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LETTER TO THE EDITOR

Male Health

Penile cutaneous horn: a rare case report and review of the literature

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Dear Editor,

Cutaneous horn is a clinical term describing a conical hyperkeratotic nodule above the surface of the skin organized in the shape of a miniature horn. Cutaneous horns most frequently appear in sun-exposed areas, typically being found on the face and scalp.¹ We report an unusual case of a cutaneous horn on the penis. Few such cases have been reported in the literature.

A 55-year-old man presented to our Department of Urology with a 3-month history of a penile lesion. The patient had undergone circumcision for redundant prepuce 3 months previously. Physical examination revealed a 4.0 cm × 4.5 cm curved white lesion projecting outward from the left side of his penis near the corona and the lesion was indurated without induration of the penis deep to the lesion (**Figure 1a**). There was no palpable inguinal lymphadenopathy. A computed tomography (CT) scan of the pelvis revealed a localized lesion with no evidence of lymph node involvement or distant metastasis (**Figure 1b**).

The patient underwent resection of the lesion with a rim of normal tissue. Histopathology of section from the lesion showed extreme hyperkeratosis, epithelial dysplasia, and papillomatosis of the epithelia (**Figure 1c**). Immunohistochemically, the tumor cells showed positivity for P16 (**Figure 1d**), Ki67 (**Figure 1e**), and P53 (**Figure 1f**). A polymerase chain reaction (PCR) was performed to identify high-risk human papillomavirus (HPV) types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68, and 82, with negative results. Considering the clinical features and pathological evaluation, the tumor was confirmed to be a penile cutaneous horn with suspected cell carcinoma. The patient was reluctant to undergo partial penectomy, but he agreed to participate in careful postoperative follow-up. The first follow-up visit was on postoperative day 90. The patient presented at that time with a 5-mm nodular lesion on the original surgical site, which we surgically excised. Histopathology revealed extreme hyperkeratosis, dyskeratosis, and epithelial dysplasia but no evidence of malignancy in a deep-margin biopsy specimen. The postoperative recovery was satisfactory and the patient was free of recurrence until the last follow-up (at 9 months).

Penile cutaneous horn is uncommon and has been rarely reported (**Table 1**).^{1–9} The first case of penile cutaneous horn

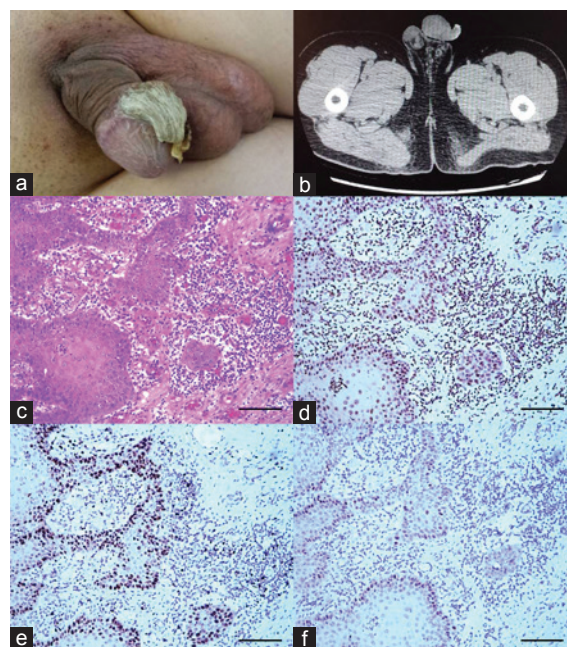


Figure 1: (a) Clinical image of the penile cutaneous horn. (b) Computed tomographic image showed a localized lesion projected from the glans penis. (c) Hematoxylin and eosin image showed a lesion with hyperkeratosis. (d) The tumor cells demonstrated strong expression for P16. (e) Histological section showed that the tumor was positive for Ki67. (f) Immunohistochemical staining showed expression of P53. Scale bars = 200 μm.

was described in 1854. To date, however, its etiology is still uncertain.^{4,7} It may derive from a variety of benign, premalignant, or malignant epidermal lesions.¹⁰ Chronic preputial inflammation, phimotic foreskin, the trauma of circumcision, and viral infection have been implicated in penile cutaneous horn formation.^{6,11}

In the present case, the penile cutaneous horn formed after an adult circumcision. It is thus hypothesized that the trauma of circumcision preceded cutaneous horn formation by 3 months. In the current case, the patient did not present with palpable inguinal lymphadenopathy. A CT scan of pelvis is often used to detect primary lesions and metastatic disease. It was difficult to establish a precise diagnosis of penile cutaneous horn preoperatively due to lack of any typical radiological features. Thus, histopathological examination of the excised penile lesion was necessary for the postoperative definitive diagnosis.

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Table 1: Clinical features of the reported series of penile cutaneous horn

Study	Patient (n)	Age (year)	Presentation	Lesion (cm)	Treatment	Follow-up (month)
Vera-Donoso <i>et al.</i> ¹	1	65	Painless nodule	2.0×0.5	Local excision	12/NER
Reis <i>et al.</i> ²	1	20	Painless nodule	1.7×0.8	NA	NA
Ponce <i>et al.</i> ³	1	79	Painless nodule	3.0×0.5	Local excision	NA
Mastrolorenzo <i>et al.</i> ⁴	1	46	Painless nodule	1.5×1.5	Local excision	6/NER
Gupta <i>et al.</i> ⁵	1	42	Painless nodule	2.5×1.0	Local excision	NA
Zhou <i>et al.</i> ⁶	1	43	Painless nodule	2.0×1.0	A partial penectomy	6/NER
Pattabi <i>et al.</i> ⁷	1	45	Pain nodule	NA	Local excision	NA
Blaschko <i>et al.</i> ⁸	1	70	Painless nodule	3.0×2.0	Local excision	NA
Kraus <i>et al.</i> ⁹	1	49	Painless nodule	3.0×3.0	Local excision	NA

NER: no evidence of recurrence at documented follow-up; NA: not available

The European Association of Urology guideline classifies penile cutaneous horn as a premalignant lesion.¹² Surgical excision with careful histological examination is the mainstay of treatment. Partial penectomy should be considered if malignant change is found in a penile cutaneous horn. In the present report, as the patient was reluctant to undergo partial penectomy, we performed a glans-sparing surgical excision. Histopathology demonstrated extreme hyperkeratosis, epithelial dysplasia, and papillomatosis of the epithelia, without evident signs of malignancy.

In conclusion, we present a rare case of a penile cutaneous horn that did not recur or metastasize until the last follow-up at 9 months. A glans-sparing surgical excision may be a treatment of choice for penile cutaneous horn as it conserves penile tissue and improves the patient's quality of life. Due to its malignant potential, long-term follow-up is advisable to observe the clinical behavior of a penile cutaneous horn.

AUTHOR CONTRIBUTIONS

QF and GWS designed the study and revised the manuscript, MQT collected the clinical information and performed the literature review, XJL collected the pathological data, and YW drafted the manuscript. All authors read and approved the final manuscript.

COMPETING INTERESTS

All authors declare no competing interests.

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