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Case Report

Plasma cell balanitis: an uncircumcised man presenting as chronic balanoposthitis

漿細胞性龜頭炎：未經包皮環切術的男性患者呈現慢性龜頭包皮炎

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This is a case report of an uncircumcised man who presented with chronic balanoposthitis. Plasma cell balanitis was confirmed by skin biopsy. The patient declined circumcision and was subsequently treated with topical corticosteroid with some improvement.

此病例報告為一例未經包皮環切術的男性患者呈現有慢性龜頭包皮炎。皮膚活檢確診為漿細胞性龜頭炎。患者拒絕接受包皮環切術，後經局部類固醇治療病情有改善。

Keywords: Balanoposthitis, plasma cell balantis

關鍵詞：龜頭包皮炎，漿細胞性龜頭炎

Introduction

Plasma cell balanitis (PCB) often presents as chronic balanoposthitis that clinically resembles erythroplasia of Queyrat (EQ). Skin biopsy is required to distinguish the two. The following is a case report of plasma cell balanitis that is confirmed by its unique histologic features. Various treatment options are also summarised.

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Case report

A 30-year-old man presented with asymptomatic penile rash for six months. He is a laboratory technician with good past health. He claimed to be a virgin and denied history of sexually transmitted infection. He did not suffer from any urogenital symptom, arthritis or extra-genital skin eruption. There was no history of irritant to the penis.

On examination, he was an uncircumcised man with a solitary bright red patch on dorsal aspect of prepuce and glans (Figure 1). There was no blister, pustules, phimosis, meatal stenosis or inguinal lymphadenopathy.

Penile swab for infective agents was negative for candida, trichomonas, gonorrhoea and herpes simplex. Besides, screening tests for both syphilis and human immunodeficiency virus infections were negative. Skin biopsy of glan penis revealed a thin epidermis with some diamond-shaped keratinocytes separated by intercellular oedema.

Figure 1. Dorsal aspect of coronal sulcus and prepuce demonstrating balanoposthitis.

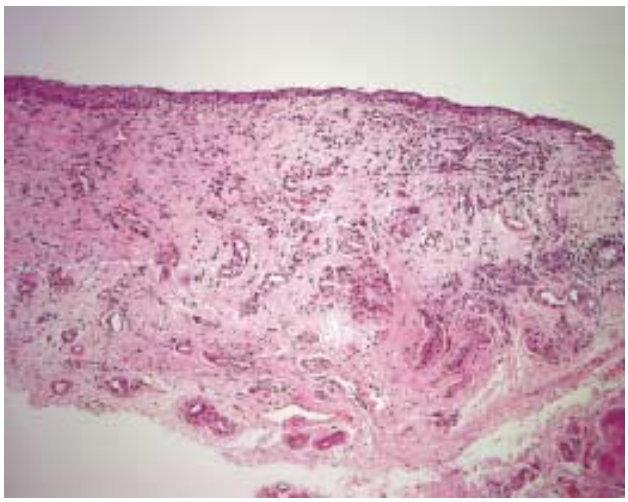

Figure 2. The epidermis was thin. The upper dermis showed a band-like infiltrate with predominance of plasma cells. (H&E x 10 original magnification)

The upper dermis showed a band-like infiltrate with predominance of plasma cells (Figures 2 & 3). The features were consistent with plasma cell balanitis.

As the patient refused circumcision, he was treated with a weak topical steroid. After ten weeks of treatment, there was some improvement particularly on the glans penis.

Discussion

The differential diagnoses in our patients included candidal balanitis, PCB, EQ, psoriasis, lichen planus and Reiter's syndrome. Although candida is the most common infective cause of balanoposthitis, the patient did not have any predisposing factor such as diabetes mellitus. The absence of sexual contact not only decreased the chance of candida contraction, but also made Reiter's syndrome unlikely. Sexually transmitted infections were further excluded by laboratory tests. Psoriasis and lichen planus were unlikely in view of the absence of extra-genital features. The most probable clinical diagnosis was either PCB or EQ.

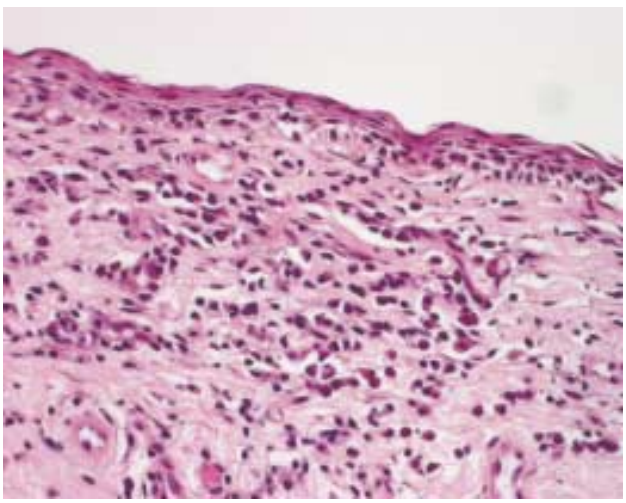

Figure 3. The keratinocytes were flattened and separated by mild intercellular oedema. Some were diamond- or lozenge-shaped. (H&E x 40 original magnification)

To differentiate the last two diagnoses that may exhibit the same clinical appearance, histologic examination is indispensable.[1] In fact when PCB was first described by Zoon in 1952, it was recognised to have unique histologic feature in eight cases that had been diagnosed as EQ.[2]

The skin biopsy ruled out cutaneous malignancy and confirmed PCB. While the presence of plasma cell in the mucosal surface can be a reaction to non-specific stimuli, the thin epidermis that composed of diamond-shaped, flattened keratinocytes is characteristic of PCB.[1] Sometimes significant capillaries dilation and extravasation of erythrocytes are present. This vascular fragility led to the postulated relationship between PCB and lichen aureus.[3] Nevertheless, these vascular features were not prominent in our patient.

Plasma cell balanitis is also named as Zoon's balanitis or balanitis circumscripta plasmacellularis. It usually presents as a solitary red-orange plaque in middle-aged to elderly man. The smooth and shiny surface of PCB may allow distinction with EQ that is more velvety. Sometimes pinpoint purpuric spots are apparent giving rise to a "cayenne pepper surface".[2] Both glans and prepuce can be affected. The symptoms are usually minimal, although pruritus and mild tenderness are reported. It tends to be chronic and may last for months to years.

Rarely, lesions analogous to PCB occur in the vulva (vulvitis chronica plasmacellularis) or other mucosal surfaces (plasmacytosis circumorificialis) including oral mucosa, lip and tongue.[4] The lesions in these mucosal surfaces may also mimick squamous cell carcinoma.

Interestingly, PCB occurs only in uncircumcised men.[5] In a retrospective case-control study, all 27 patients with PCB were uncircumscised among 357 patients with genital dermatoses.[6] In that study, having no circumcision was associated with inflammatory genital dermatoses suggesting that the foreskin may promote inflammation by Koebner phenomenon.

The exact pathogenesis of PCB is unclear. Viral causes have been rejected as both PCR and electron microscopy failed to show viral particles in PCB lesions. Some authors postulated that heat, friction and poor hygiene might predispose development of PCB in patients who were uncircumcised.

Circumcision remains to be the treatment of choice.[2] While PCB in this patient might have a prolonged course, it was asymptomatic. Like many other patients with PCB, our patient declined surgical treatment despite of its efficacy. If promoting hygiene is the essence of circumcision, daily cleaning under foreskin will probably achieve similar benefit as circumcision. Some cases actually respond to drying by exposing the glans to the air for a period of time each day, or by playing a current of air from a hair-dryer over it.[5] However, further study is needed to measure the exact benefits of this personal care.

Other treatment modalities were reported. Topical corticosteroid can relieve symptoms, but it is generally not curative.[2] Both antifungal agent and fusidic acid cream were reported to have some benefits, although oral griseofulvin was found to be ineffective. Intralesional interferon alfa had been tried with some success in the vular analogue of PCB. Carbon dioxide laser was recently found to be successful in ablating PCB lesion.[7]

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