

Commentary on “Phimosis with Preputial Fissures as a Predictor of Undiagnosed Type 2 Diabetes in Adults”

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After reading the article by Huang et al. (1) we have some comments. The authors describe a diagnosis they call “acquired phimosis”, which according to the description and clinical picture should be correctly diagnosed as lichen sclerosus (LS) with secondary phimosis. The diagnosis of LS is clinical, but since it is a chronic disease the diagnosis should generously be supported by a biopsy. These patients often present at Departments of Dermatology-Venereology and are treated primarily with steroid ointments and sometimes referred for circumcision (2, 3). There is a well-known link between LS and autoimmunity, especially regarding thyroiditis in females, but the link in males with LS to autoimmunity, including diabetes mellitus, is weaker (4, 5).

Preputial fissures can be seen in LS, but one must also consider candidosis, which is commonly seen in patients with undiagnosed (or not optimally treated) diabetes.

Almost every dermato-venereologist has seen and treated patients in whom genital dermatitis caused by *Candida* is the primary symptom and, in these cases, diabetes is always considered as a co-morbidity.

In conclusion, we strongly suspect that the cases described in the study by Huang et al. are, in fact, LS, and that biopsies could have added valuable information to the article. Also, LS in males does not have the strong link to autoimmunity, including diabetes mellitus, that we see in females. However, we do agree that *Candida* infection is commonly seen in patients with diabetes. Therefore we would like to emphasize that it is important to correctly diagnose and treat both LS and *Candida*.

This underlines the useful cooperation with dermato-venereologists that should be implemented whenever patients present with seemingly new skin symptoms.

Reply to the Commentary by Nylander & Tunbäck

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As Nylander & Tunbäck point out, our report initiates a debate regarding the diagnosis of undiagnosed type II diabetes vs. lichen sclerosus (LS) (1). It is notable that LS is an inflammatory skin disease that usually involves the anogenital area and is accompanied by pruritus, soreness, anal discomfort, and sexual and urinary dysfunction; however, it may also be asymptomatic (3). Early manifestations of male genital LS are greyish or bluish-ivory discoloration of the glans, the inner surface of the prepuce, and/or sometimes considerable telangiectasia. Subsequently, the skin thins, sclerotic plaques appear, and the prepuce tightens and becomes non-retractile (6). The diagnosis of LS is usually clinical. Thus, all the clinical pictures available in our study were reviewed by an independent dermatologist (YLT). Almost all pictures revealed oedema, maceration and vertical fissure circling the entire preputial ring, collection of smegma, and erythema over the distal foreskin and glans, but did not reveal other classical dermatological features of LS, suggesting that LS was less likely.

Although biopsy is not necessary in all patients, particularly if the clinical picture is diagnostic, a confirmatory biopsy is helpful. Typically, histological features of LS are hyperkeratosis, epidermal atrophy, basal cell degeneration, dermal hyalinization and a band-like lymphocytic infiltrate (7). Thus, the pathology of the prepuce in patients elected for circumcision in our study was further reviewed by an independent pathologist (HCC). The findings from the prepuces were consistent with chronic inflammation and the absence of typical histological features of LS. While pathological data is not available for all patients, the consistent results from the dermatologist and pathologist addressing the clinicopathological features indicate that the correct diagnosis should be: *undiagnosed diabetes with balanoposthitis*.

It is important to note that once patients consult a physician and are diagnosed with LS the course is usually chronic progressive or relapsing (8). Although spontaneous remission is known in early and mild cases,

Vincent & MacKinnon reported that only 17.9% of cases in boys had resolved after 3 months treatment with locally applied steroid-based creams (9). However, after blood sugar control, preputial fissures improved in 82% of patients without circumcision in our study, which supports our novel findings.

We fully agree with the comments from Nylander & Tunbäck, uncontrolled diabetes mellitus, like LS and candidiasis, can lead to chronic inflammation and fibrosis of the foreskin (3, 10, 11). A stiff, inelastic foreskin, which is repeatedly retracted for urination and/or sexual intercourse, may cause preputial fissure. However, the prevalence of diabetes mellitus is present in 9.6% of persons aged over 20 years in the general population, compared with only 0.0014% of male patients with LS in all age (12, 13). Needless to say, when patients

present with preputial fissures, poorly controlled or undiagnosed diabetes is the main differential diagnosis. Furthermore, based on an internet survey of 20 Indian dermatologists who care for more than 60,000 dermatological outpatients, Verma & Wollina demonstrated that 75% of patients with *Candida* balanoposthitis were known to the clinics as cases of previously diagnosed diabetes and undiagnosed diabetes. Interestingly, in the study, 31% of patients were newly diagnosed diabetes by dermatologists in the first instance. Therefore, it is reasonable to screen for diabetes by blood testing in male patients with preputial fissures.

In conclusion, we believe that phimosis with preputial fissures is a highly predictive sign of undiagnosed diabetes in men. Patients presenting with phimosis and preputial fissures should undergo blood testing for diabetes.

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