

Carcinoma of penis: its incidence and management

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Abstract

Introduction: Cancer of penis is one of the first ceroplastic lesions described as disease entity and has become a significant world healths problem because of its variable incidence throughout the world. Poverty, illiteracy and poor standards of general and sex hygiene are prevalent features in developing countries like India which contribute to relatively higher incidence than West. It is reported to contribute up to 10% of cancers in men in Mexico, China, Uganda, Shrilanks and India. **Aims and objectives:** To study incidence of carcinoma penis among the various carcinoma diagnosed in male and various treatment modalities used to manage the patients of carcinoma penis. **Materials and method:** All cases of various carcinomas in males were registered in the present study. All the cases of carcinoma of penis were thoroughly examined and detail history was recorded. All patients were subjected to routine hematological and biochemical investigations. A preoperative biopsy was taken for histopathological confirmation. All cases with inguinal adenopathy were treated with broad spectrum antibiotics and significant lymph nodes were subjected to Fine Needle Aspiration Cytology (FNAC) examination. The patients were staged according to Border's classification. All the patients were subjected to various treatment modalities according to the stage of carcinoma and condition of patients. **Results:** The incidence of carcinoma penis in among the all cancers was 9.6%. Common age of occurrence of the diseases was 51-60 years. 89.29% of cases presented with either growth or ulcer on penis. Chronic balanoposthitis and phimosis accounted in 14 out of 28 cases (50%) of cases as predisposing factor. Twenty four (85.71%) patients had the origin of lesion in glans while only four (14.29 %) patients had that of in prepuce. All the patients studied in this series had squamous cell carcinoma of penis. In most of the cases (42.86%) the tumor cells were well differentiated. Majority of cases underwent surgery as a treatment of choice for primary tumor. Eleven (39.29%) patients underwent partial amputation while eight (28.57%) patients were subjected to total amputation. **Conclusion:** Carcinoma of penis is fairly common in males with incidence of 9.6%. Majority of cases were well to moderately differentiated carcinoma and were managed surgically. Partial amputation followed by total amputation and circumcision were the most common surgical procedure performed to managed carcinoma penis.

Key words: carcinoma penis, incidence, Partial amputation, total amputation.

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INTRODUCTION

In India, cancer is one of the ten leading causes of death today and is advancing in rank yet by year.¹ Cancer of penis is one of the first ceroplastic lesions described as disease entity and has become a significant world healths problem because of its variable incidence

throughout the world. Poverty, illiteracy and poor standards of general and sex hygiene are prevalent features in developing countries like India which contribute to relatively higher incidence than West. It is reported to contribute up to 10% of cancers in men in Mexico, China, Uganda, Shrilanks and India.² Delay in presentation of diseases is often found. Surprisingly an organ handled on daily basis is affected, but neglected. It is unacceptable to believe ignorance as a single factor as responsible, but probably factors like shame, guilt play a greater role. Misconception of it as a venereal disease makes patient keep the disease hidden for long. Early detection of the pathology is of paramount importance in terms of early treatment and reduces the surgical and psychological traumas associated with partial or total penectomy. Carcinoma of penis is usually a disease of elderly. Certain pathological conditions like leukoplakia, chronic balanoposthitis, phimosis, erythroplasia of

Queyrat predispose. Circumcision in early childhood is considered to be protective. This is probably understood quite early by Jews, which introduced circumcision in their ritual practice. Clinical course of the disease is considerably predictable; hence early treatment definitely improves survival. Treatment includes chiefly surgery and radiotherapy. Optimized chemotherapy is still in evolution. Circumcision, partial or total amputation is traditional options, while Laser surgery, Cryosurgery, Micrographic surgery is less mutilating surgeries for selected cases.

AIMS AND OBJECTIVES

To study incidence of carcinoma penis among the various carcinoma diagnosed in male and various treatment modalities used to manage the patients of carcinoma penis.

MATERIALS AND METHOD

The present study was conducted in the department of surgery of SRTR Medical College, Ambajogai, Dist. Beed. All the cases of various carcinomas in male diagnosed in last five years were enrolled in the study. Total 292 cases of cancers (excluding haematological) in male were diagnosed from July 93 to June 98. Out of them 28 cases of carcinoma penis were diagnosed. All the cases of carcinoma of penis were thoroughly examined and detail history was recorded. All patients were subjected to routine hematological and biochemical investigations. A preoperative biopsy was taken for histopathological confirmation. All cases with inguinal adenopathy were treated with broad spectrum antibiotics and significant lymph nodes were subjected to Fine Needle Aspiration Cytology (FNAC) examination. The patients were staged according to Border’s classification. Following anaesthetic fitness and consent of the patient, cases were subjected to various surgical procedures like circumcision, partial amputation and total amputation. Patients with early penile carcinoma were subjected to radiotherapy.

RESULTS

Table 1: Incidence of various carcinomas in male patients

Site	No. of patients	Incidence
Larynx	53	18.15%
Oral cavity	41	14.04%
Skin	35	11.99%
Colourectum	30	10.27%
Penis	28	9.59%
Oesophagus	16	5.48%
Stomach	11	3.77%
Others	78	26.71%

(Kidney, Prostate, Bone, Thyroid, etc.)		
Total	292	100%

In the present study total 292 cases of various cancers were diagnosed in S. R. T. R. medical College, in the study duration. Out of them total 208 cases of carcinoma of penis were confirmed. Thus the incidence of carcinoma penis in among the all cancers was 9.6%, which was the fifth most common carcinoma.

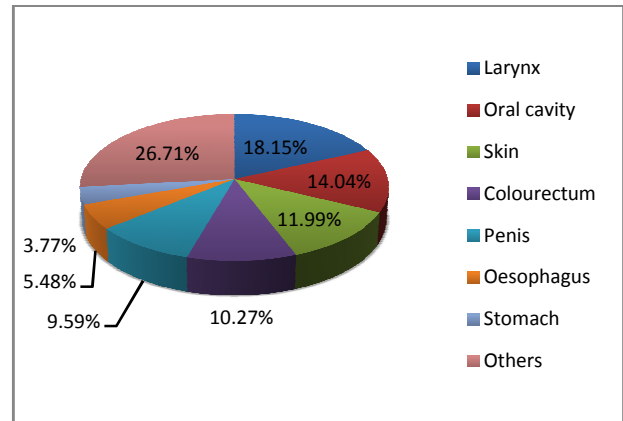


Figure 1: Incidence of various carcinomas in male patients

Table 2: Distribution of patients according to age and occupation of patients

Variable	No. of Cases	Percentage	
Age in years	< 30	0	0.00%
	31 to 40	4	14.29%
	41 to 50	3	10.71%
	51 to 60	9	32.14%
	61 to 70	7	25.00%
	> 70	5	17.86%
Occupation	agricultural workers	18	64.29%
	Laborers	6	21.43%
	craftsman, clerical workers, technicians, etc	4	14.29%

It was seen that the peak age distribution was between 51 to 60 years (32.14%). The youngest patient was of age 38 years and oldest patient was of age 82 years. Seventy five percent of patients had age more than 50 years. Majority of the patients were patients were agricultural workers (64.28%) while 21.42% were laborers. Other 14.28% patients were craftsman, clerical workers, technicians, etc.

Table 3: Distribution of patients according to mode of presentation and predisposing factor

Variable	No. of patients	Percentage	
Mode of presentation (Signs and	Growth/ ulcer on glans	25	89.29%
	Discharge	18	64.29%

Symptoms)*	Phimosis	11	39.29%
	Micturation disturbances	6	21.43%
	Inguinal lymphadenopathy	13	46.43%
	Multiple sexual partners	4	14.29%
	Chronic balanoposthitis	10	35.71%
Predisposing factor	Phimosis	4	14.29%
	Leukoplakia	4	14.29%
	No predisposing factor	6	21.43%
Site of origin	lesion in glans	24	85.71%
	in prepuce	4	14.29%

*Multiple responses were recorded

It was seen that 89.29% of cases presented with either growth or ulcer on penis. Discharge (either blood stained or purulent) form the site was a major (64.29%) accompanying complaint. This is probably due to poor penile hygiene leading to bacterial infection. Urinary complaints are insignificantly found in 21.43 % and in 46.43% of cases presented with inguinal lymphadenopathy. Chronic balanoposthitis and phimosis accounted in 14 out of 28 cases (50%) of cases as predisposing factor. Only 4 (14.29%) patients developing carcinoma of penis had multiple sexual partners. no predisposing factor was observed in 21.43s% of patients. Twenty four (85.71%) patients had the origin of lesion in glans while only four (14.29 %) patients had that of in prepuce.

Table 4: Distribution of patients according to type of the lesion and histopathological features

Variable	No. of patients	Percentage	
Type of the lesion	Proliferative lesion	22	78.57 %
	Ulcerative lesion	6	21.43%
Histopathological features	GRADE I	12	42.86%
	GRADE II	9	32.14%
	GRADE III	6	21.43%
	GRADE IV	1	3.57%

Morphologically 78.57% cases had proliferative lesion while 21.43% patients had ulcerative lesion. All the patients studied in this series had squamous cell carcinoma of penis. In most of the cases (42.86%) the tumor cells were well differentiated. According to Border’s classification majority (75%) of the cases were of grade I and II squamous cell carcinoma of penis.

Table 5: Distribution of patients according to various treatment modalities used

Mode of treatment*	No. of patients	Percentage
Circumcision	3	10.71%
Partial amputation	11	39.29%

Total amputation	8	28.57%
Radiotherapy (Primary tumor)	2	7.14%
Radiotherapy (Inguinal Metastasis)	4	14.28%
Chemotherapy	4	14.28%

*Multiple responses were recorded

Majority of cases underwent surgery as a treatment of choice for primary tumor. Three (10.71%) patients with lesions confined to distal foreskin were treated with circumcision and were advised regular follow up. Eleven (39.29%) patients underwent partial amputation while eight (28.57%) patients were subjected to total amputation. Radiotherapy alone was given in only two (7.14%) cases where the lesion was confined to glans and was less than 4 cm in size. It was seen that 13 patients were having palpable inguinal nodes out of these 8 (61.53%) were having metastasis. Out of these 8 patients, 4 (14.28% of all cases) patients were subjected to radiotherapy after control of primary tumor. Four patients (14.28 % of all cases) with advanced disease (Stage IV) were treated with chemotherapy.

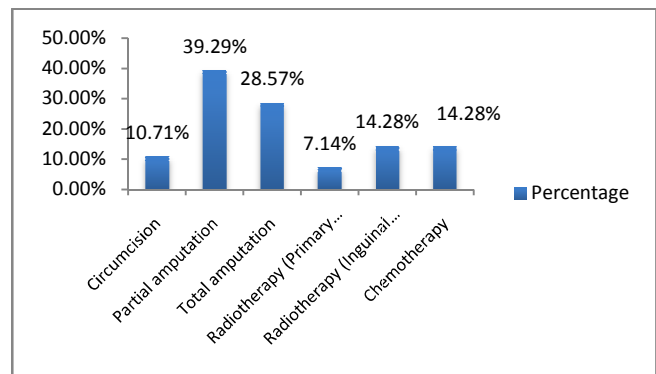


Figure 2: Various treatment modalities used

DISCUSSION

The present study was conducted to study the incidence of carcinoma penis. It was observe that among the various carcinomas diagnosed in male, Carcinoma of penis was fifth most common carcinoma. The incidence of carcinoma penile in the present study was 9.6%. Incidence observed in present study is comparable with that of Rai *et al*³ (10%). The reported incidence of carcinoma of penis in different parts of India ranges from 2-10 %. It was seen that the peak age distribution was between 51 to 60 years (32.14%). The youngest patient was of age 38 years and oldest patient was of age 82 years. Maximum number of cases (75%) had age more than 50 years. Similar findings were also reported by Merrin *et al*⁴ and Basset⁵ in their studies. In present study most of the patients (64.28%) were agricultural workers while 21.42% of patients were general laborers. Thomas *et al*⁶ observed 51% of patients as agricultural workers while 23.68% of patients as laborers in their study which

was similar to the observations made in present study. It was seen that 89.29% of cases presented with either growth or ulcer on penis. Discharge (either blood stained or purulent) from the site was a major (64.29%) accompanying complaint. This is probably due to poor penile hygiene leading to bacterial infection. Urinary complaints are insignificantly found in 21.43 % and in 46.43% of cases presented with inguinal lymphadenopathy. The commonest clinical sign (89.29%) of carcinoma of penis was either swelling or ulcer over glans. The other symptoms observed were penile pain, discharge, micturition disturbances and swellings in groin. Pain was usually minimal in proportion to the extent of the local destruction and therefore does not prompt patient to seek medical attention. Occasionally, inguinal swellings (lymphadenopathy) with ulceration, necrosis, and hemorrhage were the initial complaints as the primary lesion was concealed in phimotic perpuccial sac. Narayana *et al*⁷, Khezri *et al*⁸ and Thoms *et al*⁶ also observed penile ulceration or growth as the common presenting clinical feature, which was followed by discharge and inguinal lymphadenopathy. In present study it was observed that 50% of patients had history of either phimosis or chronic balanoposthitis while only 14.29% of patients had multiple sexual contacts. Only 14.29% of patients in present series had leukoplakia of glans prior to the lesion. Khezri *et al*⁸ found that 11.11% of patients had multiple sexual contacts while leukoplakia predisposed in 17.46% of patients in his series. The observation made by Khezri *et al*⁸ was similar to the present study. Twenty four (85.71%) patients had the origin of lesion in glans while only four (14.29 %) patients had that of in prepuce. Similar findings were also reported by Thomas *et al*⁶. All patients in present series were diagnosed as having squamous cell carcinoma of penis. Maximum number of cases (42.86%) had well differentiated tumor (according to Broder's classification). Only one patient had presented with grade IV type. Frew *et al*⁹, Khezri *et al*⁸, Merrin *et al*⁴ and Narayana *et al*⁷ also reported well differentiated tumor as common type in their study. Majority of cases underwent surgery as a treatment of choice for primary tumor. Three (10.71%) patients with lesions confined to distal foreskin were treated with circumcision and were advised regular follow up. Eleven (39.29%) patients underwent partial amputation while eight (28.57%) patients were subjected to total amputation. Radiotherapy alone was given in only two (7.14%) cases where the lesion was confined to glans and was less than 4 cm in size. It was seen that 13 patients were having palpable inguinal nodes out of these 8 (61.53%) were having metastasis. Out of these 8 patients, 4 (14.28% of all cases) patients were subjected to radiotherapy after control of primary tumor. Four

patients (14.28 % of all cases) with advanced disease (Stage IV) were treated with chemotherapy. The various treatment options in the management of carcinoma of penis are surgery, radiotherapy, chemotherapy or various combinations of these. Though surgery remains controversial in different stages, it is the most accepted treatment form and largely employed. The main disadvantage of it is psychological trauma associated with loss of organ. Stage I carcinoma of penis implies carcinoma limited to prepuce or glans. The various surgical modalities available are circumcision, wide local excision, Mohs micrographic surgery and partial penectomy. In present series there were 6 patients presented with stage I disease. Out of these, two patients (having lesion over the glans) with relatively younger age (less than 40 years) were subjected to radiotherapy while three patients having lesions confined to distal foreskin were treated with circumcision, one patient underwent partial amputation. Patients with circumcision as a treatment for primary tumor were followed carefully and were advised self examination made by Narayana *et al*⁷ quoting recurrence rate as high as 80%. In the absence of palpable lymphadenopathy, these neoplasms are very unlikely to involve inguinal lymph nodes (less than 10%) hence inguinal block dissection is not indicated. Partial or total amputation of penis with or without inguinal lymphadenectomy remains gold standard in treatment of carcinoma of penis for stage II and III. Partial amputation of penis was performed in 11 (39.29%) cases while 8 (28.57%) cases underwent total amputation of penis. Partial amputation was our procedure of choice when a stump of atleast 2.5 cm could be retained. Our patients undergoing partial amputation of penis maintained good stream of micturition. Jensen *et al*¹⁰ reported that, in the patients with 4-6 cm of corpus cavernosum remaining after partial penectomy, 45% could have sexual intercourse, as could 25% of those with 2-4 cm of penis remaining. If proximal shaft is involved by malignancy to the extent that resection will leave a margin close enough to elude both voiding and sexual function, a total amputation is indicated. The present series included 4 (14.29%) patients attending at Stage III i.e. growth involving the shaft with mobile, metastatic inguinal lymphadenopathy. These four patients were subjected to radiotherapy to groin after surgical treatment of primary tumor. Radiation therapy is often advocated for treatment of inguinal node metastasis. Staubitz *et al*¹¹ reported a 40% five year survival rate after inguinal radiation in the patient with proven metastasis. Further Murrell and Williams¹² treated the primary and clinically involved inguinal nodes with external beam radiation therapy and reported a 41% five year survival rate. Hardner *et al*¹³ advocated inguinal dissection in all

patients with penile cancer considering the limitations associated with exact assessment of staging in carcinoma of penis. But Beggs and Spratt *et al*¹⁴ stated that early prophylactic groin dissection would lead to high percentage of unnecessary groin dissection which is not without morbidity. We had four patients attending at Stage IV disease. Out of these four patients, one patient had distant metastasis while two patients had inoperable inguinal metastasis. One patient had scrotal involvement. These patients were referred to higher health care center. Patients with Stage IV disease may be treated with single agent or combination chemotherapy. Bleomycin, schedule of which consists of 30 units infused intravenously in six hours, three times a week for five weeks is commonly used. Its common complication is lung fibrosis. Other drugs which can be used are methotrexate, cisplatin. Cisplatin is administered in the dose of 50 mg/m² every week for first 6 weeks and every three weeks thereafter. Kyalwazi *et al*¹⁵ reported that Bleomycin administered resulted into complete regression of primary lesion in 46% of cases.

CONCLUSION

Carcinoma of penis is fairly common in males with incidence of 9.6%. Majority of cases were well to moderately differentiated carcinoma and were managed surgically. Partial amputation followed by total amputation and circumcision were the most common

surgical procedure preformed to managed carcinoma penis.

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