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Balanoposthitis with a Volcano-like Appearance May be the First Clinical Presentation of Undiagnosed Diabetes Mellitus

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ABSTRACT

The incidence of diabetes continues to increase dramatically and it has had an increasing impact on urological practice. Balanoposthitis and acquired phimosis are common urological diseases and are usually managed symptomatically without considering a possible association with diabetes. Herein, we describe a prepuce with a volcano-like appearance, a very specific finding, in a 45 year-old man. This may be the first clinical presentation of undiagnosed diabetes mellitus.
Key words: diabetes, balanoposthitis, prepuce

CASE PRESENTATION

A 45 year-old man presented to our clinic with burning and itching of the penis. In recent months he had gradual loss of elasticity of the foreskin and acquired phimosis. Physical examination showed a volcano-like appearance and generalized erythema of the prepuce with a dry glazed appearance (Fig. 1). His body weight was 117 kg and his body mass index was 36.9 kg/m^2. He denied a history of diabetes mellitus or other systemic diseases, and unprotected sexual intercourse.

Urinalysis demonstrated marked glycosuria (1,000 mg/dl), pyuria (25-30/HPF) and yeast in the urine sediment. Biochemistry study revealed a fasting plasma glucose level of 137 mg/dl, a HbA1c of 12 %, and a creatinine level of 0.8 mg/dl. His lipid panel showed a total cholesterol of 243 mg/dl, triglycerides of 218 mg/dl, and low-density lipoprotein of 158 mg/dl. He underwent a circumcision and took short-term oral antibiotics. The wound healed well without complications 7 days postoperatively. The pathology of the prepuce was consistent with chronic inflammation. He received diabetes management and regular follow-up at a diabetes clinic without another episode of urinary tract infection.

DISCUSSION

Diabetes presenting with acquired phimosis was reported as long ago as 1971 [1]. It is well established that diabetes is related to balanoposthitis and acquired phimosis [2]. Chopra et al and Cates et al have found that diabetes is present in about one third of men with acquired phimosis [3,4]. One recent study found 26% of adult patients with acquired phimosis had a history of type II diabetes [5]. Diabetes was newly diagnosed in 8% of these patients, which hints that balanoposthitis and acquired phimosis are cutaneous markers of diabetes mellitus in apparently healthy males.

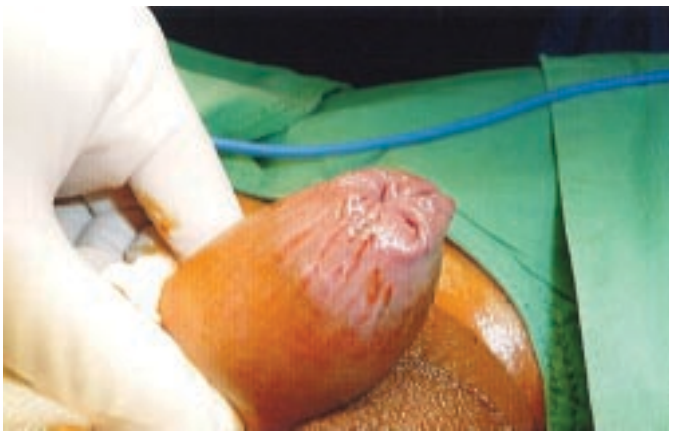

Fig. 1. Volcano-like appearance of diabetes-related balanoposthitis with generalized erythema, a dry glazed appearance, acquired phimosis and surrounding fissures.

Based on our consecutive clinical observations of balanoposthitis in diabetic patients, we propose that a volcano-like appearance may be a typical finding in diabetic balanoposthitis. The presentation may be more severe in patients with underlying diabetes mellitus than those without, with edema and fissuring of the foreskin, which may become non-retractile [6]. Preputial fissures, a hallmark of this condition, are believed to be caused by complex multiple factors [7]. Accumulation of advanced glycation end products in the foreskin, which impairs production of collagen and extracellular organization and results in alteration of skin elasticity and hydration, plays an important role. Other studies mention impairment of sebaceous gland function and a tendency to reduced hydration in the stratum corneum. Repeated retracting the stiff foreskin during urination or sexual intercourse can be responsible for vertical fissuring of the foreskin, and this can further lead to fibrosis in the form of phimosis. However, one study using light microscopy showed no significant histologic differences between diabetic and non-diabetic patients [8]. Thus, clinicians and urologists should check the fasting glucose of patients with a prepuce with a volcano-like appearance.

Numerous studies have reported the growing impact of diabetes on urological practice with erectile dysfunction, hypogonadism, voiding dysfunction, incontinence and urinary tract infection all more common in diabetic than non-diabetic patients [9]. These conditions are usually associated with metabolic syndrome and obesity as in this re-

ported patient. In 2006, Drivsholm et al have found that abnormal thirst (63.7%), fatigue (61.0%), frequent urination (53.9%), unintended weight loss (34.8%), general itching (27.2%) and balanitis (12.0%) were the most common prediagnostic symptoms in diabetic patients [10]. These clinical conditions might be the initial presentation of previously undiagnosed diabetes. It is important to recognize this condition early to avoid later complications.

In conclusion, we must bear in mind that balanoposthitis and acquired phimosis may be the first clinical signs of diabetic mellitus in uncircumcised males. Diagnosing diabetes in these men may not only reduce operative complications, but also prompt appropriate diabetic management and reduce long-term complications. Therefore it is important that appropriate testing should be carried out when assessing men with balanoposthitis and acquired phimosis.

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