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Conservative surgery using scrotal skin for invasive penile carcinoma: Case report and brief review of the literature

Samira Pereira das Posses, Gotardo Zini Pinho, Gustavo Ruschi Bechara*, Bruno Costa do Prado, Márcio Maia Lamy de Miranda

Department of Urology, Federal University of Espírito Santo, Vitória, ES, Brazil

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1. Introduction

Squamous cell carcinoma (SSC) of the penis comprises 95% of all cases of penile cancer worldwide. 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. In the United States penile carcinoma is an uncommon malignancy constituting less than 1% of all cancers.[1]

The primary tumor has been historically treated with some form of amputation. After isolated reports of successful local excisional therapy, less invasive surgery was developed to provide oncologic control with minimal loss of anatomical function and preservation of function. Current guidelines suggest that for CIS and T1 disease penile sparing techniques should be considered.[2]

Complete excision of the tumor with a tumor-free margin is the goal of any treatment. A recent study showed that despite a high number of local recurrences after penile preservation treatment there was little impact on survival. This article will review contemporary surgical approaches for managing the primary penile tumour enhance outcomes in organ-preserving surgery.[1]

2. Case report

A 42-year-old man with a history of tobacco smoking presented to the urology department with a 5-month history of progressive penile induration, followed by inflammation and local suppuration with purulent drainage.

Clinical examination revealed a mass of 4.0 × 3.5 cm in the glans in continuity with the penile shaft that did not involve spongy urethra and corpora cavernosa. Bilateral mobile and elastic inguinal lymph nodes were observed measuring approximately 1,0 cm. Parcial penectomy as standard initial therapy was rejected by the patient, and he underwent excisional therapy. (See Fig. 1). Preoperative biopsy with careful mapping of the extent of the disease was performed. histoPathological analysis revealed well differentiated invasive squamous cell carcinoma of 6,5 × 6,4 × 5,4 cm and in situ carcinoma surrounding tissues without lymphangiosis carcinomatosa but with narrow resection margin.

The patient presented good healing, maintenance of sexual and urinary functions. Adjuvant radiation therapy (27 sessions) was performed given the presence of inadequate margins on histopathological evaluation. On computer tomography (CT) scan of the abdomen and pelvis bilateral inguinal lymph nodes, up to 1.5cm were present therefore bilateral inguinal dissection (superficial and deep) was performed three months after the first surgical approach. In surgical specimens only reactional lymph nodes were identified, with no evidence of malignancy (11 nodes on the right and 17 nodes on the left). Pathology departments from the participating institution provided pathology assessment. Tumors were staged according to the 2009 TNM classification in T1N0M0.

3. Discussion

Originally, the standard resection required a 2-cm tumor-free margin; however, the new guidelines set this at just 5 mm. In 2000, Agrawal et al. reviewed 64 partial and total penectomy specimens to determine tumor microscopic spread beyond macroscopic margins. They concluded that 81% did not extend beyond visible tumor margins and only 25% (3/64) extended more

* Corresponding author. Department of Urology, Federal University of Espírito Santo (UFES), Hospital Universitário Cassiano Antônio de Moraes HUCAM, Av. Marechal Campos Nazareth, Vitória, ES, 29041-295, Brazil.
E-mail address: gustavoruschi@hotmail.com (G.R. Bechara).

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Fig. 1. A and B Extensive lesion involving the distal penile shaft. C and D- Local excision of the lesion. E After wide local excision of the lesion. F and G Reconstruction is carried out using scrotal skin. H and I One month after surgery.

than 5 mm from the margin.[3] Minhas et al. reported a similar study, and concluded that despite 92% of patients having a less than 20-mm margin (48% of which was <10 mm), only 3 (6%) patients had positive margins and only 2 (4%) developed local tumor recurrence within an average of 26 months.[2] This studies contributed to the hypothesis that excision margins of less than 10mm had low recurrence risk.

In selected patient, sparing techniques provides excellent appearance with maintenance of function. For CIS or T1 lesions local tumor excision with primary closure or wound coverage with a flap or a graft provides good oncological outcomes in addition to preserving a functional organ. Wide local excision (WLE) may be performed in association with primary closure or split-skin grafting. Recent data suggest that for low-risk tumours a 10 mm tumor-free margin is adequate. WLE can be performed for T1, low-grade tumours of the shaft, but it's contraindicated for tumours in close proximity to the urethra, urethral involvement or lesions extending more than half of the glans penis.[1]

The local recurrence rate of penile conserving procedures according to the literature is 4% to as high as 37%. In most cases, more

than 90% of recurrences develop in the first 5 years after initial treatment. Thus, it is necessary to have a minimum 5-year followup for all patients after conservative therapy for penile tumors to achieve more accurate outcomes.[1]

Djajadiningrat RS et al. reported a 5-year cumulative incidence of local recurrence as the first event after penile preservation of 27% while after (partial) penectomy it was 3.8%. Patients treated with penile preservation showed no significant difference in survival compared to patients treated with total or partial amputation.[4]

A recent study looked specifically at local recurrence in 179 men undergoing organ-sparing surgery between 2002 and 2010. The 5-year local recurrence-free survival was 86.3. The 5-year CSS for an isolated local recurrence was 91.7%. Thus local recurrence after organ-preserving surgery does not appear to have a negative impact on survival.[5]

4. Conclusion

Studies have demonstrated the safety of reducing surgical margins through penile-preserving techniques in selected patients with localized penile cancer that provide tumor control similar to that of conventional resection. Tumor characteristics (site, extent and grade) determine the choice of treatment for the primary penile lesion. Inguinal lymph nodes should be managed according to established guidelines but should not influence the extent of resection of the primary penile lesion. With strict criteria selection and close follow up most patients with invasive SSC of the penis can benefit from preservation surgery.

Conflicts of interest

None.

Appendix A. Supplementary data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.eucr.2017.10.010.

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