Penile carcinoma – case series from a tertiary referral centre

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Introduction

Penile cancer is an uncommon disease affecting only about 1 in 100,000 men annually (1). It represents 0.5% of malignant tumours of men. The incidence of penile cancer shows significant geographical variation across the world. It is rare in the western world and show comparatively higher incidence in Asian countries. According to the National Cancer Control Programme data, there are 76 cases of carcinoma of the penis recorded in 2010 and majority of them were in the age group of 70-74 years (2). Squamous cell carcinoma (SCC) is the most common histological type (>90%) (3). The factors such as histological grade, anatomical level of invasion and presence of perineural invasion were found to be strongly related to nodal involvement and cancer-specific survival. The presence and extent of inguinal lymph node metastases are the most important prognostic factors for the survival in patients with penile SCC. Unlike most other cancers there is a lag phase between the lymph node involvement and the metastatic disease. If untreated, survival is about two years (4). The primary treatment for penile cancer is multimodal. The incidence of penile cancer increases with the age, with a peak during the sixth decade of life. However, the disease does occur in younger men. One of the most important risk factor for developing penile cancer is the human papilloma virus infection, although in Sri Lanka the causative factors have not been described. Here, we discuss nine cases of penile cancer that presented to our centre over a period of two years, which were managed at our institution.

Methods

This prospective study included newly diagnosed, 9 patients with carcinoma of the penis managed at our unit between August 2014 and August 2016. These patients were subjected to clinical evaluation. Biopsy from the primary site was performed to confirm malignancy. Patients with palpable inguinal nodes had an initial FNAC. CT Scans and USS were performed to assess the extent of the primary lesion and to detect metastases. B/L groin lymphadenectomy was performed

in all patients with positive groin lymphnodes and also in patients with high risk primary lesions without lymphadenopathy. Immediate adjuvant chemotherapy was given to all the patients after lymphadenectomy.

Results

Patient characteristics and the management is summarized in Table 1.

The mean age at diagnosis was 58 years (35-72 years). The mode of presentation in all patients was the presence of a macroscopic lesion. Three patients had phimosis at the time of diagnosis and all the patients were uncircumcised. All patients had poor socioeconomic background and had low educational level. The pathology of the tumour was common SCC in eight of the patients and verrucous SCC in the other patient. Of the nine patients with SCCs, seven were well differentiated and two were moderately differentiated. Two patients had proximal lesions and seven had distal lesions.

Three of the nine patients with SCCs underwent partial penectomy for the primary tumour, while five patients underwent total penectomy. Of the patients with total penectomy, urinary diversion with suprapubic catheterization was done in four patients and one was managed with perineal urethrostomy. Two patients required soft tissue cover with flaps due to extensive primary with local involvement of the perineal and inguinal skin. One of the patients was reconstructed with an extended anterolateral thigh flap to cover the groin and the perineum, while the other patient was reconstructed with a vertical rectus abdominis myocutaneous flap. Post-surgical penectomy specimen revealed complete resection with negative margins in all patients. One patient had malignant involvement of the deep inguinal nodes including the node of Cloquet.

Our youngest patient who was 35 yrs had T4 disease, one patient had T3 disease, and three patients had T2 disease while the other three had T1 disease.

Table 1

Age	Initial Histology	Inguinal LN Status	Surgical Management	T Stage	Chemo	Follow-up / Chemo	Survival
35	Moderately differentiated, Invasive	Positive	Radical penectomy/ B/L Inguinal block dissection/ Flap reconstruction	pT4 N3 Mx	Adjuvant	Metastatic disease	Dead
60	Moderately differentiated, Invasive	Positive	Refused surgery		Palliative	Metastatic disease	Dead
63	Well differentiated, invasive	Negative	Partial penectomy	pT1 Nx Mx			Survive
63	Well differentiated, Invasive	Negative	Partial penectomy	pT1 Nx Mx	B/L inguinal block dissection/ Pelvic lymphadenectomy/ Chemo/Mets		Dead
52	Well differentiated, Invasive	Negative	Radical penectomy/ B/L Inguinal block dissection/ Flap reconstruction	pT2 N2 Mx	Adjuvant		Survive
66	Well Differentiated SCC	Negative	Radical penectomy (Verrucous SCC)	pT1 Nx Mx			Survive
55	Well differentiated, Invasive	Positive	Radical penectomy/ B/L Inguinal block dissection	pT3 N3 Mx	Adjuvant		Survive
72	Well differentiated, Invasive	Negative	Partial penectomy/ B/L Inguinal block dissection	pT2 N2 Mx	Adjuvant		Survive
60	Well differentiated, Invasive	Positive	Radical penectomy/ B/L Inguinal block dissection	pT2 N3 Mx	Adjuvant		Survive

Four of the nine SCC cases had palpable inguinal lymphadenopathy at the time of diagnosis and three of them underwent B/L inguinal block dissection at the time of the primary surgery. Another two patients

underwent B/L inguinal lymphadenectomy, after the confirmation of T2 primary lesion by histology.

None of the patients with SCC had distant metastasis

at the point of the diagnosis. The youngest patient, who was 35 yrs old developed liver metastasis and died in nine months after radical penectomy with B/L inguinal block dissection and adjuvant chemotherapy. The second patient who had inguinal lymphadenopathy, refused surgery, underwent palliative chemotherapy and died after seven months. The third death was of the patient, who was managed with partial penectomy initially and later presented with inguinal lymphadenopathy. For which he underwent B/L block dissections, pelvic lymphadenectomy and chemotherapy. He developed metastatic disease later and died after eleven months.

Verrucous SCC

Infiltrating carcinoma with self-amputation

Radical resection

SCC involving base of the penis

Flap reconstruction after radical penectomy

Discussion

Penile cancer, which occurs predominantly in elderly men, becomes more common with advancing age (1). In our study the mean age was 58 yrs, which is similar to available data. Our youngest patient was 35 yr old and had proximal disease which was rapidly progressive and resulted in death in spite of radical treatment.

More than 90% of penile cancers are SCCs and similarly in our study all of our patients had SCC (3).

Risk factors for penile cancer include human papilloma virus (HPV) infection, smoking, phimosis and poor hygiene, while neonatal circumcision has been described as protective. All of the patients in our series were uncircumcised. Out of nine, five patients had Balanitis Xerotica Obliterans (56%), which is a higher incidence compared to other case series. All of them were from poor socioeconomic and educational background, which may be the one of the reasons for the late presentation.

Except for three patients with T1 disease other six patients including the patient who refused surgery, had higher local involvement with large macroscopic lesions. In spite of the external genitalia being a visible area, the presentation is late as described by other case series (4).

In our study, assessing the local involvement was based on the penile examination and the ultrasound scanning (5). Seven out of nine patients had distal lesions, while the other two had proximal lesions. Because of advanced distal disease involving the whole penile length, majority of patients required supra-vesical diversion. Two patients were successfully reconstructed following primary resection. As pedicle flaps are versatile in reconstructing soft tissue defects in the region, good oncological clearance should be achieved disregarding the dimensions of the potential soft tissue defect.

Thirty to sixty percent of patients with penile cancer have palpable groin lymph nodes on initial presentation. Fifty per cent of those have metastatic lymph nodes, other half due to inflammatory reaction (6). Penile carcinoma can metastasize to the lung, bone and liver. However, distant metastases occur late in the course of the disease, usually in patients with significant inguinal and pelvic lymphadenopathy. In our series, four out of nine patients presented with inguinal lymphadenopathy (44%). Three patients underwent B/L block dissections at the initial surgery, except the one who refused surgery. Another two underwent the procedure after confirmation by histology and all five patients had adjuvant chemotherapy. The 63 yr old

patient who later presented with inguinal lymphadenopathy after partial penectomy, underwent B/L inguinal block dissections and pelvic lymphadenectomy. Altogether six out of nine patients (67%) had lymphadenectomies. All lymphadenectomies were accompanied by a Sartorius muscle transposition – the Sartorius muscle flap is raised by dividing the proximal attachment and reflected medially to cover the exposed femoral vessels, protecting them in the event of a possible skin flap necrosis or wound dehiscence. Two patients developed seromas after block dissection and had to undergo repeated aspirations. One of them has a lymphocutaneous fistula and is being managed conservatively. Radiation to inguinal nodes is not generally recommended, although some centers use it to manage regional lymphadenopathy (6,7).

Verrucous carcinoma represents a locally aggressive exophytic growth, which is low grade; slow growing, well-differentiated SCC with minimal metastatic potential. It has excellent prognosis. Penile verrucous carcinoma accounts for 3-8% of all penile cancers. There are very few cases of verrucous carcinoma of penis in HIV positive patients reported in the literature and our patient was negative for HIV (8).

Conclusion

Sri Lanka with good primary health care facility, penile carcinoma is still a late presentation. It leads to more radical procedures. Which have substantial social and psychological impact on the patient as a whole. Our series had higher number of supravescal urinary diversions due to primary lesion being more proximal and the proximal extension of distal lesions.

In spite of curative initial therapy two patients died within one year indicating the aggressive nature of the disease once the disease reaches the regional lymphnodes. We also noted a higher incidence of Balanitis Xerotica Obliterans among our patients.

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