

# Penile dermatology for the general practitioner: A pragmatic approach to diagnosis and management

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## Background

Genital skin conditions are rare and pose a diagnostic challenge due to their diverse pathology. Patient anxiety and referral decisions add complexity for primary caregivers. Demographics and overlapping symptoms complicate diagnosis, causing anxiety for both patients and clinicians. Social stigma and apprehension to seek healthcare might delay treatment. Accurate differentiation between benign and potentially serious conditions is crucial.

## Objective

We aim to provide clinicians with a clear and concise framework to assist them in risk stratification, treatment decisions and referral pathways for common genital skin conditions.

## Discussion

Differentiating normal variations is crucial to minimise unnecessary investigations and alleviate patient anxiety. Circumcision status, pigmentation and genetics influence disease presentation. We highlight benign conditions for reassurance. Inflammatory genital lesions might arise from various causes. Biopsies remain essential for accurately diagnosing uncertain cases. Sexually transmitted infections (STIs) should be promptly diagnosed and treated. Neoplastic conditions can evolve rapidly, requiring an urgent specialist referral.

**MALE GENITAL DERMATOSES** are nuanced and demanding presentations for general practitioners (GPs). Their diverse clinical presentations and cross-specialty referral pathways can be onerous to navigate. Recognising and initiating management in the primary care setting is critical, and determining when to seek subspecialist advice remains controversial. The interplay of diverse demographics, patient anxiety and overlapping signs and symptoms often complicate the diagnostic pathway. Social stigma and reluctance to seek medical attention is a common reason for delayed treatment. Accurately distinguishing between normal variations, benign presentations and potentially infectious or malignant conditions is paramount to reducing morbidity and improving public health.

## Aim

We aim to provide an up-to-date and concise framework to guide clinicians in their risk stratification and decisions for treatment, and potential referral of these conditions.

## History and examination

Establishing a safe and culturally sensitive rapport is paramount when assessing penile dermatological concerns.<sup>1</sup> A thorough examination, using accurate descriptors of the dermatosis, is essential for documentation and potential referrals. Take note of

circumcision status and location of the abnormality, and compare findings with the skin condition elsewhere on the body.<sup>2</sup> Clinical photography with patient consent is a valuable diagnostic aid and is being increasingly used in artificial intelligence-augmented diagnostic tools.<sup>3</sup>

## Non-malignant/non-infectious conditions

### Normal penile dermatological variation

Normal genital skin variations are common and can produce anxiety for patients and physicians. It is crucial to distinguish normal variants from treatable pathology to minimise unnecessary investigations and alleviate patient concerns.

In circumcised males, the glans epithelium becomes keratinised, and might appear purple. Similarly, there are variations in scrotal colour and the hue of the midline raphe.<sup>4</sup>

Variations can be attributed to skin phototypes, ancestry/ethnicity and genetic factors. Although reassurance is adequate, pigmentation changes might also accompany inflammatory diseases, and normal pigmentation differences can impact a patient's sexuality and psychological wellbeing.

### Common benign presentations

Pearly penile papules are common, presenting as tiny pale papules localised to the coronal sulcus, and might form multiple rows (Figure 1A). Fordyce spots are ectopic sebaceous glands appearing as pale micropapules (Figure 1B).

Median raphe cysts are benign, pale, fluid-filled sacs along the scrotal raphe (Figure 1C). Angiokeratoma of Fordyce are vascular malformations appearing as tiny red-purple scrotal spots that might occasionally bleed (Figure 1D). These conditions do not require intervention, and offering reassurance and observation is safe.

## Red penile lesions

*Genital disease is mostly non-infectious skin disease*

Isolated glans inflammation is termed balanitis, whereas balanoposthitis encompasses reactions involving the glans and foreskin. These terms describe red genital dermatoses but do not specify the underlying

cause. The mnemonic 'RED-PENIS' is helpful for recalling these aetiologies (Table 1).

### Reactive arthritis

Reactive arthritis is a multisystem autoimmune inflammatory condition with a genetic predisposition, characterised by urethritis, arthritis and conjunctivitis with cutaneous involvement (Table 1, section 1.1).<sup>5</sup> It most commonly affects young men aged 20–30 years, preceded by a triggering infection.<sup>6</sup>

### Eczema/dermatitis

Irritant dermatitis is common and is often misdiagnosed, especially in uncircumcised men (Table 1, section 1.2), as the preputial recess is an intertriginous site where skin rests against. Scrotal skin is particularly susceptible, and identifying a single

causative agent is challenging.<sup>7</sup> Uncontrolled skin inflammation over time can lead to lichenification, characterised by scaly, thickened skin with surface excoriation. Atopic dermatitis should be considered in association with previous atopy.

Allergic contact dermatitis of the male genital skin manifests as acute, severe dermatitis. A thorough history, patch testing and avoiding allergen exposure form the cornerstone of management.

### Drug reaction

An immunological reaction to a range of drugs, causing a fixed reaction of variable cutaneous involvement (Table 1, section 1.3), occur on the genitalia in 20% of patients, and might be immediate or delayed up to one to two months.<sup>8</sup>

### Psoriasis

Psoriasis affects approximately 3% of the population and 29–40% will experience genital manifestations (Table 1, section 1.4).<sup>9,10</sup> Over two-thirds of men with chronic plaque psoriasis will experience genital involvement at some point in their disease course, characterised by salmon-red, scaly plaques. Genital psoriasis might occur independently but is frequently associated with inverse (flexural) psoriasis, often impacting the groin.<sup>11</sup> Patient concern centres around appearance and negative impacts on sexual wellbeing. When diagnosis is uncertain, biopsy can rule out neoplasia, particularly for solitary glans lesions.<sup>12</sup>

### Neoplasia

#### *Penile intraepithelial neoplasia*

Penile intraepithelial neoplasia (PIN) encompasses in situ squamous cell carcinoma (SCC) and erythroplasia of Queyrat. PIN is a non-invasive, pre-malignant proliferation of cells demonstrating variable levels of abnormality including keratinisation and nuclear atypia (Table 1, section 1.6.1).<sup>13</sup> This condition can be differentiated based on cell-turnover drivers, including lesions arising from human papillomavirus (HPV) infections and chronic inflammation.<sup>14,15</sup> Diagnosis is made by biopsy or excision. Regular surveillance is crucial as the recurrence rate is nearly 50%; however, with adequate treatment only 2% will progress to invasive carcinoma.<sup>16</sup>



**Figure 1.** Photographic examples of common benign penile dermatological presentations. (A) Benign pearly penile papules; (B) Fordyce spots; (C) Median raphe cysts; and (D) Angiokeratoma of Fordyce.

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### Squamous cell carcinoma of the penis

Penile SCC is a rare but potentially aggressive malignancy that requires urgent management by a uro-oncologist (Table 1, section 1.6.2). The contemporary five-year survival for regionally advanced disease is 51%.<sup>17</sup> Australian penile cancer incidence is <0.1 per 100,000 or approximately 300 diagnoses per year.<sup>18</sup> Early treatment is paramount to penile-preserving intervention and survival. However, many men experience a treatment delay of more than six months due to social stigma, neglect and access to care, resulting in poorer outcomes.<sup>19</sup> Palpable inguinal lymphadenopathy will be present in 28–64% of men at presentation, with almost 50% of these representing regionally advanced disease.<sup>19</sup>

Diagnosis is by excisional biopsy and minimally invasive sentinel lymph node biopsy.<sup>20</sup> For low-risk penile SCC, early surgical intervention might be curative. There is a minimal role for chemoradiotherapy in physically fit patients with lymph node-positive disease.<sup>21,22</sup> Radical lymphadenectomy offers the best outcomes for high-risk disease.<sup>23</sup> Although more research is needed for this rare disease, recent data suggest that men experience better outcomes when managed by an experienced uro-oncology team at a high-volume tertiary hospital.<sup>24</sup>

### Infections

#### Non-sexually transmitted

Opportunistic fungal infection is typically caused by the *Candida* species. Uncircumcised men with pre-existing immunocompromise are most at-risk (Table 1, section 1.7.1).<sup>25</sup> Diagnosis is confirmed through a skin swab. Effective treatment usually only requires a topical imidazole cream. Persistent candidal infection might require oral treatment agents.

#### Sexually transmitted

Approximately one in six Australians might contract an STI in their lifetime.<sup>26</sup> Partner contact tracing should be conducted whenever possible. Genital warts (*Condyloma acuminata*) are common in the anogenital region, caused by specific types of HPV (Table 1, section 1.7.2). Although primarily attributed to HPV types 6 and 11, co-infection with high-risk types 16 and 18 can lead to

malignant transformation.<sup>27</sup> Treatments include cryotherapy, topical imiquimod and podophyllotoxin. There is no curative treatment as the virus embeds within host cell DNA.<sup>28</sup> All patients should undergo partner contact tracing, and female partners should undergo a swab for HPV DNA detection. Routine vaccination of all adolescents with a HPV vaccination is an important public health measure to reduce the likelihood of infection.

High-risk individuals and those aged <26 years should receive the Gardasil-9 vaccine.<sup>29</sup>

Genital herpes (herpes simplex virus-2) can be confirmed on dry swab PCR (Table 1, section 1.7.3). Patients often present with first reactivation of the virus and can be effectively treated with topical or oral antivirals.

Primary syphilis (*Treponema pallidum*) in males typically presents initially with a painless chancre<sup>30</sup> (Table 1, section 1.7.4), although these might be overlooked at examination if occurring in the oral mucosa or rectally. Untreated syphilis can ultimately affect many organ systems. High-risk groups include those engaging in unprotected sex with multiple partners and is more prevalent in men who have sex with men. Diagnosis requires a combination of serology and nucleic acid amplification tests from a lesion swab. Patients should be screened for co-infection with HIV.<sup>30</sup>

### Sclerosis

#### Lichen planus

Lichen planus is a multifocal inflammatory skin condition that occasionally presents on genitalia in both males and females (Table 1, section 1.8.1). Chronic ulcerative lichen planus can lead to genomic instability, increasing malignant potential.<sup>31</sup> Careful monitoring and consideration of circumcision is critical for mitigating the risk of penile SCC.

#### Plasma cell balanitis (Zoon's)

Zoon's balanitis (plasma cell balanitis) occurs in uncircumcised older males (Table 1, section 1.8.2). It might develop gradually over months to years and is generally asymptomatic.<sup>32</sup> A biopsy is recommended to rule out inflammatory or premalignant conditions.

#### Genital dysaesthesia

Male genital dysaesthesia usually presents as a burning sensation of the genital skin,

akin to vaginal vulvodynia (Table 1, section 1.8.3).<sup>33</sup> In more severe cases, male genital dysaesthesia might be painful, resulting in dyspareunia and avoidance of sexual activity. Specialist referral is often warranted.

### White lesions

#### Lichen sclerosus

Lichen sclerosus is a chronic, sclerosing inflammatory condition of uncertain cause of the anogenital skin (Table 2, section 2.1).<sup>34</sup> Biopsy should be considered when the diagnosis is uncertain. Untreated cases with persistent phimosis and chronic inflammation can lead to malignant transformation, but there is debate on this issue. The lifetime risk of malignant transformation has not been established.<sup>35,36</sup>

#### Phimosis

In Australia, circumcision rates have declined, dropping from a peak of 85% in the 1950s to 19% in 2019.<sup>37</sup> Physiological phimosis is normal at birth and might variably persist in children. Phimosis is considered physiological if penile function or voiding are unaffected.<sup>38</sup>

Pathological phimosis exists when the foreskin remains non-retractile beyond puberty, resulting in problematic voiding or dyspareunia (Table 2, section 2.2). Retraction of a pathologically phimotic foreskin might lead to a tight 'waisting' of the band around the glans or penile shaft.<sup>38</sup>

Lichen sclerosus with phimosis can lead to pinhole phimosis, causing painful erections and dyspareunia, and rarely urinary obstruction or recurrent infections, requiring circumcision.<sup>34</sup>

### Investigations

All investigations for genital skin lesions are specific to the suspected pathology and should be considered in the setting of detail history and examination (Table 3). Histopathological analysis is an invaluable diagnostic tool for penile skin dermatoses. It is crucial to rule out premalignant or malignant disease, but histopathology might have limitations in interpretation of inflammatory lesions (Figure 2). The commonest complications of genital skin biopsies are vasovagal reactions, bleeding and scarring. All biopsies should be performed after informed consent is obtained, under local anaesthetic, in a sterile fashion.

**Table 1. Red penile dermatoses - organised by the mnemonic 'RED-PENIS'**





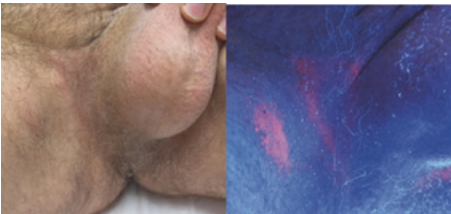
Condition	Examples <sup>A</sup>	Aetiology	Clinical features	Treatment
<b>1.1 Reactive arthritis</b>		<ul style="list-style-type: none"> <li>Likely autoimmune with genetic predisposition</li> <li>Associated with HLA-B27 positivity<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>Urethritis, arthritis, conjunctivitis with cutaneous involvement (1/3 genital)</li> <li>Scaly psoriasiform plaques</li> <li>Might have ulcers/erosions</li> <li>Might crust and be tender</li> </ul>	<ul style="list-style-type: none"> <li>Usually self-limiting within 12 months</li> <li>Might relapse</li> <li>Analgesia/NSAIDs</li> <li>Corticosteroids (topical and oral)</li> <li>DMARDs</li> </ul>
<b>1.2 Eczema/dermatitis</b> <ul style="list-style-type: none"> <li>Irritant/contact</li> <li>Allergic contact</li> <li>Atopic</li> </ul>		<ul style="list-style-type: none"> <li>Often no clear allergen/irritant</li> </ul>	<ul style="list-style-type: none"> <li>Asymptomatic</li> <li>Balanoposthitis – red macules, plaques and patches with poorly defined erythema</li> <li>Intractable itch</li> <li>Chronic – skin thickening</li> </ul>	<ul style="list-style-type: none"> <li>Minimising irritants</li> <li>Emollients</li> <li>Cool (sitz) baths</li> <li>Low-moderate potency topical corticosteroids</li> </ul>
<b>1.3 Drug reaction</b> <ul style="list-style-type: none"> <li>NSAIDs</li> <li>Antibiotics</li> <li>Sulfasalazine</li> <li>Paracetamol</li> </ul>		<ul style="list-style-type: none"> <li>Exact mechanism unclear – drug likely combines with protein to cause an immunological reaction</li> </ul>	<ul style="list-style-type: none"> <li>Commonly on limbs, but on genitals in 20% of patients</li> <li>Asymptomatic</li> <li>Might have itching, swelling, tenderness and lower urinary tract symptoms (urethritis)</li> <li>Solitary erythematous/hyperpigmented patch/plaque (+/- red halo)</li> </ul>	<ul style="list-style-type: none"> <li>Recognition and avoidance of the causative drug (after skin biopsy to confirm diagnosis)</li> <li>Moderate potency topical corticosteroid</li> </ul>
<b>1.4 Psoriasis</b> <ul style="list-style-type: none"> <li>Chronic plaque</li> <li>Inverse (flexural)</li> </ul>		<ul style="list-style-type: none"> <li>Immunological basis with a genetic predisposition, influenced by environmental factors<sup>14</sup></li> <li>Risk factors: diabetes, immunocompromised, other skin disease, age, obesity, antibiotic use</li> </ul>	<ul style="list-style-type: none"> <li>Red scaly plaques</li> <li>Might be confined to genitals</li> <li>Flat red macules in uncircumcised men</li> <li>Affects other parts of body – skin/nails</li> </ul>	<ul style="list-style-type: none"> <li>Minimising irritants, use of emollients</li> <li>6-week trial of high-potency topical corticosteroids</li> <li>Systemic psoriasis treatment (biologics, immunosuppressants)<sup>15</sup></li> </ul>
<b>1.5 Erythrasma</b> <ul style="list-style-type: none"> <li><i>Corynebacterium minutissimum</i> (gram-positive skin commensal) in flexures</li> </ul>		<ul style="list-style-type: none"> <li>Benign intertriginous eruption associated with diabetes, hyperhidrosis, obesity and immunosuppression</li> </ul>	<ul style="list-style-type: none"> <li>Symmetrical scaly red-brown plaques in flexures</li> <li>Can be itchy</li> <li>Fluoresces under Wood's lamp examination</li> <li>Involvement of other intertriginous sites</li> </ul>	<ul style="list-style-type: none"> <li>Avoidance of skin irritants</li> <li>Reduction of sweating</li> <li>Topical/systemic antibiotic treatments (clindamycin, fusidic acid, erythromycin, mupirocin)<sup>16</sup></li> </ul>





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**Table 1. Red penile dermatoses – organised by the mnemonic ‘RED-PENIS’ (cont’d)**

Condition	Examples <sup>A</sup>	Aetiology	Clinical features	Treatment
<b>1.6 Neoplasia</b>				
<b>1.6.1 PIN (erythroplasia of Queyrat)</b>		<ul style="list-style-type: none"> <li>Risk factors: uncircumcised men, HPV infection, lichen sclerosis, smoking, immunocompromise<sup>17</sup></li> </ul>	<ul style="list-style-type: none"> <li>Solitary, slow growing, discoloured plaque, and might have itch, crusting or tenderness</li> </ul>	<ul style="list-style-type: none"> <li>Urgent referral to a urologist is required</li> <li>Local treatments can include shave excision, cryogenic/laser therapy, topical treatments (5-fluorouracil, imiquimod), surgical excision</li> <li>HPV vaccination</li> </ul>
<b>1.6.2 Penile SCC</b>		<ul style="list-style-type: none"> <li>Risk factors: history of phimosis/chronic inflammatory conditions (eg lichen sclerosis), previous UVA treatments/exposure, smoking and high-risk HPV infection (HPV subtypes 16 and 18)<sup>17</sup></li> </ul>	<ul style="list-style-type: none"> <li>Asymptomatic</li> <li>Itchy, painful, bleeding, malodorous lesions</li> <li>Progressive erythematous skin lesion/palpable nodule on glans, coronal sulcus or foreskin</li> <li>Invasive: exophytic ulcerated/eroded nodules fungating locally destructive lesions</li> <li>Can cause voiding dysfunction</li> </ul>	<ul style="list-style-type: none"> <li>Early urgent referral to a urologist and histopathological diagnosis</li> <li>Surgical excision +/- sentinel lymph node biopsy, radiotherapy</li> </ul>
<b>1.7 Infectious</b>				
<b>1.7.1 Candidiasis</b> <ul style="list-style-type: none"> <li>Mostly <i>Candida albicans</i></li> </ul>		<ul style="list-style-type: none"> <li>Risk factors: diabetes, immunocompromised</li> </ul>	<ul style="list-style-type: none"> <li>Balanoposthitis with itch, pain, weeping/white discharge</li> <li>Might spread to groin/thigh regions</li> <li>Uncommon in circumcised men</li> </ul>	<ul style="list-style-type: none"> <li>Cooling baths</li> <li>Topical/oral azole treatment</li> <li>Low-potency topical corticosteroids</li> </ul>
<b>1.7.2 Genital warts</b> <ul style="list-style-type: none"> <li>Condyloma accuminata</li> <li>Clinical +/- skin biopsy</li> </ul>		<ul style="list-style-type: none"> <li>Mostly caused by HPV types 6 and 11 (low risk)</li> <li>Note: infected individuals are ALSO at risk of co-infection with subclinical high-risk HPV types, mostly 16 and 18</li> </ul>	<ul style="list-style-type: none"> <li>Warts in the genital/inguinal and anal region</li> <li>Might be recurrent</li> </ul>	<ul style="list-style-type: none"> <li>Spot cryotherapy</li> <li>+ imiquimod cream/podophyllotoxin</li> <li>Regular review for resolution and follow-up for malignant change</li> </ul>
<b>1.7.3 Genital herpes</b> <ul style="list-style-type: none"> <li>Dry swab for PCR</li> </ul>		<ul style="list-style-type: none"> <li>Herpes simplex virus-2</li> </ul>	<ul style="list-style-type: none"> <li>Primary infection – asymptomatic</li> <li>Reactivation – severe pain/dysuria/discharge with acute red papules +/- blisters/ulceration</li> </ul>	<ul style="list-style-type: none"> <li>Oral antiviral therapy to reduce severity of flares (acyclovir/valaciclovir/famciclovir)</li> <li>Analgesia, topical local anaesthetic</li> <li>Avoid sexual activity during symptomatic/acute phase</li> </ul>

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**Table 1. Red penile dermatoses – organised by the mnemonic 'RED-PENIS' (cont'd)**

Condition	Examples <sup>A</sup>	Aetiology	Clinical features	Treatment
<b>1.7.4 Syphilis</b> • Syphilis serology		<ul style="list-style-type: none"> <li>• <i>Treponema pallidum</i></li> </ul>	<ul style="list-style-type: none"> <li>• Primary: painless ulcer/chancre (urethral, anogenital, oral)</li> <li>• Secondary: skin/mucous membranes – macules/papules (palms/soles)</li> <li>• Tertiary (neurosyphilis)</li> </ul>	<ul style="list-style-type: none"> <li>• Intramuscular penicillin – benzathine benzylpenicillin 2.4 million units</li> <li>• Long-term monitoring of serology</li> </ul>
<b>1.8 Sclerosis</b> <b>1.8.1 Lichen planus</b> • Hyperkeratotic • Annular • Lace pattern • Erosive		<ul style="list-style-type: none"> <li>• Might be T-cell mediated<sup>18</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Asymptomatic</li> <li>• Multifocal itchy papules +/- erosions, weeping</li> <li>• Erosive lesions can be painful</li> </ul>	<ul style="list-style-type: none"> <li>• High-potency topical corticosteroids for control</li> <li>• Needs monitoring for malignant change</li> </ul>
<b>1.8.2 Plasma cell balanitis (Zoon's)</b>		<ul style="list-style-type: none"> <li>• Mild trauma/irritation of the subpreputial space</li> </ul>	<ul style="list-style-type: none"> <li>• Solitary moist orange-red heterogenous plaque of the glans and/or foreskin (+/- mirroring)</li> </ul>	<ul style="list-style-type: none"> <li>• Combination topical antibiotic + corticosteroids</li> </ul>
<b>1.8.3 Genital dysaesthesia</b>		<ul style="list-style-type: none"> <li>• Unknown</li> <li>• Neuropathy, inflammation, neurovascular, iatrogenic (steroids), allergic</li> </ul>	<ul style="list-style-type: none"> <li>• Might not have any signs</li> <li>• Uniformly red scrotal +/- genital skin with sensation change</li> </ul>	<ul style="list-style-type: none"> <li>• Avoid irritants/remove triggers (alcohol/caffeine)</li> <li>• Use emollients</li> <li>• Low-dose amitriptyline/SSRIs</li> </ul>

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DMARDs, disease-modifying antirheumatic drugs; HLA-B27, human leukocyte antigen B27; HPV, human papillomavirus; NSAIDs, non-steroidal anti-inflammatory drugs; PCR, polymerase chain reaction; PIN, penile intraepithelial neoplasia; SCC, squamous cell carcinoma; SSRIs, selective serotonin re-uptake inhibitors; UVA, ultraviolet A.

## Conclusion

Urological dermatology can be a complex area for general practitioners and urologists, as it encompasses diverse pathology with overlapping clinical presentations. Fortunately, many can be effectively managed in a primary care setting. However, considering a biopsy or seeking multidisciplinary specialist guidance is crucial if there is uncertainty in diagnosis or if initial treatments do not lead to timely




improvement. This proactive approach will alleviate patient anxiety and ensure optimal care.

## Key points

- Normal variations and appearance in genital skin are common and might cause unnecessary anxiety for patients and physicians alike.
- Genital skin disease is mostly non-infectious in aetiology.

- Pathological phimosis is best treated with upfront topical corticosteroid therapy referred for consideration of circumcision if refractory.
- Opportunistic screening and prevention of STIs should be undertaken whenever appropriate, especially in the context of co-infection.
- Genital skin biopsy is essential to confirm or rule out penile neoplasia.

**Table 2. White penile dermatoses**

Condition	Examples <sup>A</sup>	Aetiology	Clinical features	Treatment
<b>2.1 Lichen sclerosus</b>		<ul style="list-style-type: none"> <li>Likely autoimmune in origin (but not associated with other conditions)</li> </ul>	<ul style="list-style-type: none"> <li>Asymptomatic</li> <li>Patchy pallor of foreskin/glans</li> <li>Usually in uncircumcised males</li> <li>Itching</li> <li>+/- phimosis, skin atrophy</li> <li>+/- purpura/telangiectasia, erythema</li> </ul>	<ul style="list-style-type: none"> <li>4- to 6-week trial of moderate potency corticosteroid</li> <li>Referral to specialist</li> <li>Needs monitoring for malignant change</li> </ul>
<b>2.2 Phimosis (pathological)</b>		<ul style="list-style-type: none"> <li>Lichen sclerosus</li> <li>Trauma/injury</li> </ul>	<ul style="list-style-type: none"> <li>Symptomatic non-retractile foreskin beyond puberty</li> <li>Waisting on retraction</li> <li>Spraying urinary stream</li> <li>Painful erections/sex</li> </ul>	<ul style="list-style-type: none"> <li>Primary: 4- to 12-week course of moderate potency topical corticosteroids</li> <li>Secondary: circumcision can be considered</li> </ul>
<b>2.3 Epidermal cysts</b>		<ul style="list-style-type: none"> <li>Cysts arise from pilosebaceous follicles and calcinosis is dystrophic calcification of these cysts</li> </ul>	<ul style="list-style-type: none"> <li>Asymptomatic firm lesions varying in size and colour that are mobile over deeper structures</li> </ul>	<ul style="list-style-type: none"> <li>Reassurance</li> <li>Might be surgically excised for cosmetic reasons</li> </ul>

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**Table 3. Investigations and procedures useful for the diagnosis of penile dermatoses in the general practice setting**

Investigation	Examples	Procedure
UVA (Wood lamp)	<ul style="list-style-type: none"> <li>Erythrasma</li> <li>Pigmentation disorders</li> <li>Fungal infection</li> </ul>	Utilising UV light from different sources from mercury vapour to LEDs. A range of pathologies fluoresce variably under UV light
Bedside microscopy	<ul style="list-style-type: none"> <li>Scabies</li> <li>Pubic lice</li> </ul>	A microscopic examination of skin scraping might reveal skin mite/insect infestation
Skin swab/laboratory MCS	<ul style="list-style-type: none"> <li>HSV</li> <li><i>Neisseria gonorrhoeae</i></li> <li><i>Chlamydia trachomatis</i></li> </ul>	Useful for bacterial/fungal infections. Might also increase detection of STIs through NAT PCR
Serological testing	<ul style="list-style-type: none"> <li>Syphilis, HBV, HCV, HIV</li> </ul>	Screening for underlying STI, if indicated. Completion screening for other STIs is mandatory if one is found
Skin patch testing	<ul style="list-style-type: none"> <li>Allergic contact dermatitis</li> </ul>	Patch testing against common allergens
Procedure	Indication	Technique
Punch biopsy (3–4 mm)	<ul style="list-style-type: none"> <li>Non-pigmented lesions of glans</li> <li>Suspected non-malignant lesions</li> </ul>	Rotate the disposable punch biopsy without pressure. Elevate the specimen with a needle and cut the specimen at proximally. An absorbable suture might be used for haemostasis
Deep incisional biopsy	<ul style="list-style-type: none"> <li>Suspicion of invasive cancer</li> </ul>	Using a small blade, excise the lesion with some normal tissue around it (skin margin), in an elliptical fashion. An absorbable suture(s) might be used for haemostasis
Excisional biopsy	<ul style="list-style-type: none"> <li>Pigmented lesions</li> </ul>	
Shave biopsy	<ul style="list-style-type: none"> <li>Pigmented lesions</li> <li>Lesions on the penile shaft</li> </ul>	A flexible razor or scalpel might be used to shave the lesion. Chemical haemostasis might be utilised in this type of biopsy
Curette/snip biopsies	<ul style="list-style-type: none"> <li>Pedunculated lesions</li> </ul>	A blade might be used to remove a lesion on a stalk

HBV, hepatitis B virus; HCV, hepatitis C virus; HIV, human immunodeficiency virus; HSV, herpes simplex virus; LEDs, light emitting diodes; MCS, microscopy culture and sensitivity; NAT PCR, nucleic acid testing by polymerase chain reaction; STI, sexually transmitted infection; UV, ultraviolet; UVA, ultraviolet A.

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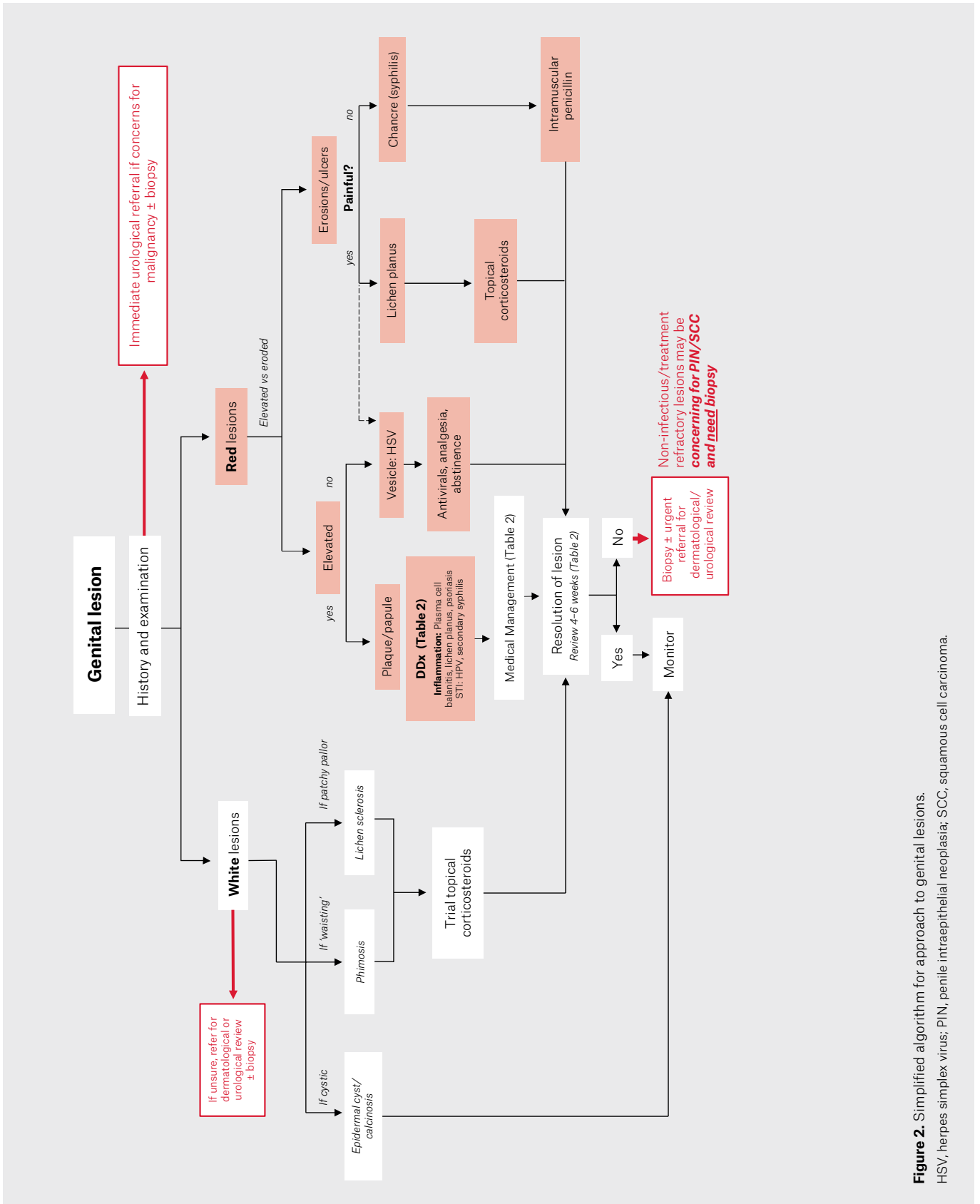


Figure 2. Simplified algorithm for approach to genital lesions.

HSV, herpes simplex virus; PIN, penile intraepithelial neoplasia; SCC, squamous cell carcinoma.

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