

Flat condylomata of the penis presenting as patchy balanoposthitis

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Abstract

Fifty patients presenting with either primary or recurrent patchy balanoposthitis which became aceto-white after the application of 5% acetic acid underwent biopsy. Microbiological screening, including Grocott staining of the biopsy material for fungal hyphae was performed. Forty nine biopsies showed marked koilocytosis suggestive of human papilloma virus (HPV) infection, and of these, only three showed fungal hyphae. This study suggests that HPV may be associated with some cases of patchy balanoposthitis.

The causative micro-organisms in balanoposthitis have previously been reported as *Candida spp.*,¹ group B streptococci,² Herpes simplex virus,³ *Trichomonas vaginalis*,⁴ anaerobic organisms⁵ and *Gardnerella vaginalis*.⁶ Flat non-papilliferous lesions, sometimes referred to as "Non condylomatous wart virus infection" (NCWVI) or "subclinical papilloma virus infection" are well documented in the lower female genital tract⁷ and have also been described as occurring asymptotically in men.⁸ Although balanitis has been considered in the differential diagnosis of flat condylomata,⁹ no symptoms have previously been attributed to these.

We had observed in some patients who presented with a patchy erythematous maculo-papular eruption of the prepuce and glans penis, that the affected areas became aceto-white after the application of 5% acetic acid. These areas were visible to the naked eye and recalled the lesions of NCWVI seen at colposcopy. This finding prompted a study to investigate the possible association between HPV and patchy balanoposthitis.

Materials and methods

Male patients attending the Department of Genito-

Urinary Medicine at the Birmingham General Hospital were studied. One homosexual and 67 heterosexual men who presented with either primary or recurrent patchy balanoposthitis during the period between April and November 1989 were recruited. Patients with urethritis or ano-genital warts at presentation or in the previous three months were excluded.

A standard history was taken and in particular any history of sexual contact with ano-genital warts was noted. Examination included a urethral smear and cultures for chlamydia and gonorrhoea. Sub-preputial cultures for candida were taken. Penile lesions were noted and photographed. The inner prepuce and glans penis was then soaked with 5% acetic acid for 3-5 minutes. Any aceto-white areas were noted and photographed.

In patients with aceto-white changes informed consent was obtained. A representative aceto-white area was infiltrated with 1% lignocaine and a biopsy was taken by curettage. A further biopsy was taken from a non-acetowhite area in 10 patients. Histological examination of the biopsies included Grocott staining for fungal hyphae. The diagnosis of flat condylomata and probable HPV infection was based on the presence of koilocytosis, orderly maturation and parabasal hyperplasia without atypia or abnormal mitotic figures.

Results

Patient age ranged from 18-65 years (median 28). Forty six (68%) patients presented with a non-irritant rash, 14 (21%) with penile irritation and rash and eight (12%) with irritation alone. Seventeen (25%) had used topical anti-fungal agents without benefit. Fourteen (21%) patients gave a past history of balanoposthitis. A further four (6%) had been treated for penile warts in the past. Six (9%) patients gave a contact history of genital warts.

Before the application of acetic acid the appearance was typically of patchy maculo-papules or patchy erythematous macules involving the inner prepuce and the glans penis (fig 1). These became aceto-white after application of 5% acetic acid in 50 (74%) patients (fig 2). Of these 50 patients with aceto-white changes, 14 presented with soreness and irritation.

Forty nine patients were found to have histological

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Fig 1 Patchy balanoposthitis before application of 5% acetic acid.

evidence of flat condylomata (fig 3). Candidal culture was negative in all of the above patients but four had fungal hyphae demonstrated on Grocott staining of the biopsies. In only one patient with no histological evidence of flat condyloma were fungal hyphae demonstrated and in this case *Candida spp* was isolated on culture. Candidal culture was positive in two patients with patchy balanoposthitis who did not have associated aceto-white changes. None of the 10 biopsies from non-acetowhite areas showed evidence of flat condylomata or fungal hyphae. Asymptomatic infection with *Chlamydia trachomatis* was detected by culture in six (9%) patients.

Discussion

There have been several reports in the literature of lesions of NCWVI in male consorts of women with HPV infection,¹⁰⁻¹⁴ but no symptoms or overt clinical signs have previously been ascribed to this. We

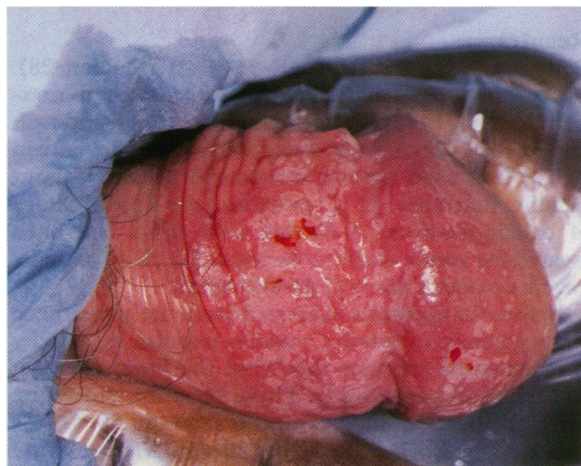


Fig 2 Aceto-white lesions after application of 5% acetic acid.

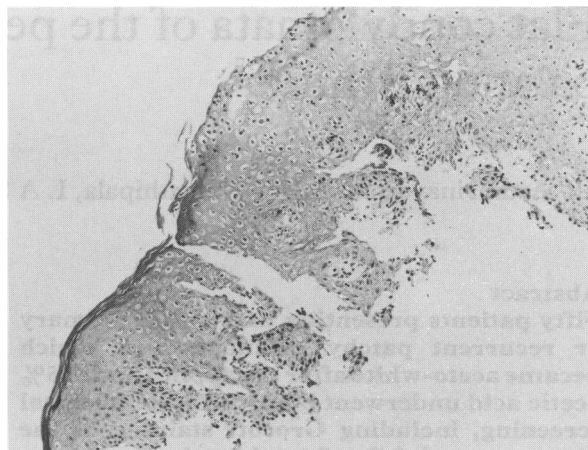


Fig 3 Photomicrograph showing typical koilocytes in stratified squamous epithelium (Haematoxylin and eosin $\times 95$).

describe 49 patients presenting with patchy balanoposthitis in association with histological evidence compatible with HPV infection. Fourteen of these presented with soreness and irritation. Similar symptoms have been described in association with NCWVI of the vulva.¹⁵ Of the 50 patients biopsied, three had evidence of mixed fungal and HPV infection and only one patient had a purely candidal balanitis.

The diagnosis of flat condylomata in this study was based on the presence of koilocytes. Although koilocytosis is highly suggestive of HPV infection, it cannot be considered as proof of HPV and future studies should include HPV-DNA detection or in-situ hybridisation of the biopsy material. Sexual partners were not assessed in this study but six (9%) patients gave a history of sexual contact with genital warts. As HPV types 16 and 18, with known oncogenic potential,¹⁶ have been associated with male subclinical HPV infection¹² future studies should not only include HPV typing but also investigate sexual partners as well.

This study illustrates that patchy balanoposthitis may be associated with clinical and histological evidence suggestive of HPV infection. A double blind placebo-controlled study evaluating the efficacy of podophyllotoxin in the treatment of these patients is now in progress.

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