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Original Research Article

Are all palpable lymph nodes positive in penile cancer? retrospective study

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ABSTRACT

Background: Though rare in western countries the incidence of penile cancer in India is much higher and can represent 10-20% of malignant diseases in men ranging from 0.7-3 per 100,000. Important risk factors include phimosis, chronic inflammatory conditions, treatment with sporalene and ultraviolet A photo chemotherapy, smoking, sexual history and HPV DNA. Smegma as a carcinogen has been clearly excluded. In our country where incidence of inguinal nodes are high due to bare foot walking and infection, there must be balance between loosing patients from lack of follow-up and presenting later with inoperable inguinal nodes and the morbidity of a groin dissection.
Methods: This is 5 year retrospective study of carcinoma penis from a single institute (2007-2012). 50 cases have been included in this study. 20 of the 50 cases had clinically significant nodes of which only 14 cases were fine needle aspiration cytology positive nodes and they had been addressed with an inguinal block dissection in the same sitting with the primary. In first 6 months 8 cases had positive nodes on follow-up and between 6 months to 2 years 10 patients developed node recurrence and underwent block dissection.
Results: Median follow-up was 21.8 months. Among these 6 patients lost to follow up. All the follow up patients who underwent surgery on later date had one or more of these factors: High primary tumour grade, > pT2 status, lymphovascular invasion, pelvic lymph node involvement, extra nodal extension. Pelvic lymph node dissection was done in 4 patients. Adjuvant radiotherapy was given in 12 patients (37%) and chemotherapy in 4 patients (12%). Overall 5-year cancer specific survival was 61%. Men with extra nodal extension and pelvic lymph node involvement had significantly decreased 5-year cancer specific survival compared with men without it (42% vs. 80%). Complications of inguinal block dissections were flap necrosis, wound infection, seroma formation, lymphedema and deep vein thrombosis. Recognised adverse prognostic factors for survival in carcinoma penis were pathological T stage (>T2), differentiation grade (high grade > low grade), positive margin status, extra nodal extension, 4 or more unilateral metastatic inguinal nodes, bilateral versus unilateral metastatic involvement and pelvic lymph node involvement.
Conclusions: In Indian population, cases with carcinoma penis are generally of higher T status on presentation. Lymph nodes were palpable in majority of cases but most were not pathologically positive. Prophylactic block dissections are not practical as it carries its own morbidity and complications. High incidence of pathologically positive nodes were seen in patients with high grade, T status and lymphovascular invasion.

Keywords: Inguinal block dissection, Penile carcinoma, Regional nodal metastasis

INTRODUCTION

The incidence of penile cancer in India is much higher and can represent 10-20% of malignant diseases in men ranging from 0.7-3 per 100,000. Important risk factors include phimosis, chronic inflammatory conditions, treatment with sporalene and ultraviolet A photo chemotherapy, smoking, sexual history and HPV DNA. Smegma as a carcinogen has been clearly excluded. Penile cancer is a relatively rare. It shares similar pathology and natural history with squamous cell carcinoma of the oropharynx, female genitalia and anus. An improved understanding of the natural history of disease, earlier diagnosis, better technology and research group collaboration has improved the cure rate for penile cancer from 50% in 1990s to 80% in recent years.

In the non-Western world, the incidence of penile cancer is much higher and can represent 10-20% of malignant diseases in men ranging from an age-adjusted incidence of 0.7-3 per 100,000 people in India to 8.3 per 100,000 men in Brazil, and even higher in Uganda, where it is the most commonly diagnosed cancer.[1] In Western countries, primary malignant penile cancer is uncommon, with an incidence of less than 1 per 100,000 males in Europe and in United States where the better hygiene and protection from sexually transmitted disease may be the reason.[2]

At our institute incidence of cancer penis accounts to 0.3-1.2 % of all cancers. Risk factors identified are phimosis, chronic inflammatory conditions, PUVA therapy, smoking, sexual history, HPV. Smegma as a carcinogen has been clearly excluded.

In our country incidence of palpable inguinal nodes is high due to:

- Bare foot walking
- Secondary infection in carcinoma penis.[3]

There must be balance between losing patients from lack of follow-up and presenting later with inoperable inguinal nodes and the morbidity of a groin dissection.[4]

METHODS

5 year retrospective study of carcinoma penis was conducted in a single institute from 2007 to 2012. 50 cases of carcinoma penis had been included of which 20 cases had clinically significant nodes. 14 cases had fine needle aspiration cytology (FNAC) positive inguinal nodes and they had been addressed with inguinal block dissection (IBD) in the same sitting with the primary. In first 6 months, 8 cases had positive inguinal nodes on follow-up and between 6 months to 2 years 10 patients developed node recurrence and underwent block dissection.

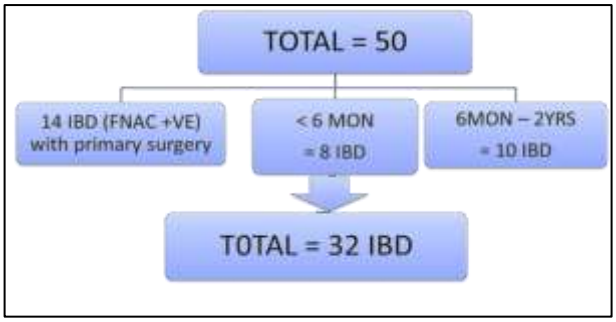

Figure 1: Flow chart of total number of cases and inguinal block dissection (IBD) done.

Age at presentation of carcinoma penis varies from 26 to 75 years with mean are at presentation is maximum in 40 to 49 years which is contrary to 60-70 years of mean age of the patient in Western population.

Table 1: Age of the patient presented with carcinoma of penis is as follows.

Age in years	Cases
20-29	3
30-39	6
40-49	16
50-59	13
60-69	7
70-79	5
Total cases	**50**

Grade of the primary tumour had got great influence over the initial and subsequent nodal presentation. Higher the tumour grade more likely will be the nodal metastasis. In our study nearly 68% of cases presented in grade II and in grade III.

Table 2: Grade of the primary tumour.

Histopathology features of primary tumour	
Verrucous carcinoma	5
Squamous cell carcinoma- grade I	11
Squamous cell carcinoma- grade II	16
Squamous cell carcinoma- grade III (poorly differentiated)	18

42 patient (84%) presented with higher T stage (pT1b and > pT2) and 8 (16%) patient presented with early T stage (pT1a).

Table 3: T stage of the primary tumour.

T-Stage	
pT1a	8
pT1b	13
≥ pT2	29

Relation of nodal status and even the number of nodes to the size of the primary tumour was also assessed.

Table 4: Nodal status versus primary tumour characteristics.

Compare nodal status versus primary tumour characteristics	pT1a	pT1b	≥ pT2
≤ 4 lymph nodes with no extra capsular spread	1	2	3
< 4 lymph nodes with extra capsular spread	0	3	4
> 4 lymph nodes with no extra capsular spread	0	3	5
> 4 lymph nodes with extra capsular spread	0	4	7

Nodal recurrence on follow up (18cases) was also assessed in relation to the stage of the primary tumour (T).

Table 5: Primary histology versus lymph node recurrence.

Primary histology versus lymph node recurrence	
pT1a	0
pT1b	5
≥ pT2	13

RESULTS

Median follow up was 21.8 months. Among these 6 patients lost to follow up. Primary tumour stage (T) and grade of the tumour had got great influence over nodal recurrence. 74% of tumour with pT1b and > pT2 tumour had nodal metastasis whereas only 12% of pT1a had got nodal metastasis. All the follow up patients who underwent surgery on later date had one or more of these factors: High primary tumour grade, > pT2 status, lymphovascular invasion (pT1b), pelvic lymph node involvement (N3), extra nodal extension (pN3). Pelvic lymph node dissection was done in 28 patients (87%).

Certain criteria were selected for adjuvant therapy with chemo radiation. More than 2 nodes positive, extra capsular extension, nodal size more than 4 cms and pelvic node involvement got adjuvant therapy. Adjuvant radiotherapy was given in 12 patients (37%) and chemotherapy in 4 patients (12%). Overall 5-year cancer specific survival was 61%. Men with extra nodal extension and pelvic lymph node involvement had significantly decreased 5-year cancer specific survival compared with men without it (42% versus 80%).

Inguinal block dissection is not free with complications. All most all patients of inguinal block dissection in our study have got one or the other complications which varies from minor wound infection to major flap necrosis and deep vein thrombosis (DVT). Complications of inguinal block dissections in our study were flap necrosis, wound infection, seroma formation, lymphedema and deep vein thrombosis.

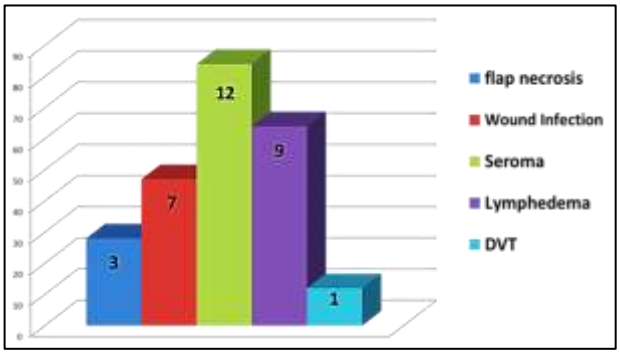

Figure 2: Complications of inguinal block dissections.

Adverse prognostic factors for survival in carcinoma penis were pathological T stage (>T2), differentiation grade (high grade > low grade), positive margin status, extra nodal extension, 4 or more unilateral metastatic inguinal nodes, bilateral versus unilateral metastatic involvement and pelvic lymph node involvement.

DISCUSSION

The prognosis in penile cancer is based on accurate staging, which involves the local and loco regional lymph node status5. The battle against penile cancer is won or lost at the level of the inguinal nodes. The management of regional lymph nodes still remains controversial. Our data suggests that clinical palpability of inguinal node appears to be the norm in our patient population and this appears to be related to delayed diagnosis; superadded secondary infection and walking bare foot.[3]

30 to 60% of patients with penile cancer have palpable groin lymph nodes on presentation.[2] 50% of these patients have enlargement of nodes due to metastasis and the other half due to inflammatory reaction.[6] Hence the mere presence of clinical adenopathy is not a reliable parameter for guiding treatment. The main drawback of inguinal block dissection is its morbidity, which could be permanent.[7] Clinical staging obtained with physical examination and imaging modalities cannot reliably confirm the presence or absence of lymph node metastasis.[8]

It has been reported that 50% of the palpable inguinal nodes harbour metastasis in cancer penis.[6] Slightly higher values (63 %) have been noted in our study. Prophylactic block dissections are not practical as it carries its own morbidity and complications.[9] Hence our approach to address inguinal nodes only in pathologically positive cases can be justified, which requires stringent follow up. This avoids significant morbidity to patients.[10]

CONCLUSION

In Indian population, cases with carcinoma penis are generally of higher T status on presentation. Lymph nodes were palpable in majority of cases but most were not pathologically positive. Prophylactic block dissections are not practical as it carries its own morbidity and complications. Hence even though it requires stringent follow up the approach to address the inguinal nodes only in pathologically positive cases can be justified. High incidence of pathologically positive nodes were seen in patients with high grade, T status and lymphovascular invasion.

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