



A COINCIDENCE PAR RARITY: A RARE CASE REPORT OF PENILE SQUAMOUS CELL CARCINOMA

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ABSTRACT

Background: Penile cancer is a rare malignancy, with significantly higher incidence rates in low-income countries like India as compared to the Western world. India is among the countries with the highest incidence of penile cancer globally, with rates reaching up to 3.32 per 100,000 men in certain regions. Various unique challenges arise in managing penile carcinoma due to cultural, social, and healthcare factors prevalent, especially in India, demanding improved awareness and healthcare infrastructure for effective prevention and management. In this context, we present a 52-year-old male patient who initially presented with a penile ulcer. After the thorough examination patient was confirmed with moderately differentiated SCC. The ulcer was managed surgically through a total peno-scrotectomy and perineal urethrostomy. Following the surgical procedure, histopathological examination of the specimen revealed squamous cell carcinoma (SCC), with tumor-free excision margins. This case report sheds light on the importance of regular diagnosis and appropriate surgical intervention in the management of penile cancer, especially in resource limited settings.

KEYWORDS : Malignancy, Squamous cell carcinoma (SSC), Human papillomavirus (HPV), Surgery.

INTRODUCTION

Penile carcinoma is a rare malignant neoplasm categorized under SCC, with an occurrence rate of approximately 0.8 per 100,000 individuals globally.^[1] Notably, 56.3% of these cases are reported in Asia, making it a significant concern in that region.^[2] Moreover, it ranks as the fourth most common malignancy in men. In the United States and Europe, the incidence rate is reported to be 1 per 100,000.^[3] However, the incidence is significantly higher in developing countries such as Brazil, Uganda, and India.^[3]

Research conducted by Solsona E, et al.,^[4] highlights that, one of the highest global incidences of penile carcinoma is found in the Indian population, with a rate of 3.23 per 100,000 inhabitants. In crisp contrast, the lowest incidence is observed among Jewish men born in Israel, with rates close to zero.^[4] This discrepancy underscores the geographical and possibly genetic factors influencing the prevalence of penile carcinoma across different populations.

SCC is the most common type of penile carcinoma, most commonly occurring below the prepuce and within the glans.^[5] The exact etiology of SCCs in the penis is not clear yet. However, it is recognized that, these cancers can develop spontaneously (de novo) or evolve from pre-existing penile intraepithelial neoplasia (PIN). Among the various risk factors, infections with the human papillomavirus (HPV), particularly strains 16 and 18, are notably significant.^[6] These HPV strains are strongly associated with the development of penile SCC, emphasizing the virus's critical role in the pathogenesis of this malignancy.

In addition to phimosis and lichen sclerosus, other risk factors such as poor hygiene, multiple sexual partners, lack of circumcision, smoking, obesity and alcohol consumption. These factors increase the risk of HPV infection, thereby contributing to the development of penile squamous cell carcinoma (SCC).^[7]

We present a case of 52-year-old male patient presented with a chief complaint of an ulcer situated on the right aspect of the penis persisting for the past 2 months. Patient had habits such as alcohol addiction and tobacco chewing. After the thorough routine examination, other investigations, the diagnosis was confirmed with SCC with papillary features of penile carcinoma. The patient underwent surgery and management.

This case emphasizes, the importance of an effective and accurate multidisciplinary approach in the management of penile squamous cell carcinoma.

Case Presentation

A 52-year-old male patient presented with a chief complaint of an ulcer situated on the right aspect of the penis persisting for the past 2 months. The ulcer had irregular margins and measured approximately 2*2 cm in size. The patient also complained of dysuria. Furthermore, the patient had a history of hematuria and significant weight loss. Additionally, the patient had a 20-year history of alcohol dependence and tobacco abuse.

General examination bilateral inguinal lymph nodes, palpable and routine pre operative lab investigations were within normal limits. Punch biopsy of the penile ulcer was performed. Pathological examinations revealed with moderately differentiated SCC. Radiographic investigations, including a Computed Tomography (CT) scan of the patient's abdomen and pelvis, showed mild asymmetric soft tissue thickening, measuring 9.4 mm, involving the distal one-third of the penile shaft. Additionally, focal soft tissue emphysema was observed in the root region of the penis. The scan also, identified physiological subcentimetric lymph nodes in the inguinal and pelvic regions. Following these diagnostic findings, the patient underwent the necessary operative procedure.

Operative Procedure

1. With a circumferential incision around penis & scrotum, total peno-scrotectomy with excision of superficial inguinal lymph nodes by vertical sigma extension of incision on right side of thigh. (Fig 1A to H)
2. Perineal urethrostomy done and secured with 16 fr foley's catheter.
3. Sartorius muscle grafted for closure
4. Incision closed after placing a 16 no. Negative pressure drains in the defect and a subcutaneous suction drain.
5. Subcutaneous closure was done with vicryl 2.0 and skin closed with ethilon 2-0. Sterile dressing done.

Histopathogcial Findings

Resected specimen of the penis with scrotum and bilateral testes reveals SCC with papillary features, evolving glans and mucosal surface of foreskin, exhibiting lymphovascular and

focal perineural invasion and no lymph nodal involvement, classified as pT1bN0. All surgical resection margins were free of tumor.

Final Outcome

The patient went home after staying in the hospital for 15 days. As a result of the surgery, the surgical specimen revealed SCC with no margins of tumor excision. Following this, the patient was referred to an oncologist for further treatment planning and management.

DISCUSSION

Penile cancer is a rare cancer, accounting for less than 1% of male cancers, and is more common in developing countries like Brazil, Uganda, and India.^[3] Penile SCC stands as the predominant malignancy, originating in 33% of cases from precancerous lesions.^[8] Chronic irritation, tobacco use, and inadequate penile hygiene can induce inflammation, metaplasia, and abnormal cell differentiation, paving the way for malignant changes.^[5] Moreover, human papillomavirus (HPV) infections and mutations in tumor suppressor genes such as p53 can exacerbate DNA damage, fostering the progressive growth necessary for cancerous evolution. These factors collectively underscore the complex relationship of environmental, genetic, and behavioral influences in the pathogenesis of penile SCC.^[9]

In the present case report, the patient presented with a 2-month history of ulcers on the right penis and was diagnosed with penile carcinoma. Treatment involved a total penoscrotectomy and a perineal urethrostomy. Similarly, Wibowo et al.,^[10] presented an interesting and rare case report, in which they investigated a 63-year-old man with a history of diabetes and poor hygiene, who had been experiencing penile ulcers for a period of 5 years. The recommended initial treatment approach encompassed total penectomy, wide excision, and urethral perineostomy, targeting the specific complexities of penile cancer coupled with paraffinoma and the presence of sclera fibromatous lesions extending along the entire shaft of the penis. Solakhan M. et al.^[11] conducted a rare case report highlighting, alternative approaches for advanced-stage penile cases involving more proximal penile cancer. They suggested a partial or total penectomy as viable options. Total penectomy, involving excision up to the suspensory ligament while preserving the proximal corpora cavernosa, was discussed as a surgical option.^[12] Radical penectomy, which entails complete removal of the penis, including the entire body, was noted as a less common procedure.^[13] In cases of radical penectomy, a perineal urethrostomy may be performed for voiding while sitting or squatting. The decision regarding the type of penectomy is influenced by factors such as functional and psychological morbidity, which play a crucial role in surgical management.^[13]

The management of penile carcinoma is a challenging process that, depends on several critical factors, including the stage of the tumor, the risk of recurrence, nodal involvement, and the overall advancement of the disease.^[12] Among these, nodal involvement and the subsequent spread of the cancer are particularly crucial determinants of the long-term prognosis. According to previous studies, the five-year survival rate for primary SCC with one positive inguinal lymph node ranges from 79% to 89%, while metastasis to pelvic nodes carries a survival rate of 0% to 17%.^[14] Delay in diagnosis due to feelings of embarrassment, fear, ignorance, or guilt. This delay in diagnosis and treatment is a matter of grave concern because advanced disease stages are strongly associated with increased invasion and a higher probability of regional and systemic metastases, leading to a poorer prognosis and successful outcomes.

Therefore, raising awareness about penile carcinoma and

improving healthcare infrastructure are crucial steps in both preventing and effectively managing this condition. According to the present case report findings, we suggested that, early detection, prompt medical intervention, and access to specialized care are essential for improving outcomes and enhancing the overall quality of life for patients with penile carcinoma.

CONCLUSION

Penile SCC is an extremely rare malignancy with significant implications for patient morbidity and mortality. This case report highlights, the urgent need to spread awareness and early diagnostic acumen to improve outcomes in affected individuals. We recommended that a complete examination, timely biopsy, and appropriate multidisciplinary management are essential in ensuring the best possible prognosis for patients diagnosed with this rare condition.

Early detection and intervention are paramount in managing penile squamous cell carcinoma. It is essential for clinicians to have a significant amount of suspicion when faced with unusual presentations. This will help to ensure that patients receive effective treatment and have better outcomes.

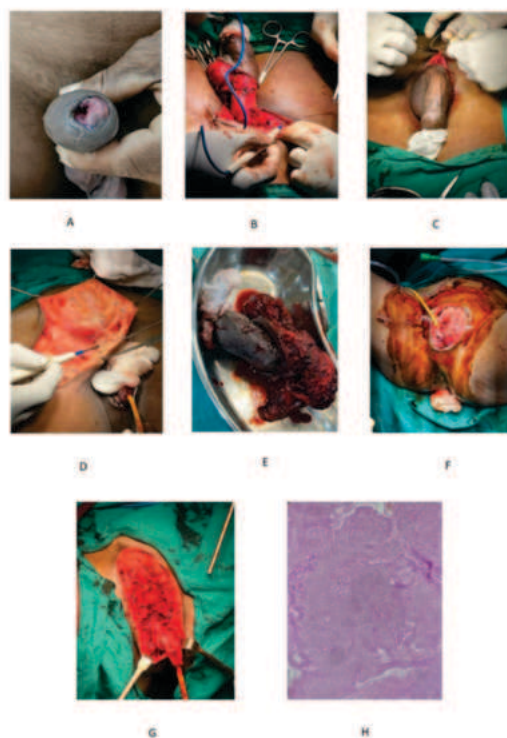


Fig 1 (A to H) - Surgical and histo-pathological image - sheets and islands of polygonal cells

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