Urology Case Reports 34 (2021) 101496

Contents lists available at ScienceDirect

Urology Case Reports

journal homepage: http://www.elsevier.com/locate/eucr

Oncology

Giant squamous cell carcinoma of penis with rapid progression

Yongrui Zhang [a], Runhui Tian [b], Zhanmeng zhu [c], Kaimin Guo [c,*]

[a] Department of Urology, The First Hospital of Jilin University, Changchun, 130021, PR China
[b] Department of psychology, The first hospital of Jilin University, China
[c] Department of Andrology, The First Hospital of Jilin University, Changchun, 130021, PR China

ARTICLE INFO

Keywords:
Squamous cell carcinoma of penis
Invasive
Rapid progression

ABSTRACT

A 65-year-old man presented with a giant ulcerative and malodorous genital mass rapidly growing for 5 months. On first presentation, he noticed a 3 cm × 2 cm cauliflower-like mass located in the penile dorsal shaft. But, he rejected any operation. Unfortunately, the lesion became aggressive and eventually destroyed the entire penile shaft and urethra within a five-month period. He underwent a radical penectomy, scrotal extended resection, formation of a perineal urethrostomy and left inguinal lymph node biopsy. Pathology revealed poor-differentiated invasive squamous cell carcinoma. The patient had an uneventful recovery.

Introduction

Giant penile tumor was reported in many cases. The majority of penile carcinoma is squamous cell carcinoma. In some developing countries in Asia, Africa and South America, penile cancer may account for up to 20% of all cancers and up to 45% of all genitourinary tumors.[1] The delay in diagnosis and treatment often results in disease progression, which can have a devastating outcome. In this case, we present an unusual case with penile squamous cell carcinoma developing from a cauliflower-like mass into ulcerative pattern in a five-month period without any precipitating factors.

Case report

A 65-year-old male was referred to the urology clinic because of rapidly growing penile mass in five months in January 2018. He firstly visited our clinic due to a cauliflower-like mass in the penile dorsal shaft (Fig. 1,A). A biopsy of the tumor revealed focal invasive squamous cell carcinoma. The patient rejected any operation. However, as the lesion became aggressive and eventually destroyed the entire penile shaft and urethra within a five-month period (Fig. 1,B), he referred our department. He suffered from the giant ulcerative lesion, which caused voiding difficulty and resulted in poor personal hygiene. The patient denied history of sexually transmitted infections and family history was noncontributory. Physical examination revealed widespread infiltration of penis and urethra with purulent and malodorous discharge. Bilateral enlarged inguinal lymph nodes can be palpable. Micturition remained intact but the external urethral meatus could not be recognized. He also complained about 20 kgs weight loss the last 3 months.

Laboratory results showed white blood cells 11.1 × 10^9/L with 79% neutrophils, red blood cells 3.85 × 10^{12}/L, blood platelet 311 × 10^9/L. Total serum protein was 64.7g/L(65–85g/L), and albumin27.2g/L (40–55g/L). Serum tumor markers testing revealed extremely high-level of squamous cell carcinoma antigen (SCC–Ag, 58.2ng/ml, normal range<2.7ng/ml), elevated CA199(47.20 U/mL, normal range0-19U/mL), and CEA(9.72ng/mL, normal range0-5ng/mL). He was admitted and commenced on antibiotics and intravenous albumin therapy. Debridement was performed using hydrogen peroxide lotion every day. Computerized tomographic scan of the chest, abdomen and pelvis showed no evidence of metastasis, but giant genitalia invasive mass (Fig. 2)and bilateral inguinal lymphadenopathy.

After 4 day preoperative preparation including nutritional support and antibiotic therapy, the patient physical condition was improved and his bilateral inguinal lymph nodes subsided after two-weeks antibiotic treatment. Ultimately, after discussion with multiple surgical specialties, a treatment plan was formulated. A radical penectomy, scrotal extended resection, formation of a perineal urethrostomy and left inguinal lymph node biopsy was performed (Fig. 3A and B). Pathologic examination showed the tumor cells were arranged in clusters and nests pattern with obvious nucleoli and confirmed the diagnosis of high-grade invasive squamous cell carcinoma (SCC)with negative surgical margins (Fig. 3C and D). There was no evidence of involvement in the removed lymph nodes. The tumor was classified as pT3N0M0. The patient's post-operative healing was uneventful, and he was discharged after seven

* Corresponding author. Department of Andrology, The First Hospital of Jilin University, No. 71, Xinmin Street, Changchun, 130021, Jilin Province, PR China.
E-mail addresses: yongruizhang@jlu.edu.cn (Y. Zhang), tianrunhui@jlu.edu.cn (R. Tian), zzm196096@163.com (Z. zhu), gkm7631703@jlu.edu.cn (K. Guo).

https://doi.org/10.1016/j.eucr.2020.101496
Received 22 October 2020; Received in revised form 9 November 2020; Accepted 14 November 2020
Available online 19 November 2020

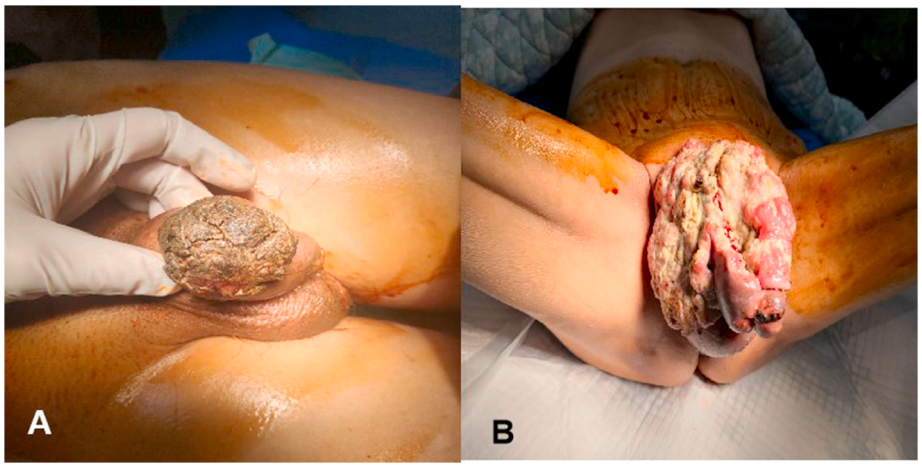

Fig. 1. (A) A 3 cm × 2 cm fungating mass in the penile shaft observed on his first visit. (B) Extensive infiltration of the penile shaft and urethra with purulent discharge noted five months later.

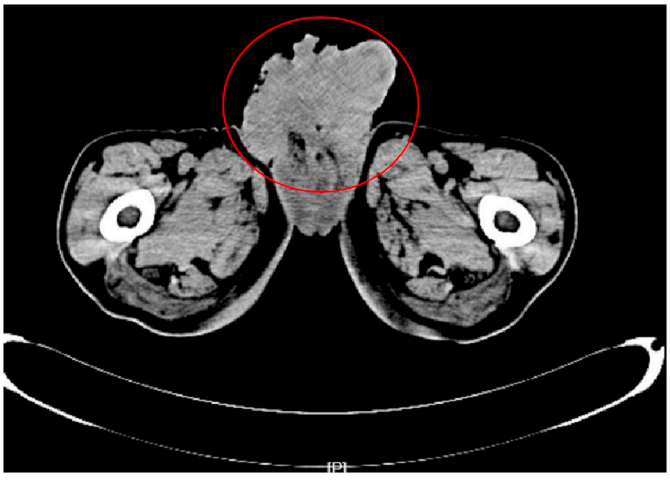

Fig. 2. Preoperative CT showing the deep ulcerating lesion occupying the entire exterior genitalia with unclear corpus cavernosum of penis and corpus spongiosum.

days. He was in good clinical condition after 24-month follow-up without adjuvant chemotherapy. Serum tumor markers SCC-Ag, CA199 and CEA returned to normal range.

Discussion

Giant penile carcinoma with rapid progression was often seen as Buschke Löwenstein tumor, which was firstly described by Buschke and Löwenstein in 1925. It was locally invasive, rapidly growing "carcinoma-like condylomata acuminata" and classified as a verrucous carcinoma. Moreover, It accounts for 5%–16% of all penile squamous cell carcinomas. But in our case, Buschke Löwenstein tumor was not considered as it massively invaded the entire genitalia. Various factors have been implicated in the aetiology of squamous cell carcinoma of the penis, including the number of sexual partners, HPV exposure, smoking, absence of circumcision and poor hygiene in the genital area.[2] HPV-16 subtype has the highest prevalence in invasive penile tumors. It most commonly appears on the glans, balanopreputial sulcus and/or prepuce and may present as an exophytic growth, ulcerated nodule, or flat ulcer with pruritus, burning, pain, discharge, bleeding, or foul odor.[3] In our case report, this patient had phimosis. Interestingly, it initially appeared in penis shaft, then quickly invaded the entire penis. This is an unusual case with penile squamous cell carcinoma with extremely local invasion in such a short period.

The standard surgical management of giant invasive penile squamous cell carcinoma is undoubtedly total penis resection. A multidisciplinary team approach including urology, and plastic and reconstructive surgery should collaborate and optimize both oncological outcomes and the benefits of a functional reconstruction. In patients with massive scrotal skin involvement, using a musculocutaneous flap to repair defects is a good option after cancerous lesion resection.[4] The inguinal lymphadenopathy is noted at diagnosis in 30%–60% of patients, and among half of these patients is due to inflammatory reactions. In our case, this patient was fortunate enough to have available scrotal skin to cover the testis. He was also performed perineal urethrostomy instead of vesicostomy. Inguinal lymph node biopsy showed no evidence of involvement and bilateral lymphadenopathy subsided after antibiotics treatment. It was indicated that unnecessary radical lymphadenectomy could be also avoided in cases of rapidly progressive penile squamous cell carcinoma.

Conclusion

Invasive penile squamous cell carcinoma are relatively common and should be treated as early as possible. A delay in diagnosis can lead to considerable morbidity and mortality. This case highlights the importance of early intervention in any invasive penile squamous cell carcinoma. Early treatment can prevent organ dysfunction, squat urination and even death.

Ethical approval

Written informed consent was obtained from the patient's wife for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

CRediT authorship contribution statement

Yongrui Zhang: Data curation, acquired the clinical data. **Lingyun Liu:** Data curation, acquired the clinical data. **Zhanmeng zhu:** Data curation, acquired the clinical data, were responsible for the clinical management of the patient. **Kaimin Guo:** Writing – original draft, drafted the manuscript, were responsible for the clinical management of the patient.

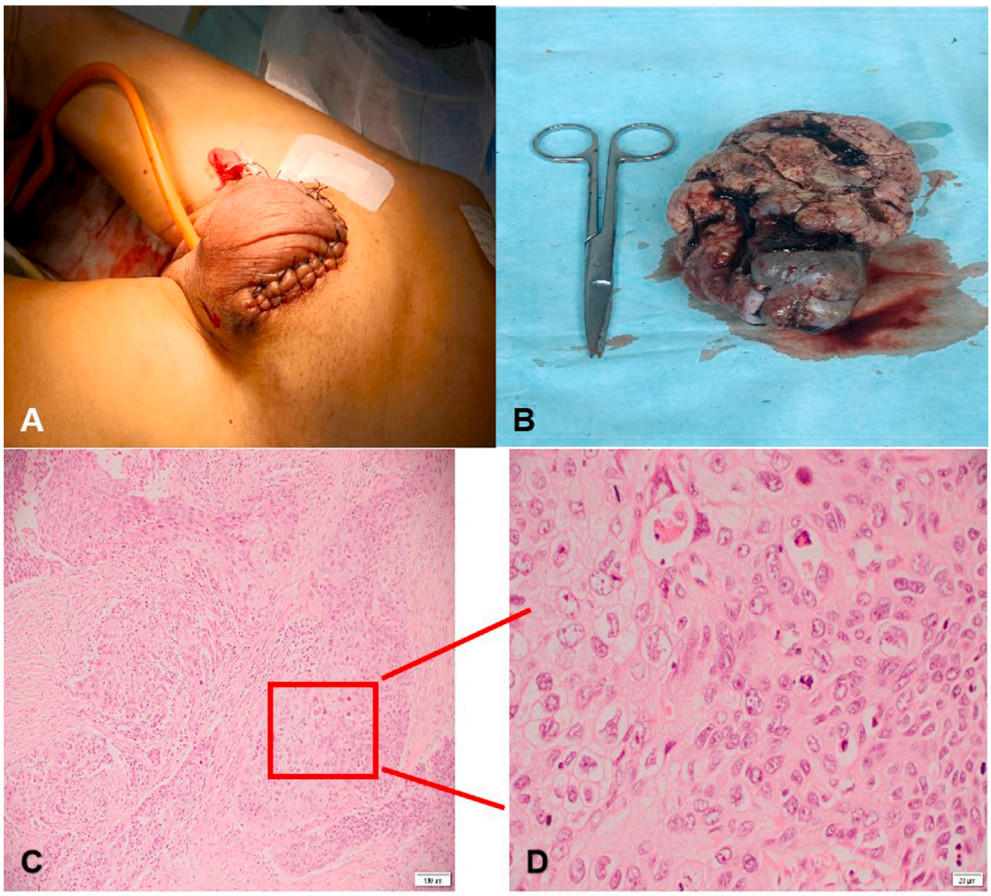

Fig. 3. (A) Postoperative image after total penectomy, scrotal extended resection, perineal urethrostomy and lymph node biopsy. (B) Appearance of the mass measuring 11 cm × 9.5 cm × 6.5cm invading the entire penile shaft. (C-D) Pathology revealed moderate-to poor-differentiated squamous cell carcinoma was noted (H&E, original magnification × 40 and × 200).

Declaration of competing interest

The authors declare that there are no competing interests associated with the manuscript.

Acknowledgements

We acknowledge and appreciate our colleagues for their valuable efforts and comments on this paper.

Funding information.

This work was supported by National Natural Science Foundation of China (No. 81901543) and Guang Hua Foundation of The first hospital of Jilin university (No. JDYYGH2019023).

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