

## Cutaneous Abdominal Nodule with an Unusual Diagnosis: Role of Cytology in Early Diagnosis of Cutaneous Lesions

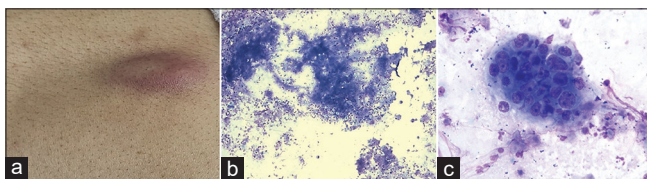
Dear Editor,

Metastatic skin disease is an uncommon presentation in patients with metastatic cancer, with the incidence being 0.2% to 10.4%.<sup>[1]</sup> It may be the presenting symptom of the disease or may manifest after months or years of the primary diagnosis. Breast cancer is the leading cause of cutaneous metastasis. Among genitourinary malignancies, the most common organ to present as cutaneous metastases is the kidney followed by the urinary bladder. Bladder cancer commonly metastasizes to regional lymph nodes, liver, lungs, and bones and rarely to the skin. Here, we present a case of a high-grade urothelial carcinoma presenting as an abdominal nodule as the first presenting sign, which was diagnosed following fine-needle aspiration cytology (FNAC) and immunocytochemistry (ICC).

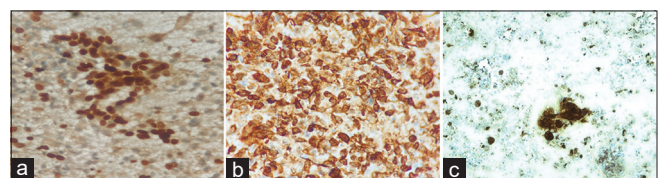
A 36-year-old male patient with no comorbidities presented with a skin nodule over the right side of the abdomen for 3–4 months. The nodule was 1 × 1 cm at the time of presentation and was slowly increasing in size [Figure 1a]. It was firm in consistency and fixed to the overlying skin. The overlying skin was erythematous. There was no itchiness or pain associated with the nodule. The patient was a chronic smoker and alcoholic. On investigations, the patient was found to be anemic (hemoglobin 9.3 gm/dL, red blood cell count 3.4 million/mm<sup>3</sup>) with normal liver function tests. Serum creatinine was slightly elevated (1.5 mg/dL). FNAC was performed from the nodule over the abdomen. The smears were cellular and showed malignant cells admixed with necrosis and inflammatory exudates [Figure 1b]. The tumor cells were arranged in clusters and sheets and were large, round to oval in shape. The cells showed moderate nuclear pleomorphism, irregular nuclear membranes, prominent single to multiple nucleoli, and moderate to abundant cytoplasm [Figure 1c]. No glandular differentiation or spindle cells were observed. There was no evidence of pigment or basement membrane material or keratin debris in the smears examined. ICC was performed, which showed positivity for GATA-3, CK 7,

and CK 20 [Figure 2a–c]. On the basis of morphological and ICC findings, the possibility of metastatic urothelial carcinoma was considered. A detailed history was taken for the possibility of a primary in the urinary bladder. The patient then gave a history of intermittent hematuria for the past 3–4 months. Although no palpable mass was noted on abdominal examination urine cytology revealed a few atypical cells (<8–10 cells) with high nuclear-cytoplasmic ratio, irregular nuclear membrane, and hyperchromatic nuclei. Because of low cellularity, a final diagnosis of suspicious high-grade urothelial carcinoma was given. Computerized tomography (CT) of the abdomen showed an enhancing mass in the right wall of the bladder. This was followed by transurethral resection of bladder tumor, which showed high-grade urothelial carcinoma. Radical cystectomy was done, which showed a tumor with similar morphology. A final diagnosis of high-grade urothelial carcinoma with cutaneous metastasis was made. The patient received chemotherapy; however, he later succumbed to the illness after 1 year.

Almost 5.3% of all malignancies have skin metastasis and bladder cancer accounts for 0.84% of these cases.<sup>[2]</sup> It is seen mostly in old age and usually presents as single or multiple nodules, papules, pustules, or infiltrative plaque. These cutaneous lesions have a variable appearance, are resistant to therapies, and signify a dismal prognosis. Metastasis of urothelial carcinoma is directly related to the depth of penetration of the bladder wall, tumor grade, and tumor size. Cutaneous metastases can occur due to direct tumor invasion, hematogenous, lymphatic spread, or as a result of iatrogenic implantation of tumor cell. Metastatic skin lesions from genitourinary malignancies are reported to be located on the head and neck, trunk, abdomen, suprapubic region, and occasionally on scrotal skin.<sup>[3]</sup> The gross appearance of cutaneous metastasis is not distinctive and may mimic common dermatologic disorders such as cutaneous horn, pyogenic granulomas, or malignant melanomas. The diagnosis is often delayed by months due to non-specific topical therapies, especially in rural areas. There are only a limited number of published cases of cutaneous metastasis of urothelial carcinoma.



**Figure 1:** (a) Clinical image of the abdominal nodule. (b) Cellular smear with a cluster of malignant cells admixed with necrosis and inflammatory exudates (Giemsa, 40×). (c) Large, round to oval cells, irregular nuclear membrane, prominent nucleoli with moderate-to-abundant cytoplasm (Giemsa 400×)



**Figure 2:** Immunocytochemistry: GATA-3 positive (200×). (b) Cytokeratin 7-positive (200×). (c) Cytokeratin 20-positive (100×)

Chang *et al.*,<sup>[4]</sup> in their retrospective study of 911 bladder and ureter cancer patients, found only two patients who developed cutaneous metastases. Although the definite diagnosis requires histopathological examination, in our case the same was made by cytological evaluation alone. Smoking is a prime risk factor as it leads to 50% of the incidence of bladder cancer.<sup>[5]</sup> Andrew *et al.*<sup>[6]</sup> in their study, showed that around 51% of bladder cancer patients had a previous history of smoking. Fine needle aspiration is a rapid and reliable technique; helpful in differentiating between primary malignancies of skin and appendages and secondary metastases. FNAC followed by ICC done in this case proved helpful in the early diagnosis of the case. The use of local excision, radiotherapy, chemotherapy, or combination therapy has been reported in many studies.<sup>[7]</sup> Due to poor prognosis, the treatment options are quite limited and primarily supportive in nature. Cutaneous metastasis from primary urothelial carcinoma of the bladder is a sign of advanced disease and has a dismal outcome with median survival of less than 12 months.<sup>[8]</sup>

Cutaneous metastasis can be the initial presentation of malignant disease; thus requires a high index of suspicion. The present case highlights the importance of FNAC and ICC in the prompt diagnosis of such entities.

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### Declaration of patient consent

The authors certify that they have obtained the appropriate consent from the patient. The patient has given his consent for the images and other clinical information to be reported in the journal. The patient understands that the name and initials will not be published.

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### Conflicts of interest

There are no conflicts of interest.

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