

# Carcinoma of the penis. Report of three cases and review of literature.

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## Abstract

Penile cancer is rare, comprising less than 1% of all male cancer. The commonest age of presentation is the 6<sup>th</sup> decade and the most common variety is squamous cell carcinoma. Penile cancer has been found to be associated with poor personal hygiene and phimosis. Premalignant lesions include: Leukoplakia, balanitis xerotica obliterans (BXO) and giant condylomata acuminata. The most common presenting symptom is a lesion which is either ulcerative, exophytic, or papillary. Inguinal lymphadenopathy is a common finding in about 60% of cases, but half of the time it is reactive. Fluorouracil cream or neodymium:YAG laser treatment is effective for carcinoma in situ and helps in organ preservation. Surgery, either in the form of partial or total penectomy, is the cornerstone of treatment of penis carcinoma.

## CASE 1

A 75-year-old male presented with a growth over the penile region for 1 year. He complained of recurrent UTI. No other significant history was available. Local examination showed a growth involving the glans as well as the preputial skin (fig. 1). On examination, bilateral inguinal lymph nodes were present, which were firm and mobile. Abdominal examination and respiratory system examination was normal. Histopathological examination showed a squamous cell carcinoma. Partial penectomy was done and the postoperative course was uneventful.

The patient was in follow-up for 2 years without any problem. He expired after 2 years due to acute myocardial infarction.

## Figure 1

Figure 1: Growth involving glans as well as prepuce



**Figure 2**

Figure 2: Partial penectomy



**CASE 2**

A 54-year-old male presented with a non-healing ulcer over the glans (fig. 3). He also complained of foul-smelling discharge from the ulcer. No other significant history was available. The rest of the findings were the same as in case 1. The patient underwent partial penectomy with watchful waiting of groin. The patient is in follow-up without any problem.

**Figure 3**

Figure 3: Ulcerative growth of the glans involving the prepuce



Case 3: A 54-year-old male presented with burning micturation, growth over the penis for 1 year and bleeding from the local site of the lesion over the penis. He had a history of a circumcision performed one year back. The bilateral inguinal regions appeared normal. A biopsy was taken which confirmed the clinical diagnosis. The patient underwent total penectomy with perineal urethroostomy (a 2cm margin was not possible). The patient is in follow-up without any problem.

**INTRODUCTION**

Penile cancer is rare, comprising less than 1% of all male cancer. The incidence of SCC (squamous cell carcinoma) in the western world is around 1/100,000 . The commonest age of presentation is the 6<sup>th</sup> decade and the most common variety is squamous cell carcinoma. No significant racial difference is found between black and white in the United States. Higher stage at presentation, age >65 years, American African ethnicity and lymph node involvement are independent factors associated with poor outcome. In 1941, Queyrat described a red, velvety well-margined lesion of the glans which is known as erythroplasia of Queyrat. Carcinoma in situ involving glans, preputial skin or shaft is known as erythroplasia of Queyrat. Involvement of the rest of the genitalia or perineal region by carcinoma in situ is known as Bowen’s disease. Nowadays, the incidence of

penile cancer is declining, probably because of increased attention towards personal hygiene <sup>2</sup>.

## **ETIOPATHOLOGY**

Penile cancer has been found to be associated with poor personal local hygiene. Apart from hygiene, phimosis has also been implicated as an important association with penile cancer. Neonatal circumcision is virtually almost protective but adult circumcision does not provide protection against development of malignancy <sup>3</sup>. One theory suggests that smegma (secretion of Tyson's glands) accumulation leads to irritation and chronic inflammation. HPV viral infection has also been implicated as important predisposing condition. The incidence of HPV-16 is directly proportional to the number of lifetime sexual partners, meaning that multiple partners lead to more risk as compared to a single partner. Other risk factors are: cigarette smoking, tobacco chewing and UV rays <sup>4</sup>. Premalignant lesions include: Leukoplakia, Balanitis xerotica obliterans (BXO), and giant condylomata acuminata.

The majority of penile cancers are squamous cell carcinomas. Most commonly they originate from the glans followed by prepuce. Non-squamous malignancy of penis includes: sarcoma, basal cell carcinoma, melanoma, lymphoma and Kaposi's sarcoma. A small percentage of patients with AIDS-related Kaposi's sarcoma is found to have penile involvement.

## **NATURAL HISTORY OF THE DISEASE**

It starts as a small superficial lesion, most commonly on the glans (48%), followed by prepuce (21%), both glans and prepuce (9%), coronal sulcus ((6%) and shaft (<2%). The risk of metastases is proportional to the size of the tumor. Small tumors involving the glans are rarely metastatic at presentation and large tumors (>5cm, more than 3/4 involvement of shaft) have very high metastatic potential <sup>5</sup>. Buck's fascia acts as a natural barrier, penetration of Buck's fascia allows involvement of the corporal bodies and rapid dissemination. Metastases first occur in the superficial inguinal nodes. Deep inguinal and pelvic nodes can also be involved. Distant metastasis (<10%) is very rare. It has a progressive course and no case of spontaneous remission has been reported. In non-treated cases, death occurs most commonly due to erosion of a femoral vessel.

## **CLINICAL PRESENTATION**

The most common presenting symptom is a lesion which is either ulcerative, exophytic, or papillary. Sometimes,

phimosis may mask the lesion resulting in delay in seeking medical consultation <sup>6</sup>. In addition to phimosis, other factors leading to delay in seeking medical attention are: patient's neglect; fear, and embarrassment. Penile cancer can also present as a foul-smelling discharge, frankly ulcerated and fungated mass. Patients may complain of burning or itching over the glans or bleeding from the lesion. Urinary retention and urethro-cutaneous fistula are rare late presentations. Inguinal lymphadenopathy is a common finding in about 60% of cases, but half of the time it is reactive; 20% of the clinically impalpable nodes will have micro-metastases <sup>7</sup>.

## **MANAGEMENT**

Management includes diagnosis as well as treatment. Diagnosis requires accurate clinical examination of the external genital and inguinal region. It includes assessment of tumor size, location, fixity, shaft involvement, penile base and scrotal involvement as well as palpation of both inguinal regions for lymphadenopathy. Carefully note the size, mobility and consistency. Clinical suspicion must be confirmed by biopsy. Assessment of depth, vascular invasion and histological grade are very important for planning further management. Physical examination of the inguinal region remains the gold standard for evaluation of metastases for small distal lesions. USG or contrast-enhanced MRI is recommended for advanced or high-grade lesions. CT scan and MRI have the same accuracy for nodal assessment. Metastatic workup should include chest X-ray, CT scan of abdomen and pelvis and bone scan in case of suspected distant metastases. The biochemical profile is usually normal. Anemia and leukocytosis may be present in patients with chronic illness and superadded infection. A review from Memorial Sloan Kettering Cancer Center shows that hypercalcemia in absence of bone metastases was present in 20% of patients <sup>8</sup>. CT-guided biopsy of enlarged pelvic nodes is recommended in presence of inguinal metastases. If positive, neoadjuvant chemotherapy should be given. A commonly used staging system is TNM staging (AJCCsystem, sixth edition) <sup>9</sup>.

Fluorouracil cream or neodymium:YAG laser treatment is effective for carcinoma in situ and helps in organ preservation. Surgery either in the form of partial or total penectomy is the cornerstone of treatment of penis carcinoma. Radiation may be beneficial in a small group of patients with a psychological advantage of organ preservation. For advanced T stages (>T2), radiation has a significant disadvantage. Small lesions involving the prepuce or glans can be managed by circumcision or

excision biopsy. According to Donat et al, Mohs micrographic surgery can be used in early-stage lesions with equally good result as partial penectomy<sup>10</sup>. In Mohs micrographic surgery, layers of malignant cutaneous tissue are removed under local anesthesia. Each shaving is fixed and microscopically examined until the cancer-free plain is reached. It results in glandular deformity. A small proximal tumor can be managed with partial penectomy if a 2cm margin is available. Advanced penile tumors (T4, N2/N3 and/orM1) require total penectomy with perineal urethrostomy. In 50% of the time, inguinal lymphnodes which are palpable are inflammatory. Four to six weeks of antibiotic treatment should be given after treatment of the primary tumor. After the antibiotic course, the groin should be carefully examined for lymphadenopathy. Patients with low-grade tumors in whom nodes normalize after antibiotic therapy are candidates for watchful waiting. Of the persistent nodes, up to 50% will have metastases and in patients with unilateral metastases, up to 50% will have contralateral disease. Sentinel node biopsy is not reliable in view of high false-negative rates<sup>11</sup>. Patients in the low-risk group with clinically negative groin should be advised watchful waiting those in the high-risk group with clinically negative groin should undergo early lymphadenectomy. Modified inguinal node dissection is nowadays' procedure of choice for inguinal node dissection with the advantage of small incision and preservation of the saphenous vein, the transposition of the Sartorius muscle is eliminated, and it has low morbidity as compared to standard node dissection<sup>12</sup>. Complications of inguinal node dissection are limb edema, seroma, lymphocele, scrotal lymphedema, flap necrosis and wound infection. The role of chemotherapy is still evolving and it may be beneficial in presence of advanced unresectable disease and proven lymph node metastases. Combinations of methotrexate, bleomycin, cisplatin (MBP) or vincristine, bleomycin, and methotrexate (VBM) can be used with some success<sup>13,14</sup>.

Those patients, who are on watchful waiting policy for the groin, require clinical examination of groin every 2 months for the first 2 years, then every 6 month for 2 years and then yearly. After inguinal node dissection, patients should be

followed every 3 months for the first 2 years, then every 6 months for 2 years and then yearly<sup>15</sup>.

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