

## Incidence of Penis Carcinoma: Observation Cross Sectional Study

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### Abstract

Carcinoma of penis has been a significant world health problem especially among people of poorer socioeconomic status. It is one of the first neoplastic diseases described. Even though the exact aetiology of carcinoma of penis is not known early circumcision in Jews and Muslims may account for low incidence in them. Low socioeconomic status and non circumcision are related to higher incidence. This study was undertaken in KIMS, HUBLI during the period November 2005 to October 2006. This study was too small to establish incidence of carcinoma in general population. An epidemiological study in the general population will establish the true incidence of disease. Total 4% incidence was seen in the present study intervention. The highest incidence was observed in the age group 41-50years 33.33% it was found to be statistically significant  $p \leq 0.0001$  followed by 31-40 years 22.22%  $p \leq 0.0221$ , 51-60years 16.60%  $p \geq 0.3283$  least incidence was found in 21-30years 11.10%  $p=0.1608$  respectively. IQR range was 36-85 years, Youngest was in 36 yrs old and oldest was 85 years. It was commonly seen in uncircumcised population with prior history of Phimosis, chronic balanoposthitis and poor genital and sexual hygiene. The disease was also noted to be common in adult life between 40-60 years. Proper education, early circumcision, better sexual and genital hygiene can prevent causation of the disease.

**Keywords:** Penis Carcinoma; Incidence; Uncircumcised; Disease.

### Introduction

Carcinoma of penis has been a significant world health problem especially among people of poorer socioeconomic status. It is one of the first neoplastic diseases described. Even though the exact aetiology of carcinoma of penis is not known early circumcision in Jews and Muslims may account for low incidence in them. Low socioeconomic status and non circumcision are related to higher incidence. In majority of the patients in India present in very late stage of the disease. The reasons for this include ignorance, guilt, embarrassment, fear and personal negligence. Many a times it is mistaken for a venereal disease and as venereal disease carries social stigma with it. It is not presented till it becomes advanced. Early diagnosis of the condition is of extreme importance since it may reduce the surgery and physiological trauma allocated with delayed treatment. The present study aims to study incidence of disease with relation to age, religion, marriage and socioeconomic status, correlate various modes of clinical presentation of disease staging and its management.

### Materials and Methods

The data was collected in prescribed proforma inclusion with patient history, clinical examination and investigation of carcinoma of penis admitted in KIMS Hospital, Hubli during the period of November 2005 to October 2006. A Sample size was limited intact with incidence of carcinoma is very less in Indian Context, all suspected and diagnosed patients was recruited for the study purpose (Considering 95% confidence limits and 20% permissible error with 0.4% prevalence carcinoma of penis, sample size works out to be 40 cases). Since so many cases are not available in the study period of one year, a time bound study was carried out during the period November 2005 to October

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2006. The following inclusion and exclusion criteria was adopted during the study intervention Inclusion; all patients with carcinoma of penis in the surgery ward in KIMS, Hubli proved by biopsy. Exclusion criteria; Presence of seconderies in the penis or other condition other than malignancy. Although, Patients were assessed clinically after taking history. The FNAC/ Incisional biopsy of primary lesion was done to confirm the diagnosis. If inguinal nodes were enlarged (palpable) FNAC of the nodes was done. For primary lesion a partial or total penectomy was done. Lymph node seconderies were managed by inguinal block dissection of nodes and radiotherapy. Results were testified. Follow up was done for local recurrence, distant metastasis and for complications of the therapeutic procedure. Manwhiteny –U non parametric test was used to testing the hypothesis, Data sets was analysed by using R statistical software -2016 version.

**Results**

This study was undertaken in KIMS, HUBLI during the period November 2005 to October 2006. This study was too small to establish incidence of carcinoma in general population. An epidemiological study in the general population will+ establish the true incidence of disease.

The highest incidence was observed in the age group 41-50years 33.33% it was found to be statistically significant  $p \leq 0.0001$  followed by 31-40 years 22.22%  $p \leq 0.0221$ , 51-60years 16.60  $p \geq 0.3283$  least incidence was found in 21-30years 11.10%  $p=0.1608$  respectively. IQR range was 36-85 years , Youngest was in 36 yrs old and oldest was 85 years (Table 1).

From the Table 2 depicted that, the predisposing factors of carcinoma, as per the resulted observations it was found that Phimosis (38.88%)  $p= 0.0633$ , Chronic balanoposthitis (38.88%)  $p=0.0742$ , Not circumcised (94.4%)  $p=0.0002$ , Veneral wart (5.50%)  $p= 0.8961$ , Leukoplakia (11.11%)  $p=0.8425$  and Trauma scar (5.55%)  $p=0.9122$  above carcinoma penis has occurred in patients not having circumcised having phimosis. Chronic balnoposthitis, leukoplakia, veneral warts, chronic scars were found to be predisposing factors.

From Table 3 data majority were Labourers and agricultural workers belonging to lower socioeconomic status. Few cases were also noted from the middle class group. None were in high socioeconomic status. Majority the event was found in Hindu religion 94.40%  $p=0.001$ , muslim only one cases has documented during the study period and it was insignificant difference between the present incidence level in Indian context.

**Table 1:** Showing age incidence of penis carcinoma with different age group

Age in years	No of cases	Percentage (%)	P-value (Manwhiteny U stat P)
21-30	2	11.1	$\geq 0.1608$
31-40	4	22.2	$\leq 0.0221$
41-50	6	33.3	$\leq 0.0001$
51-60	3	16.6	$\geq 0.3283$
61-70	2	11.1	$\geq 0.4146$
71-80	1	5.5	$\geq 0.3618$

**Table 2:** Showing distribution of predisposing factors

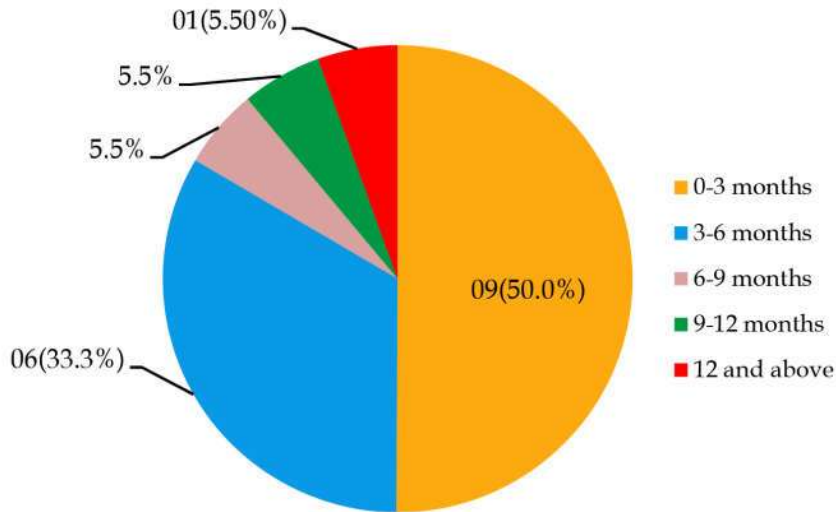
Local Condition	No of Cases	Percentage (%)	P-value
Phimosis	07	38.8	0.0633
Chronic balanoposthitis	07	38.8	0.0742
Not circumcised	17	94.4	0.0002
Veneral wart	01	5.5	0.8691
Leukoplakia	02	11.1	0.8425
Trauma scar	01	5.5	0.9112

**Table 3:** Distribution of demographic profile of exposed population

Socioeconomic	No of cases	Percentage (%)	P-value
<b>Occupation</b>			
High class	Nil	Nil	-
Businessman	4	22.2	0.112
Agricultural workers	10	55.5	0.0002
Labourers	4	22.2	0.632
<b>Religion</b>			
Hindus	17	94.4	0.001
Muslim	1	5.6	0.852
Others	nil	nil	-

**Table 4:** Showing distribution of mode of presentation

S. No	Mode of presentation	No of cases	Percentage (%)
1	Swelling/ulcer	18	100
2	Foul smelling discharge	8	44.4
3	Itching	6	33.3
4	Urinary complaints	3	16.7
5	Pain	10	55.5
6	Symptoms due to seconderies	2	11.1

**Fig. 1:** Showing duration of disease**Table 5:** Showing various procedures

S. No.	Various procedures done	No of cases	P-value
1	Circumcision	0	-
2	Partial penectomy	14	0.000
3	Total penectomy	2	0.566
4	Amputation with IBD	2	0.522
	Total	18	

Most of the cases in the study presented during the initial 6 months of complaints. 50% of cases presenting within 3 months and another 33% of cases within 6 months of onset of complaints (Fig. 1).

Results was found that only two cases presented with a compliant of swelling in the groin apart from the complaint related to the primary. Foul smelling discharge 44.40%, Itching 33.33%, Urinary complaints 16.70%, Pain 55.55% & Symptoms due to seconderies 11.11% (Table 4).

In the present series four cases/patients had positive inguinal lymph nodes were advised block dissection. Two of them agreed for block dissection of inguinal nodes. The procedure was done bilaterally along with amputation of penis. Two patients consented only for amputation of penis. One of them underwent a course of radiation and the other did not agree for either surgery or radiotherapy for inguinal region. Patient who had bilateral lymph node metastasis in both inguinal

regions disagreed for surgery for the inguinal region and consented only for amputation of penis. Then was later given radiotherapy for inguinal region. The total dose of radiotherapy was 6000 rads give in daily dose of 200 rads for 5 days per week for a period of 6 weeks. Wound infection–Minor wound infection occurred at the operative sites. This was treated with appropriate antibiotics as per the culture sensitivity reports. Stenosis of urethral opening all responded to repeated urethral dilatation. Excoriation of scrotal wall this observed in 1 patient. It was treated with application of regular dressings with providio-iodine ointment.

## Discussion

The analysis of data was done and was compared with other studies. Considering the above data it is evident that there is varying degree of distribution of carcinoma of penis in our country. In present study it

roughly is around 4% considering the hospital admission and number cases of male cancer. However an epidemiological study is required to estimate the incidence of this cancer. similar study reported by Paymaster et al., (1967), Shanti jain et al. (1981), Venkataraman et al. (1963). The data shows that the age incidence is at its peak between 40-50 years of age. In the present series patients ranged from 41 to 60 years. The mean age of presentation was 57.3 years which was quite comparable with two different studies by mentioned above in the table. Results found that, the most of the patients presented with growth or ulcer over the penis. 50% of patients noticed pain after variable delay. Next common feature was itching, burning micturation or lymph node enlargement in groin. Surprisingly the urinary obstruction is never seen as the it rarely invades the urethra despite its in close proximity.

This malignancy is mostly seen in communities where routine circumcision is not practiced. In present series of patients 17 cases were uncircumcised and one patient was circumcised. Circumcision affords very strong protection against penile cancer. It is estimated in studies that about 0.1% of uncircumcised men develop penile cancer in developed nations. Its devastating effect and poor prognosis in those affected, and impact on their families, should not be downplayed, especially in the developing countries where penile cancer rates are highest and treatment options are limited. Circumcision has also role in protecting against cervical cancer in their female partners, HIV, other STIs [3].

In our study 38.8% of the patients had Phimosis. All the patients had poor genital and sexual hygiene. All of these factors predisposed to the chronic balanoposthitis.

Leucoplakia are rare white, verrucous plaques can arise on mucosal surfaces. These genital lesions occur on the glans or prepuce and is more commonly in patients with diabetes, probably related to recurrent and chronic infection. Dysplastic changes have been reported in 10–20% of cases leucoplakia. In the present series leukoplakia was seen in two cases accounting for about 11% of cases.

According to Hoffman 1915 carcinoma of penis was found to be more common among the married people. In present series all patients were married. Socioeconomic status; all patients were of poor socioeconomic background with most of them being illiterate. Only three of the patients were educated and had studied only primary level of education. Inguinal block dissection was carried out in 2 patients who had inguinal metastasis. One of the patients with nodal involvement refused surgery for inguinal area was given radiotherapy. Thus the acceptance of the surgery by the patient is also an important factor which plays an important part in the management. No patient was given

chemotherapy as patients with enlarged bulky nodes did not agree for the same. The incidence of postoperative stricture in the present series is present series is 11.1%. Both occurred in cases who underwent total amputation with perineal urethrostomy. Wound infection was seen in 55% of cases and one patient showed excoriation of scrotal wall. Mortality for the cases with stage I and II was nil. But the cases with stage III and IV could not be commented since they were not available for follow up. Since the follow up period is very short definite mortality figures cannot be given.

## Conclusion

Carcinoma of penis is a rare malignancy in our country occurring most commonly in uncircumcised population of low socioeconomically status with poor genital and sexual hygiene. It has strong association with prior history of Phimosis, chronic balanoposthitis. Circumcision in the neonatal period offers protection from the disease however prepubertal circumcision does not offer much protection from the disease.

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