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Acantholytic Squamous cell carcinoma of penis - A Case Report

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Abstract

A case of unusual and aggressive variant (Acantholytic) squamous cell carcinoma of the penis with no metastasis to lymph node in 50-year-old male is described.

SCC of penis is commonly divided into the usual, basaloid, verruciform, warty, verrucous, and papillary subtype. Adenoid or acantholytic SCC is an unusual variant.

This variant can be misdiagnosed morphologically as angiosarcoma as it strongly mimics the tubular pattern of an adenocarcinoma or the vascular channels of an epithelioid angiosarcoma. Microscopically, tumors were SCC with acantholytic areas ranging from solid nests with early necrosis or empty pseudo luminal spaces lined by single layer of squamous cells. Surgery of choice may include circumcision (for tumors confined to the foreskin) as in our case or a more extensive surgery (Mohs surgery, wide excision, glansectomy, or removal of part of the penis).

Keywords: Acantholytic squamous cell carcinoma, Squamous cell carcinoma, penis

Introduction

The incidence of penile cancer in developing countries ranges from 0.7-2.3 cases per 100,000 men, usually occurs in men between the ages of 30 and 60 years (1). The usual type of squamous cell carcinoma (SCC) is most common (i.e. 60%) whereas less common variants include basaloid (10%), warty (10%), papillary (15%), verrucous (3%), sarcomatoid (4%) and Aden squamous (1%) (2). Acantholytic squamous cell carcinoma (ASCC) is a rare type of squamous cell carcinoma (SCC) which is often considered to be a more-aggressive variant with worse prognosis than other SCC subtypes (1). Lever originally identified this well-known squamous cell cancer variation in 1947 (3). Despite the fact that the World Health Organization (WHO) has long recognized ASCC as an original entity (4)(5), there are currently less than 30 cases of ASCCs documented in the international literature (6). Prolonged sun exposure leads to the majority of acantholytic carcinomas, ultraviolet (UV) radiation-induced damage is probably a contributing cause. The skin on the head, neck, cheeks, and ears is

frequently affected by the lesions (7). ASCC is known to cause diagnostic difficulties to the pathologist due to formation of pseudo glandular and pseudo vascular spaces, creating diagnostic confusion with angiosarcoma. Hence, there is large number of terminologies associated with the entity such as adenoid SCC, pseudo glandular SCC, and angiosarcoma-like SCC (3). Here, we report a rare case of ASCC of the penis in a 50-year-old male.

Case report

A 50-year-old man complained about the growth over the penile region for four months. There was no prior history of injury, urinary blockage, or discharge from the growth. Upon closer inspection, a 3 × 4 cm, friable growth with ill-defined edges was found across the preputial skin's mucosal surface. The growth was not extending to glans.

Inguinal lymphadenopathy wasn't present. Investigations and systemic examination were within normal limits. Human immuno deficiency virus enzyme linked immuno sorbent test and hepatitis B virus surface antigen were non-reactive.

Radiograph examination revealed an exophytic growth of 3.2 X 1 cm with significant vascularity and no areas of calcification noted.

A biopsy was done which showed acanthotic and markedly dysplastic squamous epithelium. Circumcision was done and specimen was sent for histopathology examination.

On histopathology examination

Gross examination revealed a friable mass along with attached penile skin (Fig.1 and 2). Mass msg: 3 X 2 X 1 cm. Cut section showed an irregular growth greyish white area.

Microscopy

Fig-3) Acantholytic cells arranged in pseudo glandular pattern (High power view, H&E stain).

Fig-4) Acantholytic squamous cells with features of malignancy (High power view, H&E stain).

Fig-5) Prominent vascularity, the blood vessels appear to be surrounded by discohesive tumor cells (High power view, H&E stain).

Fig-6) Tumor mass arising from squamous epithelium showing acantholytic cells arranged in pseudo glandular pattern (Low power view, H &E stain).

Histopathology report was given as acantholytic squamous cell carcinoma. It was advised to perform immunohistochemistry (IHC) to confirm the diagnosis. Tumor cells are shown to be Immunonegative for endothelial markers such as CD31, CD34, and ERG but positive for Cytokeratins (CK) (AE1/AE3), epithelial membrane antigen (EMA), and CK5/6 by immuno histochemistry.

Discussion

Squamous cell carcinomas (SCCs) make up the majority of penile malignancies, however there are a wide range of histologic subgroups within this category, each with a unique prognosis. The most common subtype is the usual SCC, representing one half to two thirds of penile carcinomas. Verrucous, warty (condylomatous), and papillary carcinomas that are not further characterized are included in the category of penile verruciform tumors. Verruciform tumors are low grade as a whole. Contrarily, the most aggressive penile tumors are basaloid and sarcomatoid carcinomas. Other SCC types are extremely uncommon and include carcinoma cuniculatum, pseudo hyperplastic, Aden squamous, and acantholytic carcinomas (8). First described by Lever in 1947 acantholytic variant of penile SCC is an unusual variant of SCC (3). The mucosal surface that stretches from the preputial opening to the meatus urethral is is where the majority of infections start. This malignancy has been associated to a number of risk factors, including the

human papillomavirus (HPV), phimosis, cigarette use, chronic inflammation, lichen sclerosus, and poor hygiene. The tumors are visibly big, atypical masses that deeply invade the corpora and include several penile anatomic compartments. Keratin, acantholytic cells, and necrotic debris are present can be seen in the pseudo glandular spaces under microscope (8).

In our scenario, it appears that tumor cells line many of the cystic and vascular areas. The tumor cells were scattered and loosely arranged. Pleomorphism, anisonucleosis, and several unusual mitoses were present in significant amounts. The pseudo luminal spaces in the acantholytic type of penile SCC, also called the pseudo glandular or adenoid variant, are walled by a single layer of squamous cells (9). Primary cutaneous acantholytic SCC shows polygonal tumor cell arrays that resemble anastomosing cords and contain detached tumor cells (10). Therefore, this variant can be morphologically mistaken as angiosarcoma.

Angiosarcoma is rare tumor that must be distinguished from ASCC (11). Histopathologic ally ASCC can be erroneously identified as angiosarcoma. Albeit angiosarcoma and ASCC are quite different types of tumors, they share some histological characteristics and are defined by intratumoral spaces (3). An unclear red plaque with a bruise-like appearance indicates the onset of angiosarcoma. Areas of nodularity and quite big lesions are also possible outcomes. IHC can significantly contributes in the diagnosis. Epithelial markers like CK and EMA, which are negative for CD31 and factor VIII-related antigens, are positive in ASCC. Epithelial markers are negative and vascular markers are positive in angiosarcoma. Compared to ASCC, angiosarcoma has a poor prognosis (3) (12). In cases that have been difficult, immunohistochemistry has been useful. Pseudo glandular SCCs possess high grade foci, penetrate deeper anatomical structures, and are linked to increased rates of regional metastases and mortality (9).

On histology, ASCC is a master imposter. It is well recognized that the discohesive pattern it produces makes diagnosis challenging for the pathologist. As a result, many terms, including adenoid SCC, pseudo glandular SCC, SCC with gland-like characteristics, angiosarcoma-like SCC, and pseudo vascular adenoid SCC, are used to define this entity. The aggressive nature of ASCC sets it apart from typical SCC histologically as well as behaviorally (11)(13).

Conclusion

The scarcity of knowledge about this tumor presents a diagnostic dilemma to the pathologist because the total incidence of this tumor form is quite low. The diagnosis depends on careful examination of the morphological pattern. It needs to be distinguished from angiosarcoma.

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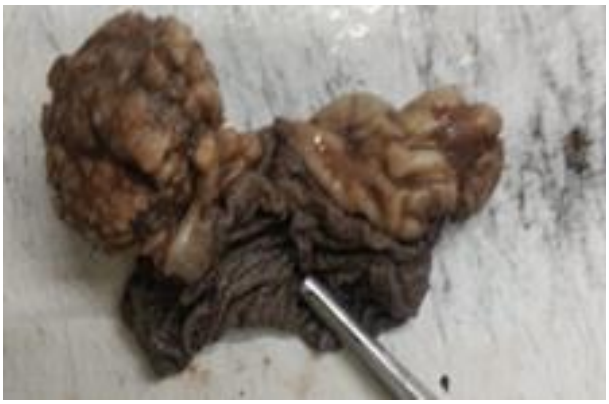
Legend Figures



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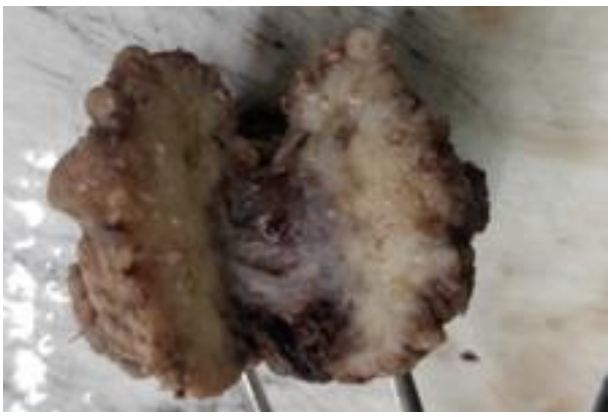

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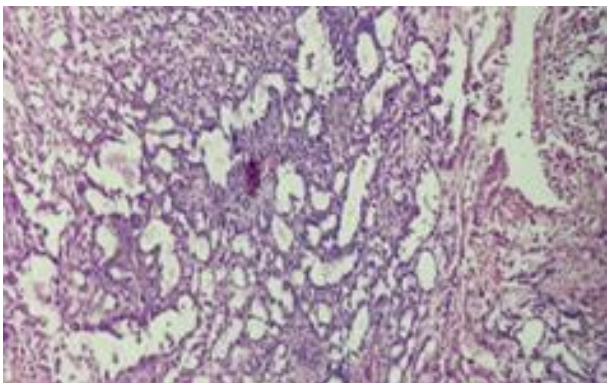

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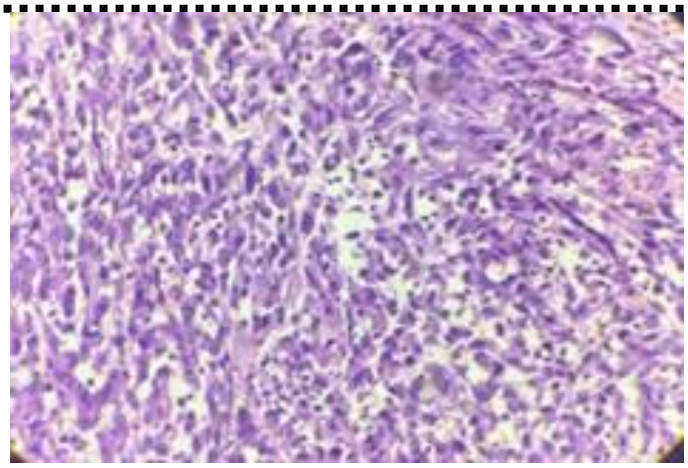

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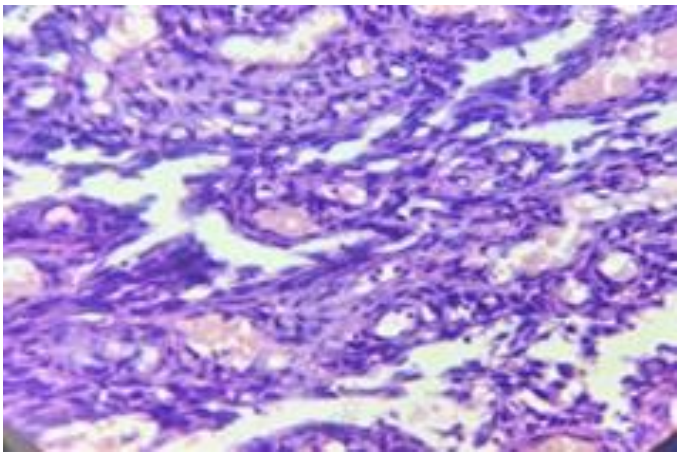

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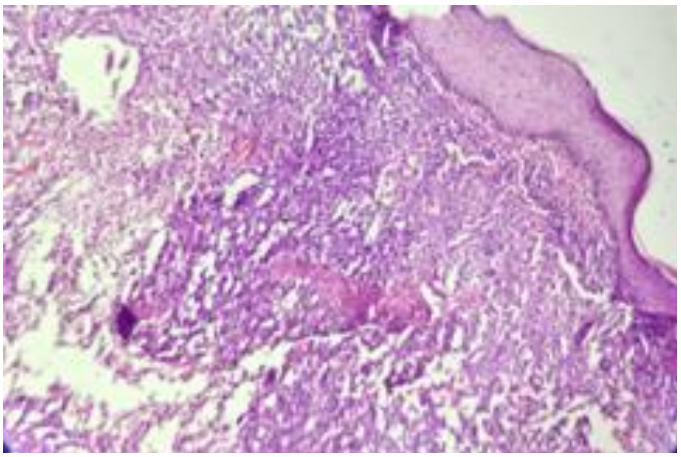

Figure 6: