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CHALLENGES AND TRIUMPHS: A CASE REPORT ON RADICAL PENECTOMY AND PERINEOSTOMY IN PENILE CANCER

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KEYWORDS
Penile Cancer; Radical Penectomy; Perineostomy

ABSTRACT
Penile cancer is a rare condition, affecting only about one out of every 100,000 men globally yearly. The risk of developing penile cancer significantly increases with factors like age, inadequate hygiene practices, and having a foreskin. A 62-year-old male patient presented with a complaint of painful urination, which he had been experiencing for the past four months, and this pain had worsened over the last month. The patient had a medical history of benign prostatic hyperplasia (BPH), an incarcerated hernia, and had developed ulcers on his penis four months ago. In this case, the patient's past issues with hygiene and smoking likely contributed to the development of penile cancer. However, in more advanced cases like this one, where the cancer had significantly progressed, necessitating the removal of the entire penile body, a radical penectomy was carried out. Subsequently, a perineal urethrostomy was created to provide an alternative route for urination. It is discovered at an advanced stage and requiring aggressive treatments makes penile cancer challenging to treat. A significant therapeutic option for advanced penile cancer is radical penectomy followed by perineal urethrostomy.

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INTRODUCTION

Penile cancer is a rare condition, affecting only about one out of every 100,000 men globally yearly (Da Lau et al., 2015). The risk of developing penile cancer significantly increases with factors like age, inadequate hygiene practices, and having a foreskin (Chalya et al., 2015).

This condition in the United States stands at 1.5 cases per 100,000 individuals annually, 55% of these cases being invasive, while the rest are in situ (Flohil et al., 2013). Similarly, China and the UK report relatively low incidences, at 0.6 cases per 100,000 men. On the contrary, India, Africa, and South America face a higher prevalence. The adjusted incidence rates in these regions range from 2.3 to 8.3 cases per 100,000 people. In Indonesia, specific data on incidence rates is unavailable. A study spanning a decade (1976–1985) in Bandung revealed that penile malignancies constituted 6% of all malignancies in Hasan Sadikin Hospital's Urology Division, whereas a study from 1994 to 2005 in Jakarta's Cipto Mangunkusumo and Dharmais Cancer Hospital found 69 patients with penile malignancies (Kusumajaya & Safriadi, 2022)

The notable contrast between the low incidence in developed countries and the high incidence in developing nations suggests a potential link between the disease and socioeconomic status (Jager & Fraser, 2017).

The causes of penile cancer are complex and not completely understood. Known factors contributing to the disease include inadequate genital hygiene, phimosis, tobacco consumption, engaging in sexual activity with multiple partners, infection with the human papillomavirus (HPV),

and persistent inflammatory conditions like balanitis xerotic obliterans and chronic lichen. (Kusumajaya & Safriadi, 2022)

Although circumcision plays a crucial role in preventing penile cancer, populations with higher socioeconomic status and better cultural practices, including proper hygiene, also experience lower rates of this type of cancer (Kusumajaya & Safriadi, 2022). The most common treatment methods include local excision (36%), partial amputation (26%), laser therapy (16%), and total amputation (8%) (Kirrander et al., 2016).

The treatment choice depends on the specific pathology and location of the lesion. For Carcinoma In Situ (CIS), conservative approaches can be employed in patients with reliable health. Effective methods include the application of fluorouracil cream or neodymium: yttrium aluminium garnet (YAG) laser treatment, which also helps preserve the penis. In cases of invasive penile carcinoma, the primary objective of treatment is complete excision with sufficient margins.

The Taiwan study, which involved 45 patients, performed surgery on the primary tumor including total or partial penectomy, while lymph node dissection was performed on 19 patients. Radiotherapy was only performed on 9 patients. The Chinese study performed neoadjuvant chemotherapy on 24 penile cancer patients with metastases to the affected lymph nodes, with only 15 responsive patients undergoing penectomy and inguinal lymph node dissection. The remaining 9 unresponsive patients continued with palliative radiotherapy (Burt et al., 2014).

Squamous cell carcinoma (SCC) accounts for 48–65% of penile cancer cases, and its prognosis depends on factors like the tumour's location, stage, and grade (Stuiver et al., 2013). Deciding the appropriate surgical treatment for penile cancer is crucial, and it relies on factors like tumour location and local staging (O'Neill et al., 2020).

Meanwhile approximately 80% of primary penile cancers can be treated with less invasive methods such as circumcision, laser ablation, or wide local excision, mainly when they are located distally, cases that involve the urethra or corporal bodies or do not respond to conservative treatment often necessitate more invasive procedures like partial or radical penectomy (O'Neill et al., 2020). In this case report, we describe the experience of an elderly male who underwent a radical penectomy followed by perineal urethrostomy as a treatment for penile cancer.

Figure 1 Clinical condition before surgery

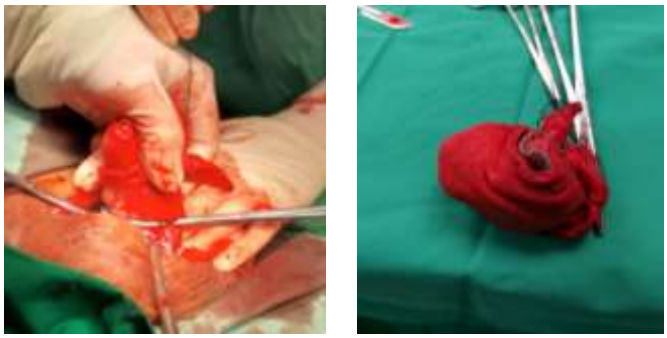

Figure 2 Radical Penectomy

Figure 3 Perineal Urethrostomy

Figure 4. Outpatient clinical condition

METHOD

A 62-year-old male patient presented with a complaint of painful urination, which he had been experiencing for the past four months, and this pain had worsened over the last month. The patient had a medical history of benign prostatic hyperplasia (BPH), an incarcerated hernia, and had developed ulcers on his penis four months ago (Yashwanth Pradeep, 2017). Initially, these ulcers were small and located at the tip of the penis. However, they have since spread to affect the entire penile area (**Figure 1)**. There were no signs of enlarged lymph nodes. The patient had a history of smoking and poor hygiene practices. A biopsy was conducted using a sample from the ulcerated area on the penis, and the histopathologist confirmed the presence of squamous cell carcinoma (SCC). Staging was performed using a chest X-ray, which showed average results. Based on the clinical assessment, the patient was diagnosed as T3N0M0 and surgery was recommended.

The surgical procedure involved a total penectomy, where an elliptical incision was made around the base of the penis. The fundiform and suspensory ligaments were cut and tied off, and the deep dorsal artery was ligated (**Figure 2)**. The dissection extended from the base of the penis up to the tip, resulting in a total penectomy with a 1 cm margin, followed by a perineal urethrostomy (**Figure 3)**. The patient experienced no postoperative complications and was discharged after a three-day stay. The patient's condition was satisfactory during outpatient visits (**Figure 4**).

RESULT AND DISCUSSION

Penile cancer, while relatively uncommon, primarily affects older men, typically diagnosed around 60, with the highest incidence occurring at approximately 70 years old (Da Lau et al., 2015). Its prevalence is notably higher in developing countries, which presents a significant public health challenge (Douglawi & Masterson, 2017). This aligns with existing research indicating that penile cancer predominantly occurs in men who are middle-aged to elderly, primarily affecting individuals between 50 and 70 years old, with a median age of 68 years. However, it can also impact younger individuals; around 22% of patients are under 40, and 7% are younger than 30 (Firmansyah & Safriadi, n.d.).

Several risk factors have been linked to penile cancer, including having an uncircumcised prepuce, chronic inflammatory conditions, exposure to the human papillomavirus (HPV), a history of poor hygiene, smoking, and phimosis (Peyraud et al., 2020). One epidemiological research revealed that smoking tobacco increases the risk of developing penile cancer. Another study indicated that cigarette smoking is an additional risk factor associated with a 4.5-fold increase in the disease risk (Tucktuck et al., 2018).

In this case, the patient's past issues with hygiene and smoking likely contributed to the development of penile cancer.

The European Association of Urology (EAU) and the National Comprehensive Cancer Network have established guidelines for treating penile cancer based on T, N, and M staging categories. According to these guidelines, partial penectomy is recommended when the cancer is at stage T2. In contrast, at stage T3, total penectomy and perineal urethrostomy are performed (Prayoga & Tranggono, 2016).

The primary goal of treating the main tumor is to remove it altogether while preserving as much of the organ as possible, ensuring oncological control. Long-term survival is minimally affected by local recurrence, justifying strategies that prioritize organ preservation (Peyraud et al., 2020).

The decision to perform a radical penectomy followed by perineal urethrostomy reflects the advanced stage of the disease. Total penectomy, which entails excision up to the suspensory ligament while preserving the proximal corpora cavernosa, is a standard surgical option for penile cancer (Downey et al., 2019). However, in more advanced cases like this one, where the cancer had significantly progressed, necessitating the removal of the entire penile body, a radical penectomy was carried out. Subsequently, a perineal urethrostomy was created to provide an alternative route for urination.

Radical penectomy, involving the complete removal of the penis, is a drastic surgical procedure reserved for advanced cases of penile cancer that have not responded to less invasive treatment options such as circumcision, laser ablation, or wide local excision. In this case, the choice to proceed with a radical penectomy was based on the extensive involvement of cancer, which had spread throughout the entire penile area (Kazarian et al., 2021). This approach aims to ensure the thorough removal of cancerous tissue, thereby enhancing the patient's prospects for recovery and survival (Reig et al., 2022).

CONCLUSION

It is discovered at an advanced stage and requiring aggressive treatments makes penile cancer challenging to treat. A significant therapeutic option for advanced penile cancer is radical penectomy followed by perineal urethrostomy. This case report is meant to remind us of the value of early detection, which usually affects elderly males, especially in developing nations. Risk factors, including poor hygiene and a smoking history, contribute to developing the disease. It is essential for the public to be aware of the disease and to implement preventative healthcare measures.

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