Diagnosis

- Clinical appearance
- Subpreputial culture—*Streptococcus* spp *(A, B and D) and Staphylococcus aureus* have been isolated from men with balanitis.[15-17] Other organisms may also be involved.

Management

- Treatment can be topical for mild symptoms
- Severe cases may require systemic antibiotics.

Recommended regimens

Severe cases may require systemic antibiotics while awaiting culture results[23]

- If symptoms are severe treat with 10 days of penicillin to cover for Group A Streptococci (1,D)

Alternative regimens (2,D)

- Oral antibiotics dependent on the sensitivities of the organism isolated.
- Mupirocin ointment 2–3 times per day for 7–10 days
- Clobetasone butyrate with Nystatin and Oxytetracycline cream once or twice daily for 7–10 days

Sexual partners

- Case reports suggest Group A streptococci may be transmitted by fellatio[17]

Sexually transmitted infections (STIs)

Cases of balanoposthitis have been described with:

- Syphilis[19]
- Human papillomavirus[14]
- Herpes simplex virus[26]
- *Trichomonas vaginalis* [20]

Management is as per specific guidelines.[9]

Lichen sclerosus[4,6,27,28,29,30,31]

Aetiology

An inflammatory scarring skin condition: although an autoimmune pathogenesis has been postulated, it may be due to chronic occluded contact with urine in the uncircumcised.[32] The condition occurs in all ages. It is probably responsible for many cases of phimosis in childhood.[6] Obesity, congenital and acquired anatomical abnormalities (hypospadias), piercing and urological surgery are predisposing factors.

Clinical features[6,27,28,29,30,31]

Symptoms

- Itching, soreness, splitting, haemorrhagic blisters, dyspareunia, problems with urination including post micturition micro-incontinence or dribbling.
- May be asymptomatic.

Signs

- Typical appearance: lichenoid (lilac) balanoposthitis with white patches on the glans, often with involvement of the prepuce. There may be subtle or florid Zoonoid inflammation and also haemorrhagic vesicles, purpura and rarely blisters and ulceration. Architectural changes include blunting of the coronal sulcus, destruction of the frenulum, phimosis or 'waisting' of the prepuce (constrictive posthitis), and meatal thickening and narrowing.

Complications

- Phimosis and paraphimosis
- Urethral stenosis
- Penile intraepithelial neoplasia (PeIN) and malignant transformation to squamous cell carcinoma. The published risk ranges from 0 to 12.5%.[6,29,30,33] In established penile cancer, the association with lichen sclerosus is thought to be about 50% (the other 50% being associated with HPV)[34]
- Extra-genital disease can occur.
- In contrast with females, perianal disease is uncommon.

Diagnosis

- Typical clinical features
- Biopsy: this initially shows a thickened epidermis which then becomes atrophic with follicular hyperkeratosis. This overlies a band of dermal hyalinisation with loss of the elastin fibres, with an underlying perivascular lymphocytic infiltrate. A negative biopsy does not exclude lichen sclerosus, and a positive biopsy does not exclude squamous cell carcinoma or PeIN elsewhere. The choice of the area biopsied is important both in terms of the risks and in getting an adequately representative sample from any persistent areas of hyperkeratosis, erosion or erythema, or new warty or papular lesions. Several mapping biopsies may be required if there is extensive abnormality.[27] Histological interpretation can be difficult and needs clinico-pathological correlation.

Management[27-30,35]

Recommended regimens

- Soap free washing, avoidance of contact with urine, for example by application of barrier preparations such as petroleum jelly, weight loss, removal of genital jewellery (1,D)[29,30,31,35,36]