Balanitis

Balanitis is inflammation of the glans penis. If the foreskin is also inflamed, the correct term is balanoposthitis, although balanitis is commonly used to refer to both.

Epidemiology [1]

- Balanitis is more common in men than in boys.
- Balanitis affects about 4% of uncircumcised boys between the ages of 2-5 years. As the foreskin matures, it becomes less susceptible to this condition, so it is less common in older boys.
- Balanitis is uncommon in circumcised boys and men, partly because circumcision reduces the risk of inflammatory skin conditions which may cause balanitis.
- A Portuguese retrospective study found that balanitis was diagnosed in 10.7% of men attending a sexual health clinic between 1995 and 2004.

Risk factors [2]

- The most important risk factor is diabetes mellitus.
- Use of oral antibiotics.
- Poor hygiene in uncircumcised males.
- Immunosuppression.
- Chemical or physical irritation of glans.

Balanitis causes (aetiology) [1] [3]

- Many causes of balanitis seen in practice are a simple intertrigo.

- Infection with candida is the cause in less than 20% of cases. Often, candida is an opportunistic pathogen, signifying an underlying dermatosis [4] .
- Bacterial cases may be polymicrobial.

Infection

- *Candida* spp.
- Staphylococci/streptococci (especially Group B).
- Anaerobes.
- *Gardnerella vaginalis.*
- *Trichomonas* spp.
- *Entamoeba histolytica* (can cause severe oedema and rupture of foreskin).
- *Borrelia vincentii.*
- *Treponema pallidum* (syphilis).
- Viral - eg, herpes simplex, human papillomavirus.

Dermatological

- Fixed drug eruption (particularly with sulfonamides and tetracycline).
- Circinate balanitis (may be associated with reactive arthritis).
- Balanitis xerotica obliterans/lichen sclerosus.
- Zoon's balanitis (plasma cell infiltration); a benign, idiopathic condition presenting as a solitary, smooth, shiny, red-orange plaque of the glans and prepuce of a middle-aged to older man.
- Queyrat's erythroplasia (penile Bowen's disease - carcinoma in situ) [5] .
- Psoriasis.
- Lichen planus.
- Leukoplakia.

- Seborrhoeic dermatitis.
- Pemphigus.
- Pemphigoid.

Miscellaneous

- Irritation or contact dermatitis: wet nappies, poor hygiene, smegma, soap, condoms.
- Trauma: zippers, accidental or inappropriate foreskin retraction by a child/parent.
- Stevens-Johnson syndrome.
- Severe oedema due to right heart failure.
- Morbid obesity.

Balanitis symptoms (presentation)

- Sore, inflamed and swollen glans/foreskin.

By Maxmax33, CC0, via Wikimedia Commons

- Non-retractile foreskin/phimosis.
- Penile ulceration.
- Penile plaques.
- Satellite lesions.
- May be purulent and/or foul-smelling discharge (most common with streptococcal/anaerobic infection).
- Dysuria.

- Interference with urinary flow in severe cases.
- Obscuration of glans/external urethral meatus.
- Impotence or pain during coitus.
- Regional lymphadenopathy.

Investigations

- Blood/urine testing for glucose if diabetes mellitus is possible.
- Swab of discharge for microscopy, Gram staining, culture and sensitivity.
- If syphilis or another sexually transmitted infection (STI) is suspected, refer to a genitourinary medicine (GUM) clinic.

Balanitis treatment and management[1]

Children

- Advise daily cleaning with lukewarm water and gentle drying. No attempt should be made to retract the foreskin to clean under it, if it is still fixed. Avoid soap, bubble bath, or baby wipes as these may irritate the area. Change nappies frequently.
- Non-specific dermatitis - prescribe topical hydrocortisone 1% once daily (and consider adding an imidazole cream), for up to 14 days.
- For suspected irritant or allergic contact dermatitis - advise avoiding triggers such as soap, bubble bath, or creams). Prescribe topical hydrocortisone 1% cream or ointment once a day until symptoms settle, or for up to 14 days.
- For suspected or confirmed candidal balanitis - prescribe an imidazole cream, the frequency depending on the preparation used, until symptoms settle or for up to 14 days.If inflammation is causing discomfort, consider prescribing topical hydrocortisone 1% cream or ointment for up to 14 days as well.
- For suspected or confirmed bacterial balanitis - prescribe oral flucloxacillin for seven days or, if there is penicillin allergy, oral clarithromycin for seven days. Add 1% hydrocortisone cream or ointment if there is discomfort.

- For suspected seborrhoeic dermatitis - try an imidazole cream, refer to specialist if there is treatment failure after four weeks.

If symptoms are not improving following seven days of initial treatment - stop treatment with topical hydrocortisone (if using).Take a sub-preputial swab to exclude or confirm a fungal or bacterial infection, and treat accordingly. Be aware that Group B streptococcus is usually a commensal and does not usually need treatment. Candida may be a superadded infection and its presence does not exclude an underlying skin condition.

When to refer a child
Depending on suspected underlying cause, refer to a paediatrician, paediatric dermatologist, or paediatric urologist or surgeon, if:

- The diagnosis is uncertain.
- There is persistent or recurrent balanitis which is not responding to management in primary care - circumcision may be considered.
- There is suspected lichen sclerosus and/or persistent phimosis - circumcision may be required.

Adults

- In most cases topical balanitis treatment is recommended.
- Systemic therapy should be considered if there is severe inflammation affecting the penile shaft, or marked genital oedema.
- If a nonspecific dermatitis or contact dermatitis is suspected:
    - Avoid triggers (eg, latex condoms, soaps). Prescribe topical hydrocortisone 1% once daily (and consider adding an imidazole cream), for up to 14 days.
    - If symptoms are not improving by seven days: stop topical hydrocortisone and take a sub-preputial swab to exclude or confirm a fungal or bacterial infection - manage according to results.

- If candidal infection is the suspected cause[4] :
    - Recommended regimens: clotrimazole cream 1% or miconazole cream 2%; apply twice daily until symptoms have settled.
    - Alternative regimens: fluconazole 150 mg stat orally if symptoms are severe.
    - Nystatin cream 100,000 units/g - if resistance is suspected or allergy to imidazole.
    - Topical imidazole with 1% hydrocortisone if there is marked inflammation.
    - There is a high rate of candidal infection in sexual partners, who should be offered screening or empirical anti-candidal treatment.
- If bacterial infection is suspected:
    - Take a swab and await the results or consider GUM referral.
    - Common bacterial infection can usually be treated with flucloxacillin or erythromycin in penicillin-allergic patients.
    - Anaerobic infection[4] :
        - Recommended regimen: metronidazole 400 mg twice-daily for one week.
        - Alternative regimens: co-amoxiclav 375 mg three times daily for one week; clindamycin cream applied twice-daily until the infection has resolved.
- For a suspected or confirmed sexually transmitted infection, refer to a sexual health clinic or manage in primary care, as appropriate.
- For all other possible underlying causes of balanitis, or if there is any uncertainty regarding the diagnosis, refer for specialist assessment and management.

- If symptoms are not improving following seven days of initial treatment:
    - Stop treatment with topical hydrocortisone (if using):
        - Take a sub-preputial swab to exclude or confirm a fungal or bacterial infection, and treat accordingly.
        - Be aware that: Group B streptococcus is usually a commensal and does not usually need treatment.
        - Candida may be a superadded infection and its presence does not exclude an underlying skin condition.
- Arrange a blood test for HbA1c to assess for underlying diabetes mellitus and HIV (if appropriate), if balanitis is severe, persistent, or recurrent (especially if candidal balanitis is present).

> If there is gross inflammation and the patient is systemically unwell, consider admission to hospital for intravenous antimicrobials.

Surgery

Surgical referral for consideration of circumcision if balanitis is recurrent or pathological phimosis is present[6] .

Balanitis prognosis

This depends on the underlying cause of balanitis and the presence of any predisposing risk factors. Candidal balanitis resolves rapidly with appropriate treatment but is more likely to recur in men with:

- Diabetes mellitus.
- Poor genital hygiene.
- Phimosis.

Balanitis due to contact irritants resolves over a period of days with removal of the provoking irritant or allergen. It may recur if exposed again.

Balanitis complications

Difficulty retracting the foreskin may develop. This is more likely if the balanitis is chronic or recurring.

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