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Original Research Article

Observational study on carcinoma penis in Jharkhand

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ABSTRACT

Background: Carcinoma of penis is relatively uncommon tumor. In India the incidence is relatively higher than western countries. It is the assumption that smegma is someway carcinogenic. Circumcision soon after birth confirm immunity against penile cancer. Many patients presents late either due to embarrassment or misdiagnosis. Surgery is the mainstay of treatment. Nodal involvement indicates a poor prognosis. Chemotherapy is relatively ineffective. Objective of the study to know the incidence, age group, avoidable risk factor and common presenting symptoms and 1st site of onset of growth of penile cancer in patients of Jharkhand.
Methods: This is an observational study on carcinoma of penis in Jharkhand from 2012 to 2014. The patients were selected from the surgical outpatient and indoor patients, Department of General Surgery, RIMS, Ranchi, Jharkhand. The provisional diagnosis was based mainly on clinical examination and confirmed by biopsy.
Results: Carcinoma of penis in Jharkhand commonly occurs in the 5th decade. This disease most commonly affects people of poor class with poor personal and sexual hygiene. The disease occurs commonly in uncircumcised Hindus particularly with phimosis and tobacco addiction appears to be a risk factor for penile cancer. Patients usually delay consultation with doctors until the disease is advanced.
Conclusions: Penile cancer is associated with poor sexual hygiene, presence of phimosis and and consuming tobacco products is in important predisposing factor.

Keywords: Carcinoma penis, Lack of sexual hygiene, Low socio-economic status, Lymphadenopathy, Phimosis

INTRODUCTION

Carcinoma of penis is a rare tumour in North America and Europe, but is substantial health concern in many African, South American and Asian countries.[1] The incidence increases as we pass from Western to Eastern countries. The disease is rare in Jews population due to ritual circumcision in neonates. The incidence of carcinoma penis in India has been variously reported. Risk factors are poor sexual hygiene, phimosis**,** HPV infection, tobacco products, penile trauma**,** genital UV radiation alone and combined with 8-methoxypsoralen.[1-3] Precancerous dermatologic lesion are leukoplakia, balanitis xerotica obliterans, giant condyloma acuminate.[4]

The most common complaint at presentation is the lesion itself.[4]

The lesion are most commonly seen in the glans (48%) and prepuce (21%).[1] The lesion ranges from relatively subtle induration or small papule, pustule, warty growth or exophytic lesion. It may appear as shallow erosion or as a deeply excavated ulcer with elevated or rolled in edges. Phimosis may obscure a lesion and allow a tumour to progress silently. Eventually, erosion through the prepuce, foul prepucial odour and discharge with or without bleeding may occur. Pain usually appears late when the growth is in much advanced stage. Urinary symptoms are uncommon because urethra is not involved until late stage of the disease. The inguinal lymph nodes

are enlarged in >50% of cases but in only half of the cases the enlargement is due to secondary deposits, the remainder being due to sepsis.[4] Untreated the whole glans becomes a fungating and particularly foul smelling mass. Rarely a mass, ulceration, suppuration, or haemorrhage may present in the inguinal region owing to the presence of nodal metastases from a lesion concealed within a phimotic prepuce and due to torrential haemorrhage following erosion of the femoral or external iliac vessels death may occur. Majority of the patient have squamous cell carcinoma.[1]

Diagnosis: The diagnosis is mainly by clinical examination with biopsy to confirm the diagnosis. CT scan abdomen and pelvis and chest X-ray to rule out metastasis.

Treatment: For Tis or Ta penile preserving techniques, including topical therapy, circumcision and wide local excision, laser therapy (CO_2 or Nd:YAG laser), partial or total glans resurfacing. For T1G1-2 penile preserving techniques, wide local excision plus reconstructive surgery.[5] For T1G3-4 & T ≥2 and tumor is <50% of glans and no invasion of the corpora cavernosa, wide local excision or glansectomy.[5] If tumor is involving the corpora cavernosa, partial or total penectomy is done.[6]

Management of inguinal lymph nodes: The single most important prognostic factor for cancer specific survival is the presence of nodal metastasis.[7]Active surveillance is appropriate for patient with no palpable LAD and Tis, TaG1 and T1G1 disease, although follow up and clinical exams should be done every 2-3 months. Without LAD and T1G2 disease or higher, a DSNB followed by ILND if DSNB (dynamic sentinel node biopsy) is positive for malignancy. For patients with palpable LAD, either USG guided FNA or DSNB cab be performed, followed by ILND if positive. Pelvic LND is recommended for those with extranodal metastasis, node of Cloquet involvement, or two or more inguinal node metastasis.[7]

Adjuvant chemotherapy is appropriate for patients with pN2 or pN3 disease after ILND, and neoadjuvant chemotherapy for patients with fixed or relapse LAD.

Objective of the study to know the incidence, age group, avoidable risk factor and presenting symptoms and 1st site of onset of growth of penile cancer in patients of Jharkhand.

METHODS

This is a prospective study on "observation on carcinoma of penis in Jharkhand" carried out at Department of Surgery, Rajendra Institute of Medical Sciences, Ranchi, during the period from August 2012 to July 2014. All patients with penile lesion were examined clinically and biopsy was done to confirm the diagnosis. In this study patients on chemotherapy and or radiotherapy have been excluded.

Detailed history of patient and clinical examination that includes general examination and local examination were done.

Inspection: The site, size, shape, colour, surface and margin of ulcer, size and shape of growth, presence or absence of phimosis, any bleeding or discharge from the lesion.

Palpation: The entire penis was palpated for the extent of the ulcer, growth or induration. The prepuce, the glans and the shaft of the penis, urethra, and scrotum with testicles were examined for the extent of involvement and infiltration. Inguinal groups of lymph nodes of both sides were thoroughly examined for the enlargement, tenderness, mobility or fixation to the skin or deeper structure.

Investigations: Routine blood investigation and routine urine and culture and sensitivity testing. Special investigations included ultrasound of pelvic organs and abdomen, CT scan of pelvis and abdomen, Preoperative biopsy and histopathological examination of the penile lesion.

RESULTS

Thus, out of total 222 cases of carcinoma in male patients that attended this hospital in the two year period, 12 cases were of carcinoma of penis which gives an incidence of 5.4% of total.

Thus, penile cancer was prevalent mostly in between the age of 30-70 years, the highest being in age group 41-50 years and the youngest age group was 21-30 years.

Table 1: Incidence of cancer penis out of total number of cancer cases in male at RIMS (n=12).

Years	Surgical indor		Percentage (%)
	Total No. of cancer cases in male	Total no. of penile cancer	
2012-13	102	5	4.9
2013-14	120	7	5.8
Grand total	222	12	5.4

Thus, the patients of carcinoma penis presented themselves in majority of cases with more than one complaint usually a growth, an ulcer, with or without foul smelling discharge, irritation and burning sensation and occasional bleeding.

The average delay between onset of the disease and first consultation was between 7-9 months in 7 (58.3%) cases and in 2 (16.7%) case the delay was 4-6 months.

Thus, in 6 (50%) patient out of 12, the site of onset of the growth was either the prepuce followed by glans (33.3%). Cauliflower or fungative type of lesions were much more common (66.6%) than the ulcerative type (25%). In 100% cases, carcinoma of penis was histologically squamous cell carcinoma.

Table 2: Age wise distribution in cases of carcinoma penis (n=12).

Age groups (in years)	No. of cases	Percentage (%)
Below 20	Nil	Nil
21-30	1	8.3
31-40	3	25
41-50	5	41.7
51-60	2	16.7
61-70	1	8.3
71-80	Nil	Nil
81-90	Nil	Nil
91-100	Nil	Nil

Table 3: Showing the various presenting complains of the patients suffering from carcinoma penis at the time of first examination (n=12).

Complaints	No. of cases	Percentage (%)
Growth over penis	9	75
Ulceration of penis	3	25
Foul smelling discharge	6	50
Irritation and burning sensation	2	16.5
Bleeding on touch	3	25
Inability to retract prepuce which was previously retractable (Adherent prepuce)	1	8.3
Mild Pain	Nil	Nil
Non-healing of circumcision wound	1	8.3
Swelling inguinal lesion	Nil	Nil
Difficulty in micturition	Nil	Nil

Table 4: Delay between the onset of the disease and first consultation with a doctor (n=12).

Duration between onset of the disease and first consultation	No. of cases	Percentage (%)
Less than one month	Nil	Nil
Between 1-3 months	1	8.3
Between 4-6 months	2	16.7
Between 7-9 months	7	58.3
Between 10-12 months	1	8.3
Between 1-2 Years	1	8.3
More than 2 Years	0	0

Table 5: Incidence of site of onset of growth, type of growth and histology of penile cancer (n=12).

Variables	No. of cases	Percentage (%)
Site of growth		
Prepuce	6	50
Glans	4	33.3
Corona	1	8.3
Shaft of penis	Nil	Nil
Could not be detected due to phimosis	1	8.3
Type of growth		
Fungative or cauliflower type	8	66.6
Ulcerative type	3	25
Leukoplakia	1	8.3
Histology		
Squamous cell carcinoma	12	100
Adenocarcinoma	Nil	Nil

Table 6: Incidence between rural and urban area and racial incidence in cases of carcinoma penis (n=12).

	No. of cases	Percentage (%)
Area		
Rural	9	75
Urban	3	25
Race		
Hindu	12	100
Muslim	nil	0

Table 7: Economic status and type of growth in patients of penile cancer (n=12).

Variables	No. of cases	Percentage (%)
Economic status		
Low socio-economic group	10	83.3
Middle socio-economic	2	16.7
High socio-economic	Nil	0
Phimosis		
Present	9	75
Absent	3	25
Circumcision		
Circumcised at infancy	Nil	Nil
Circumcised after 18 years	1	8.3
Circumcised during disease	1	8.3
Uncircumcised	10	83

75% of patients were from rural area and 25% were from urban area. All patients (100%) were from Hindu population. Not a single case was found in Muslim (Table 6).

83.3% patients were from low socioeconomic group and 75% patients had history of phimosis and 83.3% of patients were uncircumcised (Table 7).

Table 8: Regional lymph nodes status (n=12).

Particulars	No. of cases	Percentage (%)
Lymph nodes not palpable	3	25
Palpable inguinal lymph	9	75
Nodes		
Unliateral palpable (all mobile)	3	25
Bilateral palpable (mobile)	6	50
Fixed to the deeper structure	Nil	Nil

In 75% of patients lymph node was palpable, in 25% cases lymph node was unilaterally palpable and in 50% cases lymph node was bilaterally palpable. Lymph node fixation was not present in any case. In 100% cases, carcinoma of penis was histologically squamous cell carcinoma.

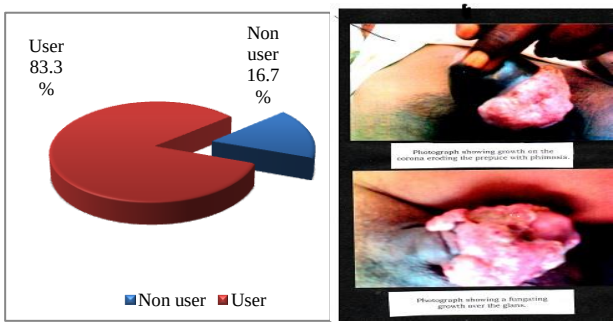

Figure1: Tobacco addiction in patients of penile cancer.

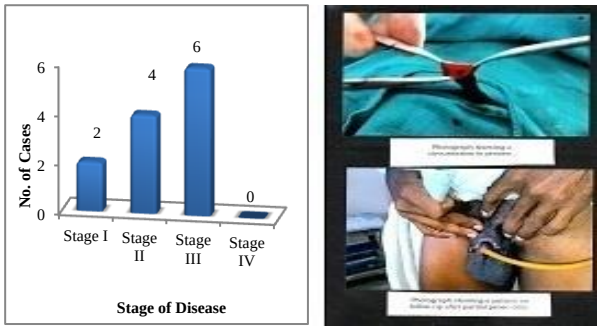

Figure 2: Clinical stage of carcinoma penis at presentation.

Out of 12 patients, 10 (83.3%) patients were addicted to tobacco. Majority (50%) of the patients presented with stage III disease, 33.3% were in stage II and only 16.5% presented with stage I disease.

DISCUSSION

Out of total 222 cases of carcinoma that attended RIMS, Ranchi hospital during the two-year period from August 2012 to July 2014, only 12 cases were of carcinoma penis giving an overall incidence of 5.4% of all types of carcinoma found exclusively in males.

Penile malignant neoplasm constitute a substantial health concern in many African, South American and Asian countries.[1] High incidence rate up to 10 to 20% of all malignancies in developing continents, such as Asia, Africa and South America.[5] Nagpal from Punjab reported the incidence as 6.93%.[8]

Majority of patients belonged to 41-50 years (i.e. the 5th decade). The youngest was 29 years and the oldest was 66 years of age.

Srivastava et al recorded the age incidence between 40-45 years.[9] Thomas quoted the peak age incidence between 45-50 years age groups.[10] Singhal et al from Kanpur, India reported that carcinoma of penis is more common after the age of 40 years.[11]

Majority of patients belonged to low-socio economic group. They were mostly either labourers or poor agriculturist. They include 83.3% of total patients studied under observation.

Again among cases under observation 75 % came from rural area and 25% from urban area.

Paul Milroy, Hardner et al, Narayana et al reported that most of the cases that they saw belonged to poor classes whose sexual and personal hygiene had been very poor.[12,13,7] Raju et al, observed that although penile cancer is relatively common in Indians and Negro population of Jamaica, it is quite infrequent in both the Indians and Negroes living in Trinidad, this is due to the better socioeconomic condition in Trinidad's population.[14]

In the present series of observation of 12 cases, not a single case found in Muslims. Wolbarst states that cancer of penis is 97.5% in Hindus and 2% in Muslims.[15] Kini et al reported 52 cases of carcinoma penis – all in Hindus.[16] Srivastava et al reported 82 cases of carcinoma penis, all in Hindus.[9]

In the present series of work 10 cases (83.3%) were addicted to one or the other form of tobacco products. Maden et al in a population based case control study concluded that the risk of carcinoma penis for current smokers was 2.8 times that of men who never smoked.[17]

Malek et al found in a study that 79.4% of patients were heavy smokers.[18] Harish et al from Chennai, India studied the role of tobacco (smoking, chewing and snuff) in carcinoma of penis, and found it as a significant risk factor for carcinoma penis.[19]

In the present series of work only one case of penile cancer (8.3%) shows positive VDRL test out of 6 cases tested for VDRL.

The assumption is that syphilis may lower the resistance of the patients and make him thereby more susceptible to the factor which cause malignancy, or it may also be possible that syphilis and carcinoma penis may co-exist in the same lesion independent to each other.

In the present series of 12 cases, 75% patients had history of phimosis and 83.3% were uncircumcised. Carcinoma of penis is absent, not in races, but in those communities in which circumcision is practiced as a ritual like in Jews. Hunter Mellado et al, found phimosis in 86% of cases of carcinoma penis.[20] Singhal et al after the study of 90 cases concluded that phimosis was the most important predisposing factor.[11]

In most of the cases, symptoms were multiple. Large number of cases (75%) presented with the complaint of growth in the penis with fungation.

Singhal et al in a study at Kanpur, India concluded that most common presentation was proliferative growth.[11] Chiu et al, found in a study that most of the tumours were proliferative growth.[21]

In the present series of cases, the site of onset of carcinoma was the prepuce in 50%, glans in 33.3% and corona in 8.3% of cases. In 8.3% of cases, the site of onset of disease could not be determined due to phimosis.

According to Bleich the most common site of origin is frenulum and next in order are prepuce, the glans and corona.[22]

According to Srivastava et al, the common site for the start of growth is glans penis (70-78%), prepuce (20.7%), shaft of the penis (4.8%) and the frenulum (3.6%).[9] Narayana et al reports the glans as most common site of origin of the growth, next most common sites being the prepuce and the shaft of the penis.[8]

Hunter et al, found that the primary lesion appeared in prepuce in 57% and in glans about 43%.[20] Singhal et al, from India reported the commonest involvement of glans.[11]

In the present series of work on carcinoma penis of 12 cases, fungating type of lesion was more common (66.6%) than the ulcerative type (25%).

Singhal et al in a study at Kanpur, India concluded that most common presentation was proliferative growth. Chiu et al, also found in a study that most of the tumours were proliferative growth.[21]

Majority of patients (58.3%) consulted a doctor after an average delay of 7-9 months. Soria et al noted the time between appearance of symptoms and consultation was more than 1 year in 13.7% of cases.[23] Fernandez et al observed the same to range between 1 month to 10 years, with a mean of 10.3 months.[24] Cubilla et al, observed the median time from appearance of symptom to consultation to be 24 months.[25]

In the present series of work, inguinal lymph nodes enlargement was found in 9 cases, i.e. (75%) at the time of first examination. In 3 cases (25%) out of 12 cases, enlargement was unilateral and in 6 cases (50%) enlargement was bilateral.

Zausner reported that inguinal lymph nodes were enlarged in 70% cases. Out of which 70% of the involvement was bilateral.[26]

Srivastava et al reported lymph nodes enlargement in 78% of cases. Out of which 72% were inflammatory in nature and 28% were malignant.[9]

According to Bailey and Love, inguinal lymph nodes are enlarged in over 50% of cases but the nodal enlargement often reflects infection.[27] Hunter et al found that 64% had palpable adenopathy.[20]

The staging has been done according TNM Staging which was updated in 2010 by AJCC.

In the present series of 12 cases of carcinoma of penis, 2 cases (16.5%) were of stage I, 4 cases (33%) of stage II and 6 cases (50%) were of stage III.

Thus, majority of patients come in the late stage of the disease with involvement of the inguinal lymph nodes. Patients with cancer of the penis, more than patients with other types of cancer, seem to delay seeking medical attention.[1]

Many patients present late, either because of embarrassment or because of misdiagnosis.[27]

Stage I: The types of treatment given to this group of 2 patients were predominantly surgical with primary aim being the removal of penile lesion with adequate surgical margin. Circumcision was performed in 1 case (8.33%) and partial penectomy was done in 1 case (8.33%).

Stage II: Out of 4 patients of this series, partial penectomy was done in 2 cases (16.7%). Total penectomy with perineal urethrostomy was done in two cases (16.7%).

Lummen et al, concluded that when T1 and T2 tumour were treated with partial penectomy, the 3 year survival rate amounted to 90%.[28]

Hadzi et al, in a study from 1988 to 1998 on 58 patients concluded that the quality of life of patients subjected to partial penectomy, where no relapses occurred, was satisfactory.[29]

Banon et al, after studying 73 cases in 23 years concluded that partial penile resection is the treatment of choice for primary lesion.[30]

Stage III: Majority of patients (6) belonged to stage III (50%). Out of which 4 patients (33%) were treated by total penectomy with bilateral orchidectomy and perineal urethrostomy, and 2 patients refused surgery and were referred to higher centre.

Magoha et al, suggested total penectomy and removal of scrotal contents in T3 carcinoma, and is associated with 90% five-year survival rate.[31] Venkov concluded after a retrospective study that wide surgical excision requiring partial amputation or total amputation is the treatment of choice.[32]

In 100% cases, diagnosis was confirmed to be squamous cell carcinoma. Singhal et al, from India found that all the cases were of squamous cell carcinoma except one case of malignant melanoma.[11] Hadzi et al, in a study of 58 patients (1988-1998) found that 95% of them had squamous cell carcinoma.[29]

CONCLUSION

Penile cancer is associated with poor sexual hygiene. Presence of phimosis appears to be an important predisposing factor for carcinoma of penis among the uncircumcised community. Consuming tobacco products appears to be a significant risk factor. If patients presents in early stages of the disease prognosis will be better.

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