, a synthetic retinoid, is thought to act as an immunomodulator through direct inhibition of alloresponsive T cells and through potentiation of suppressor T cell induction. Its effectiveness against VCP supports the theory of an immunologic basis for the condition [4].

In summary, we described a young woman with a painful vestibular vulvar ulcer and recurrent oral aphthous ulcers. Excision of the vulvar ulcer revealed histologic findings compatible with VCP. A workup of Behçet syndrome and sexually transmitted diseases was negative. Furthermore, the absence of vasculitis in the dermal base of the ulcer refutes the diagnosis of Behçet disease. Two years after local excision she is still asymptomatic. We conclude that in the workup of a vulvar ulcer, VCP should be considered in the differential diagnosis.

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