

Original Research Article

A STUDY EPIDEMIOLOGY AND CLINICAL FEATURES OF PENILE CANCER

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ABSTRACT

Background

Penile cancer can cause deformity, loss of function, and even death. Therefore, it is essential to identify penile cancer early in the clinical context and to correctly diagnose the patients. Precise staging is critical for penile cancer because the prognosis and management vary depending on lymph node status, the degree of local disease, and other factors. This study was conducted to investigate the epidemiological and clinical characteristics of penile cancer.

Methods

This was an observational study of carcinoma penis conducted among 15 patients treated in the surgical units of SUT Academy of Medical Sciences Hospital, Vattappara, Trivandrum, from October 2013 to July 2016. A detailed history with respect to primary symptoms such as swelling or ulceration, discharge, bleeding, etc. was obtained. A history of circumcision, sexual hygiene, and habits was obtained. A thorough general, local and regional lymph node examination was carried out.

Results

The majority of patients (40.00%) were between the ages of 51 and 60, while 26.66% were between the ages of 61 and 70. The oldest patient was 85 years old, and the youngest was 40. Not a single patient was younger than 40 years old, and only two were under 30. Poor personal hygiene, balanitis, and balanoposthitis phimosis were the most frequent predisposing variables. About 40.00% of cases were related to phimosis, 20.00% to balanitis, and 40.00% to poor

personal hygiene. The lesion began as an ulceration in 33.33% of patients, as phimosis in 26.66%, and as nodular swelling in 20% of patients. Two patients (13.33%) reported discharge; however, one patient's primary complaint was discomfort or itching. In this study, approximately 20.00% of patients sought medical advice after three months, while 33.33% of patients did so after one to three months. In a month, only two patients made an appearance. Two (13.33%) of the patients showed up two years later.

Conclusion

Penile cancer is still a common condition in our country, primarily affecting men over the age of 50, with phimosis serving as a significant risk factor. The majority of patients presenting with an ulcer were found to have affected the glans the most frequently. The wait period is between one and three months for medical care. Reducing the incidence of this disease might benefit from more research on the topic that explores the causal causes and preventive approaches.

Key Words: Penile Cancer, Epidemiology and Clinical Features.

INTRODUCTION

Penile cancer is still widespread in underdeveloped countries in Asia, Africa, and South America, despite being rare in wealthy nations.^[1] In certain nations, the incidence of cancer in men might reach 10% to 20%.^[2] This illness may cause mortality, deformity, and function loss. All patients have a 5-year survival rate of about 50%; it varies from 66% in patients with negative lymph nodes to 25% to 30% in patients with positive inguinal lymph nodes and nearly 0% in patients with metastases of pelvic lymph nodes.^[3] Therefore, it is essential to identify penile cancer early in the clinical context and to correctly diagnose the patients. Precise staging is critical for penile cancer because the prognosis and management vary depending on lymph node status, the degree of local disease, and other factors. This study was conducted to investigate the epidemiological and clinical characteristics of penile cancer.

MATERIALS & METHODS

This was an observational study of carcinoma penis conducted among 15 patients treated in the surgical units of SUT Academy of Medical Sciences Hospital, Vattappara, Trivandrum, from October 2013 to July 2016. A detailed history with respect to primary symptoms such as swelling or ulceration, discharge, bleeding, etc. was obtained. A history of circumcision, sexual hygiene and habits was obtained. A thorough general, local, and regional lymph node examination was carried out. The findings were tabulated for analysis.

RESULTS

Age	No. of Patients	Percentage
Below 20 yrs.	-	-
21 – 30 yrs.	-	-
31 – 40 yrs.	2	13.33%
41 – 50 yrs.	1	6.66%
51 – 60 yrs.	6	40.00%
61 – 70 yrs.	4	26.66%
71 – 80 yrs.	1	6.66%
81 – 90 yrs.	1	6.66%

Table 1: Age Incidence

The majority of patients (40.00%) were between the ages of 51 and 60, while 26.66% were between the ages of 61 and 70. The oldest patient was 85 years old, and the youngest was 40. Just two patients were under 30 years old, and no patient was younger than 40.

Sl. No	Causes	No. of Patients	Percentage
1	Phimosis	6	40%
2	Balanitis	3	20%
3	Venereal Disease	-	-
4	Leukoplakia	-	-
5	Poor Personal Hygiene	6	40%

Table 2: Pre – Disposing Factors

Poor personal hygiene, balanitis, and balanoposthitis phimosis were the most frequent predisposing variables. About 40.00% of cases were related to phimosis, 20.00% to balanitis, and 40.00% to poor personal hygiene. Leukoplakia and venereal disease were not noted.

Causes	No. of Patients	Percentage
Ulcer	5	33.33%
Phimosis	4	26.66%
Irritation/Itching	1	6.66%
Discharge	2	13.33%
Nodule/Wart	3	20.00%

Table 3: Mode of Onset

The lesion began as an ulceration in 33.33% of patients, as phimosis in 26.66%, and as nodular swelling in 20% of patients. Two patients (13.33%) reported discharge; however, one patient's primary complaint was discomfort or itching.

Period	No. of Patients	Percentage
< 1 Month	2	13.33%
1 – 3 months	5	33.33%
3 – 6 months	3	20.00%
6 – 9 months	1	6.66%
9 – 12 months	1	6.66%
1 – 2 months	1	6.66%
2 years and above	2	13.33%

Table 4: Delay between Onset and First Consultation with Doctor

In this study, approximately 20.00% of patients sought medical advice after three months, while 33.33% of patients did so after one to three months. In a month, only two patients made an appearance. Two (13.33%) of the patients showed up two years later.

Site	No. of Patients	Percentage
Prepuce	6	40.00%
Glans	7	46.66%
Coronal Sulcus	1	6.66%
Shaft	1	6.66%

Table 5: Site of Lesion

In this study, 46.66% of patients had glans penis involvement. In 40.00% of cases, the prepuce's inner side had growth. Shaft and coronal sulcus involvement was seen in 6.66% of cases.

Nature of Lymph Nodes	No. of Patients	Percentage
Not enlarged	8	56.66%
Unilaterally and bilaterally enlarged	6	40.00%
Clinically fixed and fungated	1	6.66%

Table 6: Involvement of Regional Nodes

Eight (56.66%) patients in this research had no clinically significant lymph node enlargement. One patient had firm, fungating lymph nodes in the inguinal area, and forty percent of patients had swollen lymph nodes on one or both sides.

Treatment	No. of Patients	Percentage
Circumcision with mould	-	-
Partial amputation	9	60.00%
Total amputation	2	13.33%
Partial amputation with block	2	13.33%
Total amputation with block	1	6.66%
External irradiation	1	6.66%
Chemotherapy	-	-

Table 7: Treatment Adopted

Every one of the 15 cases that were examined had histological proof. There was not a single instance of secondary penile cancer.

Nine patients underwent partial amputation; two underwent total amputation; and two underwent partial amputation along with inguinal block dissection. Palliative chemotherapy was not administered to any of the patients; just one patient got external irradiation. A biopsy taken from the margin of the lesion or circumcision combined with a biopsy was used to confirm the diagnosis of penile cancer.

Radiation therapy or partial amputation were the treatment options for lesions limited to the prepuce or glans.

A complete amputation was performed for lesions that invaded or came from the shaft. With the exception of very young patients, emasculation was frequently performed in conjunction with total amputation. Even though the inguinal glands were enlarged, they were

only treated 4–6 weeks after the underlying disease was treated since it was found that in many cases, the glands vanished at that point.

DISCUSSION

Age Incidence

The majority of the patients in the current study (40.00%) were between the ages of 51 and 60, and 26.66% were between the ages of 61 and 70. The oldest patient was 85 years old, and the youngest was 40. Not a single patient was younger than 40 years old, and only two were under 30. According to the literature now in circulation, penile cancer is primarily diagnosed in older men (median age of 68 years), with an increased risk as age exceeds 50 years. However, up to 15% of cases occur in individuals younger than 50 years.^[4]

Pre-Disposing Factors

Any male patient can get penile cancer, yet there are certain known risk factors. The frequent predisposing factors in the current study were inadequate personal hygiene, balanitis, and balanoposthitis phimosi. About 40.00% of cases were related to phimosi, 20.00% to balanitis, and 40.00% to poor personal hygiene. Leukoplakia and venereal disease were not noted.

Sexual function, calculi, pain when voiding, urine retention, and localised skin infections are all possible consequences of severe phimosi. Phimosi has been seen in 44% to 85% of instances in individuals with penile cancer, making it a common occurrence in these people. Phimosi has also been demonstrated to induce dysplastic epidermal alterations in the preputial sac^[5] epithelium and to be a critical component required to promote experimental carcinogenesis. According to epidemiologic research, men who are circumcised at birth have a very low incidence of penile SCC.^[6] Just two (2.3%) of the 213 adult men with penile cancer in a recent study had invasive SCCs, whereas 16 (15.7%) had in situ SCCs. All of the men had been circumcised as babies.^[7] Out of 45 patients diagnosed with penile cancer in a different study, just two had undergone early circumcision.^[8] Compared to men who were circumcised at a young age, uncircumcised men are considerably more likely to get penile cancer. Phimosi impairs surveillance of the high-incidence areas of the glans, inner preputial layer, and coronal sulcus and is significantly linked to the risk for penile cancer.^[9]

Early circumcision prevents the accumulation of smegma under the foreskin, particularly when there is inadequate genital cleanliness. Smegma, which is produced when bacteria break down exfoliated preputial cells, has been shown to induce cancer in animals. It can also result in recurring infections and chronic inflammation, which can cause preputial adhesions and phimosi-persistent balanitis. According to a case-control study of 244 patients with penile cancer, relapsing bacterial, mycotic, or viral chronic balanitis may also enhance the likelihood of developing an invasive carcinoma. The study found that 45% of patients and 8% of control subjects had a history of balanitis.^[10]

Even in the absence of phimosi, poor genital hygiene in uncircumcised men can result in the retention of germs and secretions, including smegma. It has been questioned if circumcision offers the same amount of protection against penile SCC as appropriate genital personal hygiene practices in uncircumcised males. A recent study found no evidence of a correlation between penile cancer and the frequency of bathing or the method used to clean the anogenital area immediately before and after sexual intercourse, despite the fact that a lower

incidence of penile SCC is observed in countries and communities with high standards of genital hygiene and widespread diffusion of private bathing facilities, even among uncircumcised individuals.^[11]

Mode of Onset

In this study, the lesion began as an ulceration in 33.33% of the patients, as phimosis in 26.66%, and as nodular swelling in 20% of the patients. Two patients (13.33%) reported discharge; however, one patient's primary complaint was discomfort or itching.

Approximately two-thirds of men with penile cancer present with a localised illness, according to the literature.^[2] The most common symptom of penile cancer is a palpable or visible lesion on the penis. The lesion may have developed from a premalignant lesion or carcinoma in situ, or it may have started as an invasive carcinoma from scratch. The appearance might range from a warty, exophytic look to an ulceration with heaping borders, erythematous or indurated patches. Huben and Sufrin^[12] reviewed over 3,500 published cases between 1908 and 1984 and discovered that the most common lesion was described as a mass, lump, or nodule in 47% of cases, an inflammatory lesion in 17%, an ulcer or sore in 35% of cases, and an incidental diagnosis made during the evaluation of a circumcision specimen in 0.7% of cases. In patients with phimosis, which has been found to affect up to 60% of patients with penile cancer in Brazil, the lesion may be concealed by the foreskin.^[13] In addition, related inflammatory diseases like lichen sclerosis or balanitis may mask the lesion.

Delay between Onset and First Consultation with Doctor

Interval between the start and the first doctor's consultation penile cancer frequently presents later than expected, most likely as a result of social stigma and denial. In this study, approximately 20.00% of patients sought medical advice after three months, while 33.33% of patients did so after one to three months. In a month, only two patients made an appearance. Two (13.33%) of the patients showed up two years later. 15% and 50% of patients, respectively, postponed seeking treatment for at least a year after exhibiting symptoms, according to earlier research. For instance, research by Narayana and colleagues^[14] revealed that out of 176 patients whose records indicated how long it had been since they first noticed symptoms, 85 (48.3%) sought care within six months, 37 (21.0%) waited between six and twelve months, and 54 (30.7%) waited longer than a year. When penile cancer spreads to regional lymph nodes and beyond, it becomes fatal; thus, any delay in diagnosis, whether due to the patient delaying seeking treatment or the doctor delaying a necessary procedure is fatal.

Site of Lesion

In this study, 46.66% of patients had glans penis involvement. In 40.00% of cases, the prepuce's inner side had growth. Shaft and coronal sulcus involvement was seen in 6.66% of cases.

The prepuce, coronal sulcus, and glans penis are the areas where penile cancer most frequently occurs. A recent study of over 5,000 cases of invasive penile cancer in men in the US found that 13.2% of cases were in the prepuce, 5.3% were in the shaft, 34.5% were in the glans penis, 4.5% were overlapping, and 42.5% had no clear indication of where the disease originated.^[2] Therefore, only 11.2% of cases with a designated location had the illness limited to the shaft. These findings support previous data gathered by Huben and Sufrin^[12] who

discovered that in 48% of patients, the lesions were limited to the glans, only on the prepuce in 21% of cases, the glans or prepuce with extension to the shaft in 14% of cases, both the glans and prepuce in 9% of cases, the coronal sulcus in 6% of cases, and isolated carcinomas on the shaft in less than 2% of cases. Primary involvement of the skin of the shaft is rare, occurring in less than 2% of patients. Most lesions occur on the mucosa of the glans (48%), but they can arise at any site on the penis, including the foreskin (21%) the coronary sulcus (6%), or both (9%).

Assessment of Regional Nodes

Involvement of the lymph nodes is important for prognosis and therapy planning. When determining the status of the inguinal lymph nodes in obese patients or those who have had prior inguinal surgery, a physical examination is typically supplemented with CT (Computed Tomography). Eight patients (56.66%) in this research had no clinically significant lymph node enlargement. One patient had firm, fungating lymph nodes in the inguinal area, and forty percent of patients had swollen lymph nodes on one or both sides.

Less than half of patients with palpable inguinal lymph nodes at the time of presentation have positive lymph nodes at the final pathologic examination, according to earlier studies. Additionally, infections or inflammatory conditions at the primary site of the disease result in other enlarged lymph nodes.^[15] However, 15% to 20% of patients who have nonpalpable lymph nodes ultimately have a disease.

Up to 64% of individuals with penile SCC may exhibit swelling of the inguinal lymph nodes, according to other research.^[16] But whereas secondary infection frequently causes swelling of the local lymph nodes, only around 45% of these individuals histologically show evidence of lymphatic metastasis. However, 20% of patients with lymph nodes that are not palpable exhibit metastases of lymph nodes on histology.^[17] The development pattern of the tumour and its depth of penetration into underlying tissues are associated with the frequency of metastases to regional lymph nodes. Patients exhibiting a flat growth pattern and substantial penile shaft involvement with high-grade SCCs are more likely to experience involvement of the inguinal lymph nodes than patients with well-differentiated or superficially invasive tumours (2 cm).^[18,19]

Treatment Adopted

A biopsy taken from the margin of the lesion or circumcision combined with a biopsy was used to confirm the diagnosis of penile cancer. Every one of the 15 cases that were examined had histological proof. There was not a single instance of secondary penile cancer. Nine patients underwent partial amputation; two underwent total amputation; and two underwent partial amputation along with inguinal block dissection. Palliative chemotherapy was not administered to any of the patients; just one patient got external irradiation.

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CONCLUSION

Penile cancer is still a common condition in our country, primarily affecting men over the age of 50, with phimosis serving as a significant risk factor. The majority of patients presenting with an ulcer were found to have affected the glans the most frequently. The wait period is between one and three months for medical care. Reducing the incidence of this disease might benefit from more research on the topic that explores the causal causes and preventive approaches.

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