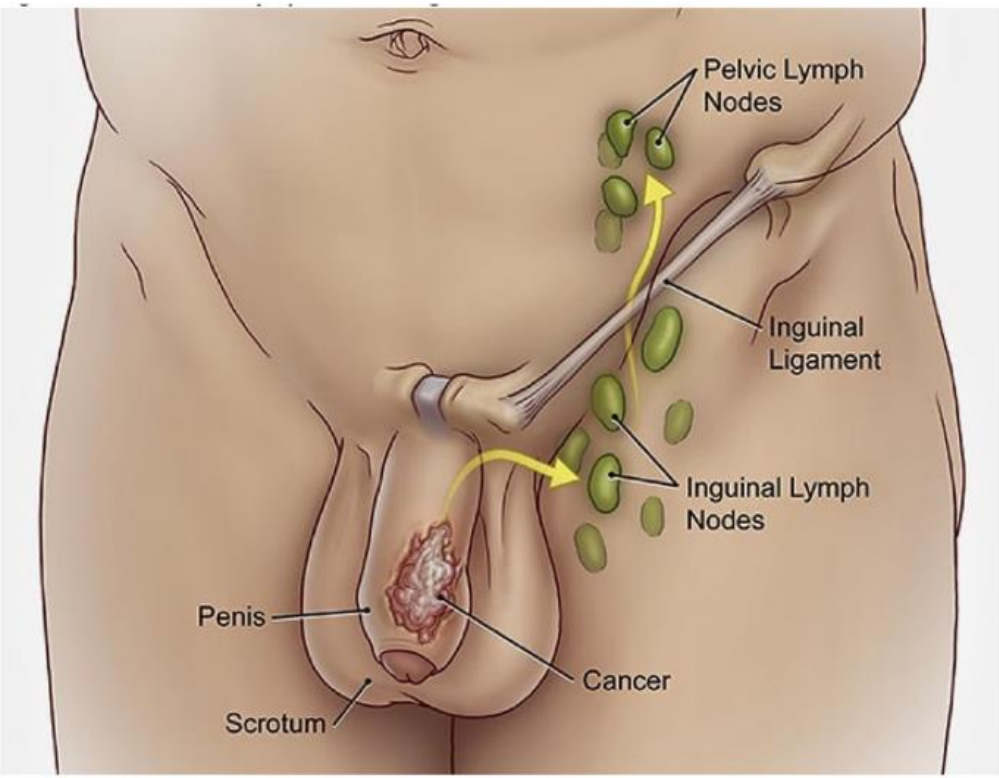
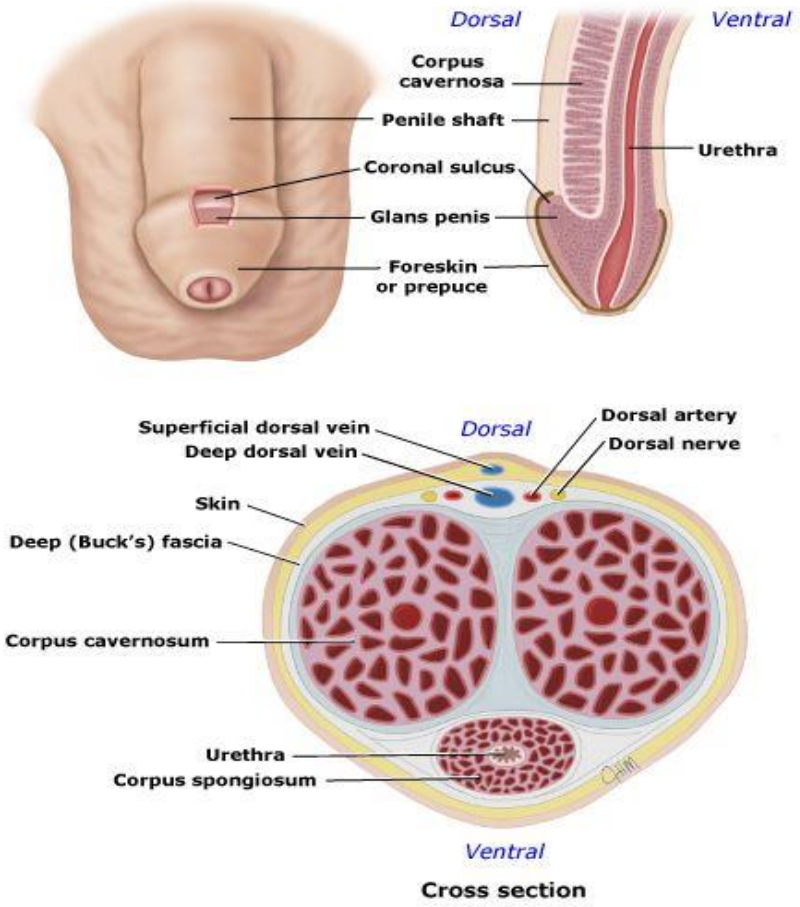
Penile Cancer



Anatomy

- Penis is composed of three tubular structures
- Two corpora cavernosa - provide erectile function
- corpus spongiosum - contains the urethra



Epidermiology

- About 10% of patients are under 40 years of age
- Typically a disease of older men
- Rates increase with age
- The mean age at diagnosis is 60 years
- Cancers of the penis are more common in less developed areas of the world (10 to 20% of all malignancies in men)
- Rare in the United States, Europe, and other industrialized countries

Etiology

- Human papillomavirus infection (HPV types 16 and 18)
- Balanitis Xerotica Obliterance (BXO)
- Smoking
- Phimosis
- Chronic balanoposthitis

Precarcinomatous states

1. Leucoplakia
2. Penile intraepithelial neoplasia (PeIN)

Pathology

- Most typically a squamous cell carcinoma
- Arising in the skin of the glans penis or the prepuce
- Flat and infiltrating or warty in appearance
- Often starts as leucoplakia or penile intraepithelial neoplasia
- Latter results from an existing papilloma
- Local growth continues for months or years

Penile intraepithelial neoplasia

- Also called carcinoma in situ of the penis
- Typically seen as a red cutaneous patch on the penis

When it occurs on,

  - The glans penis - erythroplasia of Queyrat
  - The shaft of the penis - Bowen's disease

- When there is clinical doubt as to the underlying diagnosis a biopsy is indicated
- **Treatment** - topical 5-FU cream, CO2 laser ablation or surgical excision

Staging

- T1 tumours - confined to the skin
- T2 tumours - invade the corpus spongiosum or the corpus cavernosum
- T3 tumours - invade the urethra
- T4 tumours - invade adjacent structures
- The earliest lymphatic spread is to the inguinal (N1 and N2 disease)
- Then to the iliac nodes (N3 disease)
- Distant metastatic deposits are infrequent

Clinical features

- Many patients present late
- By the time the patient presents, the growth is often large
- Secondary infection causes a foul, bloody discharge
- Typically little or no pain
- 50% have inguinal lymph node enlargement at presentation (often reflects infection)
- The prepuce is non-retractile and must be split to view the lesion

- Biopsy should be performed to make the diagnosis
- Untreated, the whole glans may be replaced by a fungating offensive mass
- Later, the inguinal nodes can erode the skin of the groin
- Rarely - death of the patient can result from erosion of the femoral or external iliac vessels
- Recent onset phimosis
- Acute retention of urine - Rare

Treatment

1. Treatment of the primary tumour
2. Treatment of the inguinal nodes

Treatment for the primary tumour

- Surgical excision is the mainstay of treatment
- 2 cm margin of normal tissue should be removed
- Penile preserving surgery with excision of much lower margins of normal tissue are now accepted
- Tumours affecting the glans penis - glansectomy

- More advanced tumours requiring partial penectomy
- Advance cases - total penectomy is required with formation of a perineal urethrostomy
- Surgery is indicated even in advanced metastatic disease for reasons of local control

Treatment of the inguinal nodes

- Should be delayed until at least 3 weeks after local treatment of the primary lesion
- Enlargement caused by infection - show signs of subsiding with antibiotic treatment

- For palpable nodes - ultrasound-guided fine needle aspiration - confirm the diagnosis
- Block dissection of both groins should be undertaken
- Nodes are not palpable disease - sentinel lymph node biopsy (SLNB)
- SLNB is positive – inguinal node dissection
- Pelvic nodes are involved on CT scanning - surgery probably has little role

Iliac nodes are not enlarged - N2 disease - observation, pelvic lympadenectomy or radiotherapy

- Chemotherapy - reserved for palliation in those with metastatic disease
- The prognosis of penile cancer is primarily related to the presence or absence of inguinal node metastasis
- Untreated patients with inguinal metastases rarely survive 2 years
- The prognosis for tumours confined to the penis is good - 5-year survival rates 80%
- With nodal involvement - 5-year survival rate 40%

Other malignancies

- Basal cell carcinoma - common skin cancer arising from the basal layer of the epidermis and its appendages
- Kaposi sarcoma - angioproliferative disorder that requires infection with human herpesvirus-8
- Melanoma - the most aggressive form of skin cancer and can occur anywhere on the body
- Extramammary Paget disease - adenocarcinoma of apocrine gland-bearing skin that presents as a slowly expanding, well-defined patch

- Penile sarcomas
- Urethral carcinoma - Primary urethral cancer is a rare malignancy in men

Typically arises in the proximal segments of the urethra

But can arise anywhere along the urethral length

- Metastases – Rare

Often occur within the corpora cavernosa and can be a cause of priapism

Buschke–Löwenstein tumour

- Uncommon
- Histological pattern of a verrucous carcinoma
- Locally destructive and invasive
- But appears not to spread to lymph nodes or to metastasise
- Treatment - surgical excision