

¹⁸F-Fluorodeoxyglucose Positron Emission Tomography–Computed Tomography in the Evaluation of Unusual Cutaneous Manifestation of Carcinoma Urinary Bladder

Abstract

Bladder cancer is one of the most common malignancies of the urinary tract. Cutaneous metastasis of bladder carcinoma is extremely rare with a limited number of cases, resulting mainly from iatrogenic seeding. Here, we present scan findings of cutaneous metastasis in a known case of carcinoma urinary bladder. The ¹⁸F FDG PET/CT scan revealed FDG avid nodular thickening of the skin and sub-cutaneous tissue with ulcerations involving anterior pelvic wall, walls of the scrotum and the base of the penis. Histopathology confirmed the diagnosis of cutaneous and subcutaneous metastasis.

Keywords: ¹⁸F-fluorodeoxyglucose positron emission tomography–computed tomography scan, carcinoma urinary bladder, cutaneous metastasis

A 62-year-old male patient, a known case of metastatic carcinoma urinary bladder with multiple skeletal metastases, posttransurethral resection of bladder tumor, radiotherapy to pelvis, and multiple cycles of chemotherapy, was referred for ¹⁸F-fluorodeoxyglucose positron emission tomography–computed tomography (¹⁸F-FDG PET-CT) scan. MIP [Figure 1a] image of the whole-body ¹⁸F-FDG PET/CT scan showed multiple FDG avid lesions. The corresponding axial images showed multiple mildly FDG avid and non-FDG avid osteolytic skeletal lesions, which showed no significant interval change as compared to previous scan. FDG avid expansile osteolytic lesion with associated soft tissue component [Figure 1b-d] localized in the right 11th rib posteriorly and FDG avid nodular thickening of the cutaneous and subcutaneous tissue with ulcerations involving anterior pelvic wall, walls of the scrotum, and the base of the penis [Figure 1e-j] were the new findings in the scan. The FDG avid cutaneous and subcutaneous lesions were suspicious for metastasis, with differential diagnosis being radiation-induced ulcer in view of history of the radiotherapy to the pelvic region. Histopathology from punch biopsy of the ulcerative lesion from the base of penis demonstrated features of nuclear atypia and lymphovascular emboli, confirming

the diagnosis of dermal carcinoma deposit from the primary urinary bladder cancer.

Bladder cancer is one of the most common malignancies of the urinary tract. It is the fourth most common cancer in males and the tenth most common cancer in females. Urinary bladder cancer occurs three to four times more frequently in men than in women.^[1] Urothelial carcinoma accounts for 90% of cases of bladder cancer in Western countries, and squamous cell carcinoma is the most common bladder cancer in Eastern Africa and the Middle East, where schistosomiasis is prevalent.^[2] Cutaneous metastasis of bladder carcinoma is extremely rare with a limited number of cases, resulting mainly from iatrogenic seeding reported to date.^[3] Otherwise, primary cutaneous metastasis of transitional cell carcinoma is accepted as the late manifestation of systemic spread.^[4,5] The incidence is reported to be <1% and ranges from 0.18% to 2% for cancer of the urinary bladder.^[6] The usefulness of ¹⁸F FDG-PET CT in the evaluation of bladder cancer is limited to the evaluation of distant metastases.^[7,8] This is due to the reason that the interpretation of ¹⁸F-FDG PET images is difficult because of urinary excretion of this radiotracer, which accumulates in the urinary system and may mask pathologic

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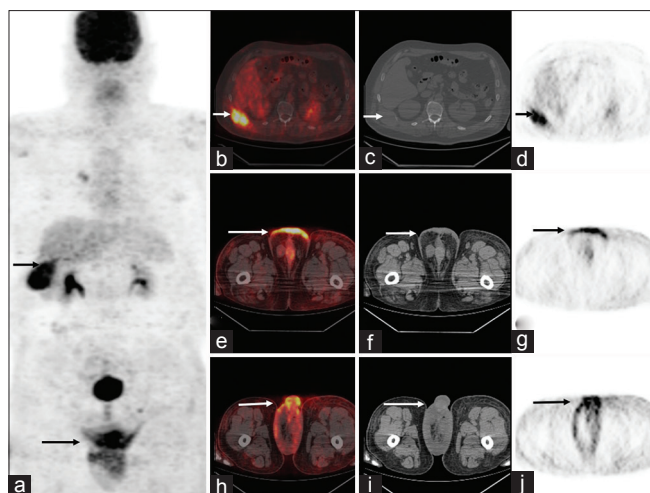


Figure 1: MIP (a) of the whole-body ^{18}F -fluorodeoxyglucose positron emission tomography-computed tomography scan showing multiple metastatic lesions. The corresponding axial fused positron emission tomography-computed tomography (b), computed tomography (c), and positron emission tomography (d) images showing fluorodeoxyglucose avid expansile osteolytic lesion in right 11th rib. Axial fused positron emission tomography-computed tomography, computed tomography, and positron emission tomography (e-j) images showing fluorodeoxyglucose uptake in the nodular thickening of the skin and subcutaneous tissue with ulcerations involving the walls of scrotum, base of the penis, and anterior pelvic wall

deposits in malignant lesions. According to our knowledge, few case series of cutaneous metastasis from visceral organs^[9] and very few case reports of cutaneous metastasis from carcinoma urinary bladder were reported in the literature. The first recorded case of cutaneous metastasis from carcinoma urinary bladder was in 1909. The latest case of cutaneous metastasis from carcinoma urinary bladder was reported in 2015.^[10]

Here, we report an interesting case of rare findings of cutaneous metastasis involving anterior pelvic wall, walls of the scrotum, and base of the penis, diagnosed after 8 years of diagnosis of primary urinary bladder carcinoma.

Declaration of patient consent

The authors certify that they have obtained all appropriate

patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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