

Oncology

Basal cell carcinoma arising from the scrotum: An understated entity

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ABSTRACT

Basal cell carcinoma (BCC) is the most commonly occurring carcinoma among humans. Reports of this lesion on nonexposed areas, such as the scrotum, soles, vulva, groin, pubic region, and axilla, are relatively uncommon. We present the case of a male patient with BCC located in the scrotum with a duration of 12 years who was successfully treated by local excision. Histopathology revealed infiltration by BCC. Our objective of this report is to remind specialists like urologists of the possibility of scrotal BCC when encountering scrotal lesions of unknown origin or not responding to topical treatments in a reasonable time frame.

Introduction

Among the various skin cancers, basal cell carcinoma (BCC) is one of the most common cancer. It probably originates from pluripotential cells in the epidermis or in a hair follicle. As ultraviolet light is the most common predisposing factor, 85% of all BCCs occur in the head and neck region.¹ BCC involving genital epithelium is rare and the estimated annual incidence of BCC of the scrotum is 1 per 1,000,000 population. Here, we report a old man with scrotal BCC, who was successfully treated by local excision with good prognosis.

Case presentation

A 74-year-old man presented with a mass on the right side of his scrotum for 12 years. During the recent one week, he found the nodule gradually increased in size and became itchy. Due to bleeding and pruritus, he was referred to dermatology department. Physical examination revealed an irregularly indurate and movable tumor, 20 mm in diameter, with a well-defined border on the ventral root of his penis (Fig. 1). No enlarged lymph node was found in inguinal areas. He also denied any history for sexually transmitted disease, trauma to this area, radiotherapy and chemical, exposure to sun or arsenic. No other cancer involving skin cancer was diagnosed. Subsequent biopsy specimen showed superficial basal cell carcinoma. Then, the patient was admitted to urology department for surgery. All pre-operative laboratory tests, including complete blood count, biochemistry and chest X-ray, were

normal. No distant organ metastasis was found in abdominal computerized tomography (CT) scanning. Under general anesthesia, en-bloc excision with a margin of 2.0 cm of normal skin was performed. Histological examination confirmed a basal cell carcinoma (Fig. 2). The patient had a good postoperative clinical course with no evidence of metastasis 12 months after the operation. No definite relationship has been established between exposure to carcinogenic agents and subsequent development of BCC.

Discussion

Basal cell carcinoma (BCC) is the most common skin cancer worldwide, which are mostly found on the sun-exposed areas. However, BCC occurring on non-sun-exposed sites, such as the genital regions such as the scrotum, soles, vulva, groin, pubic region, and axilla, have rarely been reported. To our knowledge, less than 60 cases of scrotal BCC have been described as series or clinical case reports mainly in the urological and dermatological literatures. In comparison with scrotal squamous cell carcinoma, no definite relationship has been established between exposure to carcinogenic agents and subsequent development of BCC. It has been documented that mutations of P53 have been found in up to 40% of studied BCCs, 72% of the mutations bear the signature of ultraviolet light induction.² Ultraviolet rays are an unlikely cause of scrotal BCC. So it has been proposed that genital papillomavirus (HPV) infection might stimulate the growth of scrotal BCCs. Recent study found that genetic polymorphisms in loci coding for certain detoxifying

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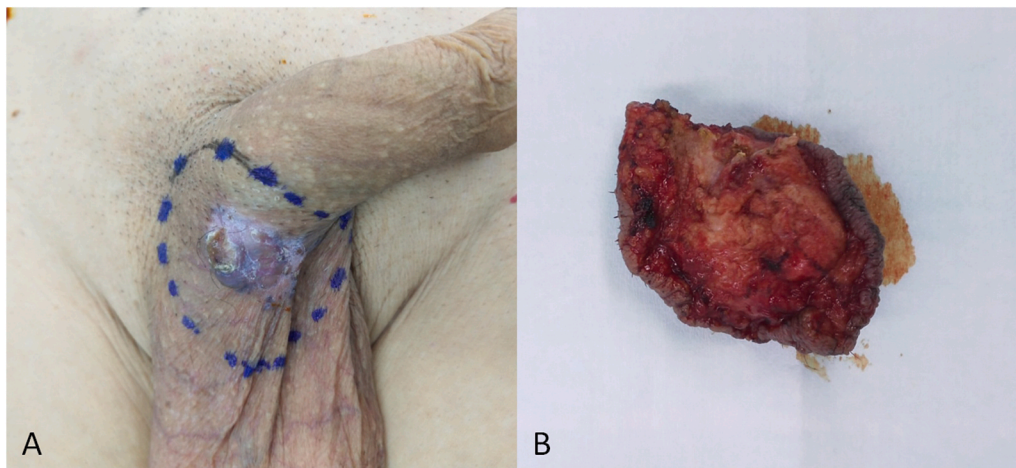


Fig. 1. Photograph of typical appearance of scrotal basal cell carcinoma of. (A) surgical margin was marked. (B) the tumor measuring 2 cm × 1.5 cm × 0.3cm was removed.

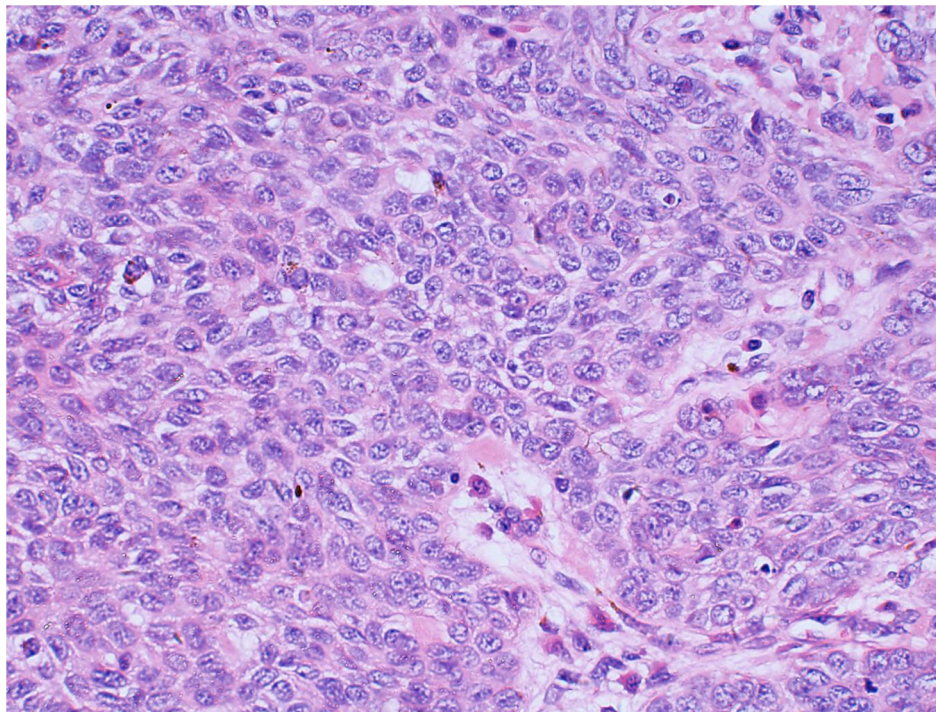


Fig. 2. Histopathologic appearance of the tumor shows peripheral palisading and peritumoral slits (H and E, × 100).

enzymes might increase the risk of BCC development.³

The average age of patients with scrotal BCC was 65 years (range 42–82 years) and the most symptoms are nodules or ulcers. The nature of BCC elsewhere is one of chronic local extension and invasion with a low incidence of metastasis between 0.003 and 0.1%. Jeon Jiehyun found that scrotal BCC was more aggressive and had a high risk of metastasis than that located in other areas in his review.⁴ Meanwhile, metastatic scrotal BCCs may be characterized by the notion that distant metastasis occurs in a shorter period compared with other metastatic BCCs. It has been speculated that anatomical peculiarities of the thin scrotal skin lacking subcutaneous fat and being well vascularized might favor this rather aggressive course of scrotal BCC.

Scrotal rugosity may make delineation of tumor margins clinically difficult. Wider excision than the currently recommended 4-mm clinical margins may be required to effect complete excision of the tumour. As the scrotum is an area where tissue preservation is imperative and where

tumors in general have large dimensions and imprecise limits, Mohs microscopic surgery is the best option, providing cure rates higher than conventional surgery. In cases of scrotal BCC involving penis, partial or complete amputation, urinary diversion, penis reconstruction or cystostomy is selectively performed. In cases of wide excision was performed leaving larger defect, scrotal myofasciocutaneous flap has remarkable extensibility, making it ideal for the coverage of a genital skin defect.⁵ In addition, the patient's social background, wishes, activity and life expectancy should be given more consideration than the cure rate compared with the situation for younger people. The therapeutic plan for elderly patients should be modified after considering all these factors.

Conclusion

In our case, we performed a wide local excision. No recurrence and

metastasis have been seen for 1 year after operation. Our objective of this case report is to remind specialists like urologists of the possibility of the possibility of BCC in areas not exposed to the sun, such as the genital region, and its aggressive behavior. However, further studies are required to analyze the etiopathogenesis, potential risk factors and molecular basis of this rare, but relevant presentation of BBC.

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.

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Authors' contributions

Shumei Han: drafted the manuscript, were responsible for the clinical management of the patient. Yongrui Zhang: acquired the clinical data. Runhui Tian: acquired the clinical data, were responsible for the clinical management of the patient. Kaimin Guo: drafted the manuscript,

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Declaration of competing interest

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

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