Approach to balanitis/balanoposthitis: Current guidelines

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INTRODUCTION

Balanitis describes inflammation of the glans penis and posthitis means inflammation of the prepuce. In practice, both areas are often affected together, and the term balanoposthitis then used. It is a collection of disparate conditions with similar clinical presentation and varying etiologies affecting a particular anatomical site [Table 1]. Balanitis is common in uncircumcised men as a result of poorer hygiene and aeration or because of irritation by smegma and in many cases preputial dysfunction is a causal or contributing factor. Balanitis may be more severe in the presence of some underlying medical conditions. It has been reported as a source of fever and bacteremia in neutropenic men and candidal balanitis may be especially severe in patients with diabetes mellitus.[1]

CLINICAL FEATURES

Symptoms and signs vary according to etiology. Descriptions of the typical appearances of infective balanitides are discussed in detail [Table 2].

APPROACH TO PATIENT WITH BALANITIS

Diagnosis [Table 2]

Balanitis is a descriptive term covering a variety of unrelated conditions, the appearances of which maybe suggestive, but should never be thought to be pathognomonic, and biopsy is sometimes needed to exclude premalignant disease.

Management [Table 2]

The objectives of management are:

- To minimize sexual dysfunction
- To minimize urinary dysfunction
- To exclude penile cancer
- To treat premalignant disease
- To diagnose and treat sexually transmitted disease.

*All persistent/undiagnosed genital lesions regardless of appearance must be evaluated for herpes

Take home message:

- Predisposing factors include poor hygiene and over washing, over-the-counter (OTC) medications, as well as nonretraction of the foreskin

Table 1: Conditions affecting the glans and prepuce[2]

Infectious	Inflammatory dermatoses	Premalignant (penile carcinoma *in situ*)
C. albicans	Lichen sclerosus	Bowen's disease
Streptococci	Lichen planus	Bowenoid papulosis
Anaerobes	Psoriasis and circinate balanitis	Erythroplasia of Queyrat
Staphylococci	Zoon's balanitis	
*T. vaginalis**	Eczema (including irritant, allergic and seborrheic)	
HSV*	Allergic reactions (including fixed drug eruption and Stevens-Johnson syndrome)	
Human papilloma virus*		
*M. genitalium**		

*Sexually transmissible infections. HSV=Herpes simplex virus; *C. albicans=Candida albicans*; *T. vaginalis=Trichomonas vaginalis*; *M. genitalium=Mycoplasma genitalium*

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- Many cases of balanitis seen in practice are a simple intertrigo; that is, inflammation between two layers of skin with bacterial or fungal overgrowth
- Rapid resolution can be achieved most frequently in practice by advising the patient to keep his foreskin retracted if possible, having advised him of the risk of paraphimosis
- Saline baths are also useful and medicated OTC talcum powders are helpful in drying the area. This advice is simple, but compliance may be challenging
- Many patients will present having tried antifungal creams, often obtained OTC. Such cases usually come with relapse. The simple measures have a more durable effect

Table 2: Infectious causes[2]

Organism	Clinical features*	Diagnosis	Management
Candidal balanitis	Erythematous rash with soreness and/or itch, blotchy erythema with small papules which may be eroded, or dry dull red areas with a glazed appearance	Urinalysis for glucose Sub-preputial culture/swab for primary candidasis/candidal superinfection-to be done in all cases Investigation for HIV or other causes of immunosuppression	Clotrimazole cream 1% Miconazole cream 2% Alternative regimen Fluconazole 150 mg stat orally Nystatin cream - if resistance suspected Topical clotrimazole/miconazole with 1% hydrocortisone - if marked inflammation Treat sexual partners - to reduce the reservoir of infection in the couple
Anaerobic infection	Foul smelling sub-preputial inflammation and discharge; in severe cases associated with swelling and inflamed inguinal lymph nodes Preputial edema, superficial erosions; milder forms also occur	Gram stain may show fusiform/ mixed bacterial picture Sub-preputial culture wet prep or NAAT (to exclude other causes) *G. vaginalis* is a facultative anaerobe which may be isolated Swab for HSV infection if ulcerated	Advice about genital hygiene Metronidazole 400 mg twice daily for 1 week Milder cases - topical metronidazole Alternative regimen Coamoxiclav (amoxycillin/clavulanic acid) 375 mg 3 times daily for 1 week Clindamycin cream applied twice daily until resolved
Aerobic infection	Variable inflammatory changes including uniform erythema and edema	Sub-preputial culture *Streptococci* spp. and *S. aureus* have both been reported as causing balanitis	Usually topical Triple combination (clotrimazole 1%, beclometasone dipropionate 0.025%, gentamicinsulfate 0.3%) applied once daily Severe cases - systemic antibiotics Erythromycin 500 mg QDS for 1 week Co-amoxiclav (amoxycillin/clavulanic acid) 375 mg 3 times daily for 1 week Alternative regimens depend on the sensitivities of the organism isolated
T. vaginalis	Superficial erosive balanitis which may lead to phimosis	Wet preparation from the subpreputial sac demonstrates the organism Culture and NAAT can also be carried out	Metronidazole 2 g orally in a single dose or Secnidazole 2 g orally in a single dose Alternative regimen Metronidazole 400 mg orally twice a day for 7 days
TP	Multiple circinate lesions which erode to cause irregular ulcers have been described in the late primary or early secondary stage. A primary chancre may also be present	Dark field microscopy, TP NAAT and DFA-TP will confirm the diagnosis. This should ideally be done in every case TPHA coupled with nontreponemal serological tests (VDRL/RPR), though of limited value, should be performed since they are useful for follow-up	Single IM administration of 2.4 MU of benzathine penicillin or Doxycycline 100 mg orally BID for 2 weeks or Tetracycline 500 mg orally QID for 2 weeks or Erythromycin 500 mg orally QID or Ceftriaxone 1 g IM/IV daily for 8-10 days
Herpes simplex [Figure 1]	Grouped vesicles on erythematous base over glans, prepuce and shaft which rupture to form shallow erosions. In rare cases primary herpes can cause a necrotizing balanitis, with necrotic areas on the glans accompanied by vesicles elsewhere and associated with headache and malaise*	Tissue scraping from base of erosion subjected to Tzanck smear IgG and IgM for HSV Cell culture and PCR-preferred HSV tests for persons who seek medical treatment for genital ulcers or other mucocutaneous lesions	Acyclovir 400 mg orally 3 times a day for 7-10 days or Acyclovir 200 mg orally 5 times a day for 7-10 days or Famciclovir 250 mg orally 3 times a day for 7-10 days or Valacyclovir 1 g orally twice a day for 7-10 days

Contd...

Table 2: Contd...

Organism	Clinical features*	Diagnosis	Management
Human papilloma virus	Papilloma virus may be associated with a patchy or chronic balanitis, which becomes acetowhite after the application of 5% acetic acid	Diagnosed clinically	Patient-applied[3] Podophyllotoxin (podofilox) 0.5% solution or gel-twice daily for three consecutive days, but no more than 4 weeks or Imiquimod 5% cream-applied at bedtime 3 times/week for a maximum of 16 weeks, and must be left in place for 6-10 h following application or Sinecatechins 15% ointment (not available in India) Provider-administered Podophyllin resin 20% in a compound tincture of benzoin - once a week for 6-8 week or Cryotherapy with liquid nitrogen or cryoprobe. Repeat applications every 1-2 weeks or TCA/bichloroacetic acid - 80-90% - once per week for an average course of 6-10 weeks or Surgical removal either by tangential scissor excision, tangential shave excision, curettage, or electrosurgery
Circinate balanitis	Greyish white areas on the glans which coalesce to form "geographical" areas with a white margin. It may be associated with other features of Reiter's syndrome/psoriasis/HIV but can occur in isolation	Screening for *C. trachomatis* infection-NAAT for *C. trachomatis* performed on an intraurethral swab or urine specimen is the preferred test A nonNAAT or culture for *C. trachomatis* performed on an intraurethral swab specimen is acceptable Biopsy: Spongiform pustules in the upper epidermis, similar to pustular psoriasis	Azithromycin 1 g orally in a single dose or Doxycycline 100 mg orally twice a day for 7 days Hydrocortisone cream 1% applied twice daily for symptomatic relief Alternative regimen Erythromycin base 500 mg orally 4 times a day for 7 days or Levofloxacin 500 mg orally once daily for 7 days or Ofloxacin 300 mg orally twice a day for 7 days Treatment of any underlying infection If associated with psoriasis: Moderately potent topical steroids and emollients

*Clinical features in immunocompetent individual. HSV=Herpes simplex virus; VDRL=Venereal Disease Research Laboratory; RPR=Rapid plasma regain; TPHA=*Treponema palladium* hemagglutination assay; DFA-TP=Direct fluorescent antibody-*Treponema palladium*; PCR=Polymerase chain reaction; *C. trachomatis*=*Chlamydia trachomatis*; NAAT=Nucleic acid amplification test; IV=Intravenous; IM=Intramuscular; TCA=Trichloroacetic acid; *T. vaginalis*=*Trichomonas vaginalis; S. aureus*=*Staphylococcus aureus; G. vaginalis*=*Gardnerella vaginalis*

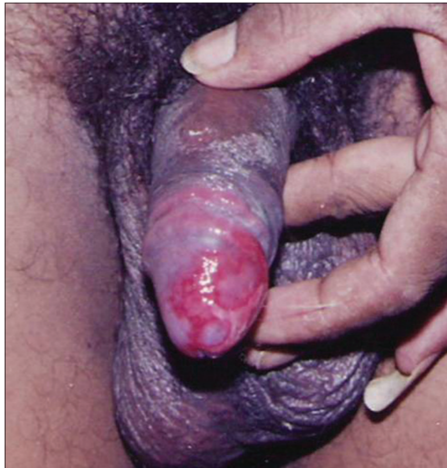

Figure 1: Herpetic balanitis

- HIV should be ruled out in every case not responding to therapy/having atypical presentation.

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