



Histopathology of Carcinoma Penis: An Institutional Experience

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Received: 09 April 2021

Revised: 02 May 2021

Accepted: 12 May 2021

Published: 21 August 2021

Abstract

Background: Carcinoma penis is a rare malignant tumour in male patients in United States with incidence rate less than 1%. Higher incidence rate is seen in Asia, Africa and South America. Highest incidence rates were seen in Paraguay, Brasilia and in Uganda. Association of HPV 16 and 18 is seen in most of the cases of penile carcinoma. Invasive squamous cell carcinoma (SCC) is the most common variety of carcinoma penis. Apart from SCC, basal cell carcinoma, malignant melanoma and sarcoma can occur as malignant lesions of penis. **Methods:** This is a retrospective study conducted in the Department of Pathology, VIMSAR, Burla from January 2017 to December 2019. All the patients' details like age, site and size of lesion, type of surgery done, inguinal lymph node status, stage of disease and histological grade were collected from Histopathology records. Hematoxylin and eosin stained slides were studied. **Results:** Total number of 25 patients with penile lesions were included in the study group out of which 23 cases showed invasive carcinoma and two lesions were in-situ carcinoma. 21 lesions were invasive SCC and 2 lesions were verrucous carcinoma. 80.95% cases were well differentiated SCC. Mean age of presentation was 54.33 years. Maximum number of cases were seen in sixth decade. 69.56% cases showed proliferative lesions and most of the lesions were seen in glans penis. **Conclusion:** Penile carcinoma causes both psychological and clinical morbidity. Improvement of genital hygiene, patient education is essential for prevention of carcinoma penis. Early diagnosis by clinical examination, histopathological diagnosis and proper treatment can reduce both mortality and morbidity.

Keywords: Penile Carcinoma, Squamous Cell Carcinoma, Verrucous Carcinoma

INTRODUCTION

Carcinoma penis is a rare malignant tumour in male patients in United States with incidence rate less than 1:100,000 males. The incidence rate is much higher i.e. 10% to 20% of total male malignancies in Asian, African and South American countries. Highest

incidence rates have been seen in Paraguay, Brasilia and in Uganda. Affected males are in the age group between 50 to 70 years.^[1,2] Etiological factors responsible for carcinoma penis are poor personal hygienic conditions, phimosis, Human papilloma virus (HPV) 16 and 18, lichen sclerosus and smoking habits,

ultraviolet A photo chemotherapy. Circumcision during neonatal period protects against HPV infection and decreases the incidence of penile cancer as seen in Jewish population.^[3,4] Squamous cell carcinoma (SCC) is the most common malignant tumour occurring in penis and sites affected are glans penis, foreskin and shaft of the penis.^[5,6] Other rare malignant conditions in skin are basal cell carcinoma, malignant melanoma and very rarely sarcoma^[4]. Apart from invasive carcinoma precancerous lesions like Bowen disease, Bowenoid papulosis and erythroplasia of Queyrat can occur which can later on progress into SCC.^[7] Diagnosis of metastatic disease is very important for treatment and prognostic purpose. Recently dynamic sentinel lymph node sampling methods are used for impalpable inguinal lymph node. In addition to this, single photo emission computed tomography (SPECT) and positron emission tomography- computed tomography (PET-CT) can be very useful in exactly locating the lesion.^[8]

Early diagnosis of in-situ and invasive carcinoma is very essential to reduce clinical complications and psychological morbidity.

MATERIAL AND METHODS

This is a retrospective study conducted in the Department of Pathology, VIMSAR, Burla from January 2017 to December 2019. A total number of 25 patients with penile lesions diagnosed as invasive carcinoma and insitu carcinoma of penis were included in the study group. The details of the patients like name, age, site of the lesions, type of surgery done, specimen type (penectomy, circumcision, excisional biopsy), lymph node status and histological diagnosis like type of carcinoma, histological grading were collected from histopathology records of the

corresponding years. Hematoxylin and eosin stained slides were reviewed where ever necessary. Biopsy specimens received were partial penectomy with or without inguinal lymph node, circumcision specimen, incisional biopsy tissue from ulcerative or small proliferative growth. Simple statistical calculation was done to know percentage of patients affected and histological types of carcinoma penis.

Inclusion criteria- Histopathologically diagnosed cases of in-situ and invasive carcinoma of penis were included in our study.

Exclusion criteria- Inflammatory penile lesions were excluded from our study group.

RESULTS

Total number of 25 patients with penile lesions were included in our study group. 23 patients presented as penile growth rest two patients had ulceration in the glans penis. 18 partial penectomy specimens, 2 circumcision specimens and 5 excisional biopsies were received. We had no complete penectomy specimen. 2 lesions which clinically presented as erythematous lesions were diagnosed as insitu carcinoma. 21 lesions were diagnosed as invasive squamous cell carcinoma and 2 lesions as verrucous carcinoma (Table-4). 14 lesions were found in glans penis (60.87%), 6 in prepuce (26.09%), rest (3) of the lesions were seen in the shaft of penis. Among 21 invasive squamous cell carcinoma 13 lesions were well differentiated invasive squamous cell carcinoma and 8 lesions were moderately differentiated squamous cell carcinoma. Most common age group affected were the males of sixth decade (43.47%). (Table-1) Youngest patient in our study was a 31 year old male and the oldest patient was 78 years old. Mean age of presentation was 54.33 years. Maximum

number (69.56%) of cases clinically presented as a proliferative lesion. Most of the patients in our study were stage II (52.17%) and 4.34% cases were stage IV. (Table-3) Out of 23 invasive carcinoma, 8 patients had undergone inguinal lymph node dissection. 5 cases showed metastatic squamous cell carcinomatous deposits. Those patients were mostly in stage III and stage IV disease. In our study no death case were recorded in last 3 years.

DISCUSSION

Before manifestation of invasive carcinoma, most of the malignant lesions were associated with precancerous lesions like penile intraepithelial neoplasia (PeIN). Nowadays both invasive SCC and PeIN are grouped into HPV related and HPV non related group. HPV types 16 and 18 are most commonly implicated in the pathogenesis of PeIN. PeIN is classified into two types, differentiated and undifferentiated type.^[9,10]

In our 3 years retrospective record study we found only two cases of in-situ carcinoma and 23 cases of invasive carcinoma, which implies that patients in our study mostly sought treatment when the disease was at an advanced stage. Mean age of presentation was 54.33 years and most of the cases showed invasive SCC which correlated with the study by Latha PS, Chaitanya B and Reddy SR.^[11] We found most of the patients were in stage II as in the studies of Di Capua

et al.^[12] In the study by Pow-Sang et al they found that the glans penis was the most commonly affected site (48% of their cases) while in our study we found that the glans penis was the site of lesion in 60.86% of the 23 penile malignancies.^[13] Kusmawan E et al in their study found node positivity in stage II and III.^[14] In our studies it was seen in stage III and stage IV disease. Wanick FB et al in their studies between 1978 to 2004 found 8 in situ and 26 invasive carcinoma.^[15] Morrison BF et al. in their 10 years retrospective study included 26 penile cancer and 78% had regional disease but in our 3 years retrospective study we found 2 cases of in-situ and 21 cases of invasive carcinoma.^[16] That implies the occurrence of carcinoma penis is higher in catchment area of our tertiary care hospital.

CONCLUSION

Penile carcinoma causes both psychological and clinical morbidity. Improvement of genital hygiene, patients education is essential for prevention of carcinoma penis. Early diagnosis by clinical examination, histopathological diagnosis and proper treatment can reduce both mortality and morbidity. Recent advances in diagnostic modalities and management of metastatic diseases reduces mortality due to carcinoma penis.

Table-1. Distribution of patients showing invasive carcinoma according to age group. N=23

Age in years	Number of cases	Percentage
31-40	02	8.69%
41-50	06	26.08%
51-60	10	43.47%
61-70	03	13.04%
71-80	02	08.69%

Table- 2. Clinical presentation of patients havinginvasive carcinoma.N=23

Type of lesion	No of cases	Percentage
Ulcerative	04	17.39
Proliferative	16	69.56%
Ulceroproliferative	03	13.04%

Table-3. Stage at diagnosis

Clinical stage	No of cases	Percentage
Stage-I	04	17.39%
Stage-II	12	52.17%
Stage-III	06	26.08%
Stage-IV	01	4.34%

Table-4. Histopathological diagnosis of penile lesions n=25

Type of carcinoma	No of cases	Percentage
In situ carcinoma	02	08%
Verrucous carcinoma	02	08%
Invasive SCC	21	84%
Well differentiated SCC	17	73.91%
Moderately differentiated SCC	4	17.39%

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Source of Support: Nil, Conflict of Interest: None declared