

Case Report

Primary apocrine adenocarcinoma of scrotum suspected as urothelial carcinoma metastasis: A clinical and pathological dilemma

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Abstract

A 78-year-old man presented with an enlarging, tender mass in the scrotum separate to the testes. This was on the background of radical cystoprostatectomy, urethrectomy, and ileal conduit formation for high-grade urothelial carcinoma of the bladder invading submucosa 3 years prior. Examination revealed a 4 × 5 cm lesion, which was hard, fixed to the overlying skin and nodular to palpation. Ultrasound confirmed a solid mass in the scrotum extending into the perineum. Computerized tomography of the chest, abdomen, and pelvis revealed enlargement of inguinal lymph nodes but no other metastases. Complete resection of the scrotal lesion and selective removal of regional lymph nodes was performed. Rather than a cutaneous scrotal metastasis from the bladder urothelial carcinoma, histological examination suggested a primary apocrine adenocarcinoma of the scrotum. This case report explores the clinical and pathological features associated with both of these unusual differential diagnoses.

Key Words: Adenocarcinoma, apocrine glands, case reports, scrotum, urologic neoplasms

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INTRODUCTION

The usual sites of metastases from urothelial carcinoma of the bladder are lymph nodes, liver, lungs, and bone.^[1] Cutaneous metastases are amongst the most uncommon sites of metastases, with reported incidence of 2-8%, and are often related to muscle-invasive disease.^[1,2] Specifically, cutaneous metastases to the scrotum are extremely rare and to our knowledge there are only two reported cases.^[3,4]

Apocrine adenocarcinoma is an exceedingly rare malignant

neoplasm of the skin with no definitive clinical features.^[5-7] To date, there have been less than 50 reported cases of primary apocrine adenocarcinoma in the literature, with the first case reported in 1944.^[8] The disease has most commonly been reported in the axilla but other areas such as the anogenital region, scalp, upper lip, chest, nipple, and finger have also been described.^[5] In the English published literature, scrotal localization of the disease has only been reported once.^[9]

We report a patient with apocrine adenocarcinoma of the scrotum with regional lymph node involvement originally suspected as metastatic urothelial carcinoma of the bladder.

CASE REPORT

A 79-year-old man presented with an enlarging, tender mass in the scrotum growing over the previous month associated with discomfort. The patient denied any associated discharge, pruritus, weight loss, or any other constitutional symptoms.

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This was on the background of being regularly reviewed following radical cystoprostatectomy, urethrectomy, and ileal conduit formation 3 years prior to presentation for recurrent superficial T1G3 urothelial carcinoma throughout the bladder and anterior urethra lasting 3 years. Histology from this previous surgery revealed a completely excised high-grade papillary urothelial carcinoma of the bladder with possible invasion into submucosa but no lymphovascular invasion. The urethra was clear.

Examination revealed a hyperaemic 4 × 5 cm hard and nodular lesion in the scrotum, which was fixed to the overlying skin but separate to both testes. Bilateral inguinal lymphadenopathy was palpable. Ultrasound revealed the mass to be solid. Computerized tomography of the chest, abdomen, and pelvis confirmed bilateral inguinal lymphadenopathy and no other obvious metastases.

A core biopsy revealed atypical papillary and glandular structures indicating a neoplastic process, but was not enough to make a definitive diagnosis on its own.

Due to the increasing size and possibility of the mass fungating through the skin, a partial scrotoectomy with selective lymphadenectomy was performed [Figure 1].

Histopathology

The microscopic sections showed a malignant tumor expanding the dermis and extending into subcutaneous tissue. The tumor had papillary and micropapillary architecture, comprising arborising fibrovascular cores covered by tumor cells, along with infiltrative smaller tumor cell clusters surrounded by stromal retraction. There was striking nuclear pleomorphism with frequent mitotic figures, along with a variable amount of pale to clear cytoplasm with focal apical snout formation. In the overlying dermis, *in situ* carcinoma

was present in adnexal epithelium. The tumor cells showed strong positive immunostaining with CK20, EMA, CEA, and low molecular weight cytokeratin, with patchy positivity for CK7. There was no tumor cell immunostaining with ER, GCDFP, or PSA. Metastatic carcinoma consistent with the scrotal tumor was present in five regional lymph nodes [Figure 2].

DISCUSSION

Initial histological review was consistent with metastasis from urothelial primary. However, the original cystectomy specimen was reviewed for comparison. When compared, both specimens had a papillary architecture but the cystectomy specimen did not have a micropapillary component. Furthermore, there was a lack of lymphovascular invasion in the original urothelial carcinoma, which was completely excised. Other primary sites including upper gastrointestinal tract, pancreatobiliary, and lung were excluded clinically. The presence of both

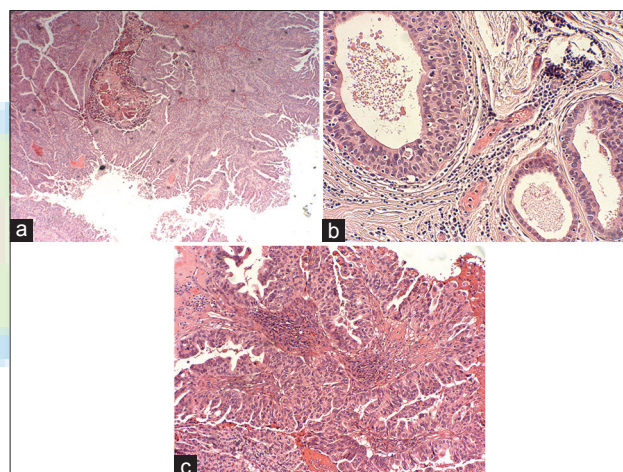


Figure 2: (a) Malignant tumor expanding dermis and extending into subcutaneous tissue. (b) *In situ* carcinoma was present in adnexal epithelium. (c) Papillary and micropapillary architecture

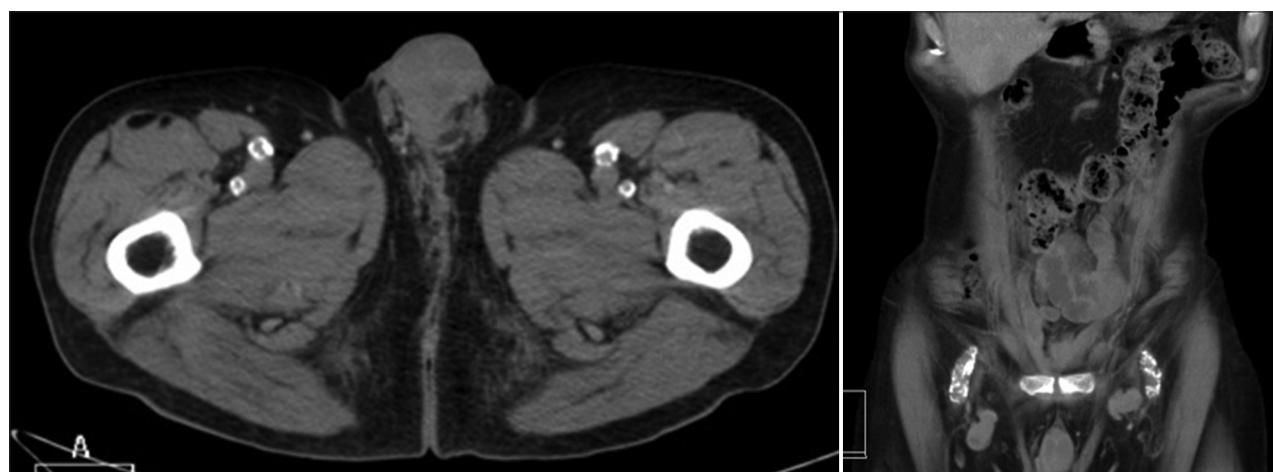


Figure 1: Computerized tomography shows scrotal mass and inguinal lymph nodes

apocrine differentiation as well as a component of *in situ* carcinoma in the scrotal tumor suggested a primary apocrine adenocarcinoma.

Only two cases of scrotal cutaneous metastasis from urothelial carcinoma primary have been reported. Breedlove *et al.*^[4] reported a patient with multiple slow-growing scrotal lesions; however, their patient's primary urothelial lesion was stage IV when diagnosed and the patient had simultaneous metastases to the inguinal, retroperitoneal, and mesenteric lymph nodes, as well as to the brain. Saito^[3] reported a patient with T1G2 urothelial carcinoma treated with resection and bladder infiltration of BCG. This patient presented 18 months later with a solitary cutaneous scrotal mass and did not have any recurrence in the bladder or other metastases. This patient became disease-free following local resection of the scrotal mass. Pathology revealed urothelial carcinoma, but a comparison between the scrotal specimen and the original specimen was not reported.

In our case, pathological comparison between the scrotal tumor and the urothelial carcinoma of the bladder was performed revealing apocrine adenocarcinoma as the diagnosis. Apocrine adenocarcinomas are a rare malignant sweat-gland neoplasm with apocrine differentiation. It may present as a single or multinodular, solid, or cystic mass and presentations in the literature have ranged from 1.5 to 8.0 cm in diameter.^[5-7] Pathologically, apocrine adenocarcinomas are very variable, though they are all nonencapsulated and may arise in the lower dermis and subcutaneous tissue.^[5] Nuclear pleomorphism and mitotic activity is variable. There are no specific immunohistochemical findings for apocrine carcinoma that are consistent throughout the literature. Initial metastasis is to regional lymph nodes and mortality rates have been reported to be between 24% to 40%.^[6-10] The treatment of choice is wide surgical excision whilst adjuvant radiotherapy may be beneficial in advanced cases.^[5] Chemotherapy with 5-fluorouracil, tamoxifen, trastuzumab, and capecitabine has been used but are generally regarded as ineffective.^[10]

Our patient was managed with partial scrotoectomy and selective lymphadenectomy as a palliative treatment. The risk of morbidity was deemed too high with complete inguinal lymph

node dissection or radiotherapy. This patient required a further partial scrotoectomy for recurrence at 8 months. At 16 months, the patient has continued to do well, showing relatively slow progression of disease.

To our knowledge, this is the first report of an apocrine adenocarcinoma of the scrotum initially suspected as cutaneous metastasis from urothelial carcinoma of the bladder. We believe that apocrine carcinoma should be considered in patients presenting with a cutaneous lesion in the scrotum, bearing in mind its rarity, and stress the importance in comparing specimens histologically when suspecting a metastasis.

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