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An interesting and unique pattern of two distinct coexisting cutaneous metastases of a transitional cell carcinoma

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Cutaneous metastases of transitional cell carcinoma (TCC) of the urinary system are extremely rare. Although approximately 5–20% of patients with superficial bladder cancer have vascular or lymphatic spread, development of cutaneous metastases is seen in only 0.2–2% of cases of bladder TCC.^{1,2}

A 49-year-old man presented with a 2-month history of persistent skin lesions over the lower abdomen and both thighs. The lesions were not associated with pain or tenderness. His medical history was remarkable for TCC of the left renal pelvis (stage II, T2N0M0) for which he had undergone a radical nephro-ureterectomy with bladder cuff excision 4 years previously. In the past year, right psoas muscle metastasis had developed, as proven by histological examination of a computed tomography-guided biopsy. To treat the recurrence of TCC, chemotherapy (gemcitabine and carboplatin) and radiotherapy were administered. Four months after these treatments, the skin rash developed over the lower abdomen and both thighs (Fig. 1a).

Physical examination revealed symmetrical, roughly linear, red to violaceous plaques. Both inguinal lymph nodes were not palpable. Clinical differential diagnoses included striae distensae, radiation dermatitis and skin metastasis of TCC. Owing to the diagnostic dilemma, a punch biopsy of the lesion was taken, which showed a metastatic, poorly differentiated carcinoma in the dermis along with tumour thrombi in the superficial dermal vessels. Immunohistochemical analysis indicated that those cells were positive for cytokeratin-7 (CK7).

Three months later, in addition to more-extensive spread of the skin rash, some verrucous papulonodular lesions resembling condyloma accuminata were found over the scrotum (Fig. 1b). An incisional biopsy was performed. Histologically, the findings closely simulated those of the earlier cutaneous TCC metastasis, comprising nests of CK7-positive tumour cells with a stromal reaction in the upper dermis. Both abdominal and scrotal cutaneous lesions showed positive staining for CD31, CD34 and

D2-40 over the endothelium cells around the tumour thrombi (Fig. 2).

The clinical appearance of the metastasis may mimic many common dermatological disorders. According to

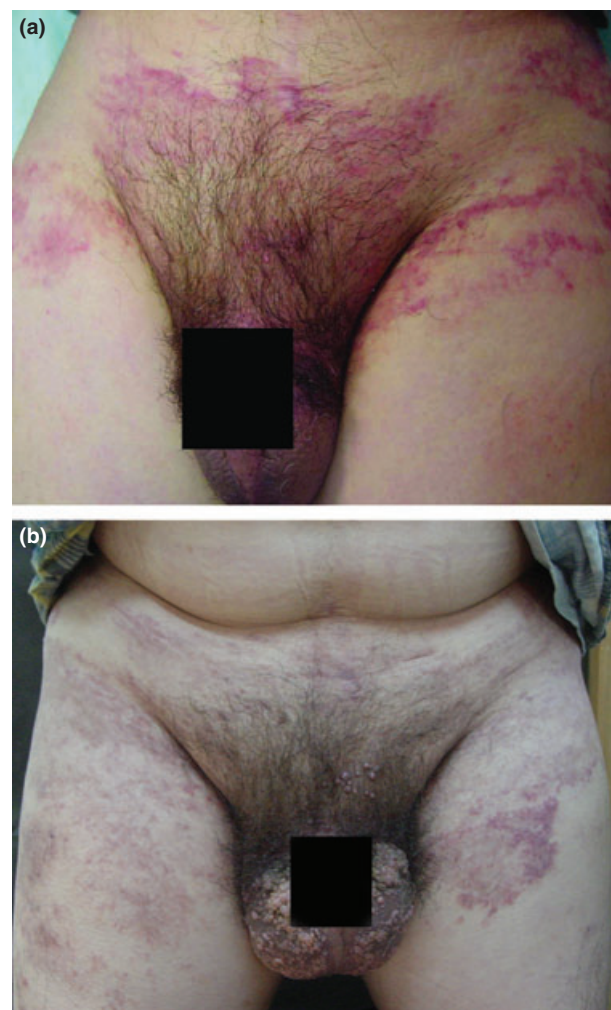


Figure 1 (a) Erythematous to violaceous plaques over the lower abdomen and both thighs. (b) Three months later, verrucous papulonodular lesions had developed over the scrotal region.

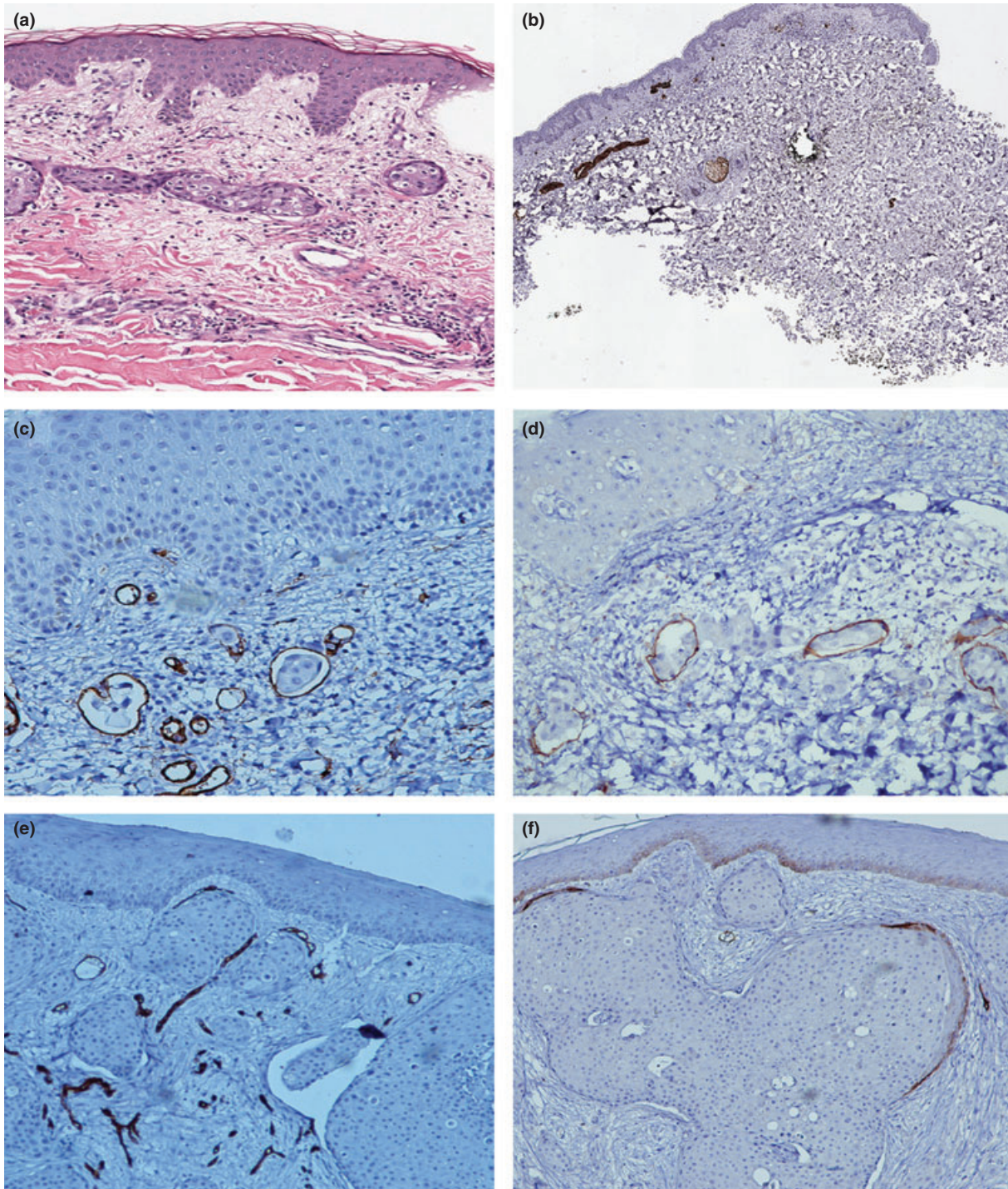


Figure 2 Metastatic poorly differentiated cells located in the superficial dermis interstitially and in the lumen of dermal vessels. The endothelial cells of dermal vessels showed positive staining for CD34 and D2-40 in specimens of both (a–d) abdomen and (e,f) scrotum. (a) Haematoxylin and eosin, original magnification $\times 100$; (b) CD7, original magnification $\times 40$; (c,e) CD34, original magnification (c) $\times 200$; (e) $\times 100$; (d,f) D2-40, original magnification (d) $\times 200$; (f) $\times 100$.

previous reports, lesions may present as zosteriform (dermatomal distribution), herpetiform or prurigo nodularis.³ Nodular or ulcerative lesions affecting the neck, chest, back and penis have also been reported. Several mechanisms, including vascular or lymphatic spread, have been proposed to explain cutaneous metastasis in TCC. In addition, there have been a few documented cases of TCC with cutaneous metastasis caused by iatrogenic implantation.⁴

Our patient was diagnosed with TCC originating from the renal pelvis, a relatively rare form. Subsequent right psoas muscle metastases, and cutaneous metastases over the lower abdomen and scrotum in two distinct clinical patterns were seen. Positive staining for CD31, CD34 and D2-40 suggested that both haematological and lymphatic TCC spread was involved in the formation in the cutaneous metastasis in the present case.

We speculate that the various metastatic features over the scrotum and lower abdomen might be attributed to differences in local immune or nonimmune defence mechanisms, lymphangiogenesis, local growth factors and skin texture.⁵ The overall prognosis is poor for patients with metastatic TCC, therefore clinicians should be alert against misdiagnosing it as more common and less serious dermatological diseases.

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