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Verrucous Carcinoma of the Penis - Our Experience

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Abstract

Background: Penile verrucous carcinoma is an extremely rare disease. The etiology, diagnosis and treatment of this carcinoma remain poorly understood. We report our series of pure penile verrucous carcinoma and discuss the clinical, pathological and outcome following surgical treatment.

Materials and Methods: Hospital data was retrospectively retrieved in relation to patients admitted and treated for verrucous carcinoma of the penis at our center. Age at presentation, presenting clinical symptoms, biopsy techniques, histopathological reports, surgical procedure and outcome were noted and analyzed.

Results: During the period, a total of 27 males with a mean age of 57.11 ± 5.55 years were treated for verrucous carcinoma of the penis. All the 27 patients presented with exophytic lesions appearing like cauliflower, verrucous and papillary. An appropriate biopsy was performed in all and the biopsies confirmed the diagnosis of verrucous carcinoma. Twenty two (81.4%) patients partial penectomy and Five (18.51%) others underwent wide excision. All these patients were followed up and none of the patients exhibited recurrence.

Conclusion: Penile verrucous carcinoma is rare with locally invasive characteristics and complete surgical excision is the management of choice. Close follow-up is of great importance due to a substantial risk of local recurrence of the disease.

Keywords: Verrucous carcinoma; Verruciform lesion; Lymph node enlargement; Penis; Wide excision

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Abbreviation

SCC: Squamous Cell Carcinomas

Introduction

Verrucous carcinomas of the penis are well-differentiated low grade tumors accounting for 5% to 16% of all penile Squamous Cell Carcinomas (SCC) [1]. They usually extend up to the underlying stroma with a broad based pushing border. Metastasis to the regional lymph nodes is rare and distant metastases have never been reported [1]. It was Ackerman in 1948 who first coined the term of verrucous carcinoma and designated it as a variant of squamous cell carcinoma with distinct features including well-differentiated expanding growth and verrucous appearance [2]. It is proposed that this tumor represents an intermediate state between condyloma acuminatum and squamous cell carcinoma. A very small subset of long standing condyloma acuminatum eventually evolve into slowly invading tumors and if left untreated, into large papillomatous proliferations that penetrate deeply into the underlying tissue [2]. These tumors characteristically appear benign histologically, and resemble similar to condyloma acuminatum. It may be difficult to distinguish between these two conditions, particularly at an early stage of the disease. In the genital region, Buschke-Lowenstein tumors are generally considered to be verrucous carcinomas [3]. We report our series of pure penile verrucous carcinoma and discuss the clinical, pathological and outcome following surgical treatment.

Materials and Methods

This study was undertaken with the permission obtained from the Institutional/University ethical committee. Hospital data was retrospectively retrieved in relation to patients admitted and

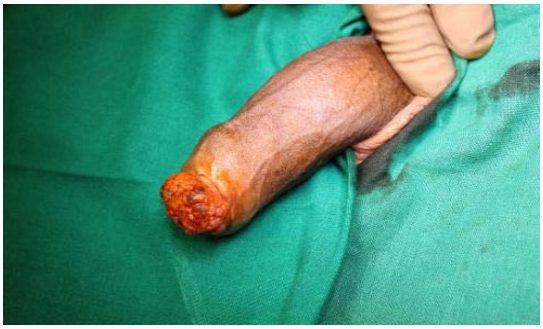

Figure 1: Exophytic verrucous lesion arising from the glans and protruding out of the prepuce.

treated for verrucous carcinoma of the penis at our center. Age at presentation, presenting clinical symptoms, biopsy techniques, histopathological reports, surgical procedure and outcome were noted and analyzed.

Results

During the period January 1996 to December 2015, a total of 27 males with a mean age of 57.11 ± 5.55 years (range 43 to 69) were treated for verrucous carcinoma of the penis at out center. All the 27 patients presented with exophytic lesions of which 16 (59.25%) appeared cauliflower like, 6 (22.2%) verrucous (Figure 1) and 5 (18.51%) papillary. The mean size of the lesion was 3.52 ± 0.34 cm (range 3 to 4.6). At presentation 18 (66.6%) had lesions on the glans with involvement of coronal sulcus, 5 (18.51%) had lesions on glans alone and 4 (14.81%) had lesions on the glans extending onto the shaft of the penis. Clinical examination of the groins showed bilateral multiple enlarged lymph nodes in 6 (22.2%) patients and unilateral palpable lymph nodes in 3 (11.1%) patients. These lymph nodes were small (<1.5 cm), firm and freely mobile. A few of these lymph nodes were tender (Table 1).

An appropriate biopsy was performed in all, with adequate deep tissue from the junction of normal tissue with that of the lesion. The biopsies confirmed the diagnosis of verrucous carcinoma (Figure 2a, 2b). Twenty two (81.4%) patients underwent a classical partial penectomy with a 2 cm surgical margin. Five (18.51%) others underwent wide excision with a surgical margin of 0.5 cm to 1 cm. Histopathological examination of the excised specimens revealed no evidence of the disease. Fine needle aspiration of the lymph nodes was done in the 9 patients with palpable lymph nodes and all of them showed no abnormal/suspicious cells.

All these patients were followed up for recurrence of the disease. Seventeen of these patients finished a minimum follow-up of 60 months and none of them had evidence of disease recurrence locally or in the regional lymph node sites. The remaining ten patients with a follow-up period of less than 60 months (mean 32 months, range 12 to 54) also exhibited no recurrence.

Table 1: Socio-demographic status.

Sl. No.	Socio economic status	Cases (%)
1	Farmers	15 (55.55)
2	Labours	9 (33.33)
3	Blue collar	2 (7.4)
4	White collar	1 (3.7)

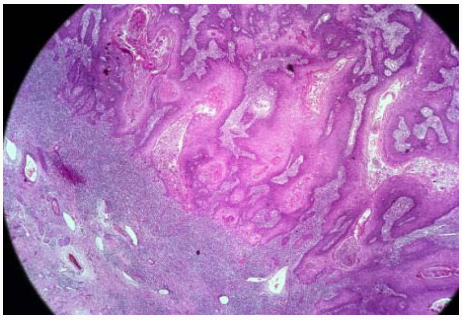

Figure 2a: Verrucous carcinoma (H&E, X 40). Well-differentiated, broad based, papillary neoplasm with acanthosis and hyperkeratosis.

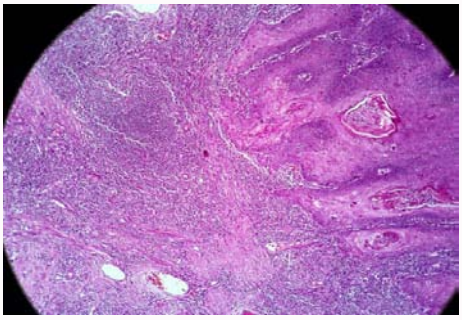

Figure 2b: Verrucous carcinoma (H&E, ×100). Verrucous carcinoma showing hyperkeratosis, parakeratosis, acanthosis with bulbous downward projections into the dermis and well-differentiated tumor cells.

Discussion

Penile verrucous carcinoma is a variant of the well-differentiated SCC and is characterized by slow growth and locally aggressive nature. It rarely metastasizes to regional lymph nodes or distant sites [4,5]. It is an extremely rare disease and has not been well characterized [6]. The etiology of penile verrucous carcinoma remains poorly understood and complicates matters related to the diagnosis and further treatment. Penile verrucous carcinoma is a rare disease and commonly seen on the glans penis, though it can occur on any other site on the penis. Phimosis and redundant prepuce are the two important associated factors seen in penile verrucous cancer [7,8].

It is difficult to identify penile verrucous cancer purely based on its external appearance as its features are very similar to those of condyloma acuminatum. Penile verrucous carcinoma often presents as cauliflower or wart-like lesions, and do not cause pain. However these tumors grow gradually without any restraint and can invade the glans and at times even the shaft. Large penile lesions are usually associated with an unpleasant odor and pain can occur either due to necrosis and/or infection. The penile verrucous carcinoma tumor cells are well-differentiated and are often accompanied by squamous epithelial hyperplasia and keratinization. This makes it possible for misdiagnosis, if an appropriate biopsy were not to be performed. Therefore, deeper biopsies are recommended, according to the tumor size, and the basement membrane of the papillomatous tumor should be particularly considered during the sampling. Occasionally one may need to open the prepuce so as to obtain suitable tissues especially if the lesion is accompanied by phimosis. Most of the literature available on verrucous carcinoma relates to case reports and small series. It is generally agreed that the mainstay in the treatment for penile verrucous carcinoma remains surgery. Utmost preservation

of the penis both in appearance and function is an accepted surgical principle, provided the tumor is well-differentiated and exhibits good biological behavior. A wide variety of local and partial resections of the penis are the most common surgical approaches, and total penectomy is seldom necessary.

Chuanyu et al. [9] reported on their series of 11 patients with penile verrucous carcinoma, aged between 49 to 85 years and tumors measuring between 2 cm to 10 cm [9]. Eight of the patients underwent partial penectomy, whereas three others were treated with local excision. The diagnosis of penile verrucous carcinoma was confirmed on histopathologic examination of the specimens with the negative surgical margins in all the cases. With a follow-up period ranging between 12 to 60 months, all the patients were disease-free, with no recurrence and metastasis. Similarly Li et al. [10] reported on the clinical and pathological data of 10 patients with penile verrucous carcinoma [10]. All the tumors were exophytic papillary lesions, ranging between 0.4 and 4 cm in diameter. All the 10 patients underwent partial penectomy with tumor-negative surgical margins. All patients were on regular follow-up (range 0.7 to 9 years), and none of the patients developed local recurrence.

Wide surgical excision is the treatment of choice so as to spare as much of the penis as possible. Wide local excision is possible when the lesion is small and restricted to the prepuce and or glans. Hatzichristou et al. [1] suggested that glansectomy would be an appropriate treatment for patients with penile verrucous carcinoma confined exclusively to the glans penis and that the radical excisions (e.g., partial or total penectomy) should be reserved for cases wherein it was not possible to perform glansectomy [1]. Regardless of what surgical procedure is performed, one must ensure that the surgical margins are free of the carcinoma.

Penile verrucous carcinoma is a rare clinical entity with locally invasive characteristics and complete surgical excision is the management of choice. Regional lymph node spread is not seen clinically and does not warrant any treatment. However close follow-up is of great importance due to a substantial risk of local recurrence of the disease.

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