CASE REPORT

Cutaneous metastasis as an initial presentation of prostate cancer: A case of long-term survival without a definitive treatment

Kefas Mari Mbaya[1], Abubakar Farate[2], Hassan Mohammed Dogo[3], Abba Bukar Zarami[4], Chubado Tahir[1]

ABSTRACT

Background: Carcinoma of the prostate is the most common cancer in Nigerian men but skin metastasis is infrequently encountered. Cutaneous metastasis is associated with poor prognosis and most patients rarely survive for more than one year from the time of appearance of skin lesion. **Case summary:** We report a case of an 80-year-old man who presented with a history of recurrent nodular lesion of the right thigh for five years which later became ulcerated. The skin lesion was treated with wide local excision and split-thickness skin grafting. The patient refused bilateral orchidectomy; he was then treated with androgen deprivation therapy (ADT). The skin graft healed well after one month of surgery. Unfortunately, the patient died six months after the commencement of treatment from lung and liver metastases.

Keywords: Prostate cancer, Cutaneous metastasis, Long-term survival, Skin graft

[1]Plastic Surgery Unit, Department of Surgery, University of Maiduguri, Maiduguri, Nigeria
[2]Department of Radiology, University of Maiduguri, Maiduguri, Nigeria
[3]Urology Unit, Department of Surgery, University of Maiduguri, Maiduguri, Nigeria
[4]Department of Histopathology, University of Maiduguri, Maiduguri, Nigeria

Corresponding Author:

Abubakar Farate
Department of Radiology, University of Maiduguri, Maiduguri, Nigeria
Email: abu.farati@gmail.com
Mobile phone: +2348033581675.

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Introduction

A wide range of presentations of skin metastasis from primary internal organ cancers has been described in the literature and often posed diagnostic challenges for managing clinicians.[1] Metastasis to the skin is an intricate process in which tumour cells acquire certain natural or biological properties that enable them to invade it from the primary tumour.[1] The cancer cells spread by lymphatic channels, through the bloodstream or both and extravasate from the circulation into the skin dermis to multiply at the secondary site.[2]

It is reported that cutaneous metastasis is a rare phenomenon met in clinical practice with a frequency of 0.7–9% for all cancer secondaries.[3] Although prostate cancer is the most common cancer in black African men, it seldom presents with skin metastasis. Based on previous literature, it presents with skin metastasis in only 0.06–0.3%.[4]

Even though cutaneous metastasis is a rare presentation of prostate cancer, it remains an important diagnostic consideration in patients with unrecognised advanced disease. It should be considered in cases of fast-growing skin nodules, especially when associated with symptoms of prostate disease. The predilection sites of metastasis from prostate cancer are bones, lungs, liver, and adrenal gland.[5]

When cutaneous metastasis occurs, it usually presents as a nodular lesion at the suprapubic area or anterior part of the thigh and in most cases, patients present

with initial symptoms of prostate disease and diagnosis of prostate cancer is often established. We report a case of an 80-year-old man with prostate cancer whose initial primary presentation was metastasis to the skin and survived the disease 5 years after the appearance of the secondary skin lesion without definitive interventions.

Case Summary

An 80-year-old man presented with a recurrent nodule on the right thigh for 5 years which was excised several times at local clinics, but the excised tissue was never examined histologically. The mass became ulcerated and painful associated with difficulty in walking that forced the patient to seek better medical attention at a tertiary hospital. There were no lower urinary tract symptoms, haematuria, or low back pain. There was no family history of prostate cancer. On physical examination, the patient was chronically ill-looking and wasted. Examination of the mass revealed a fungating ulcer on the anterior aspect of the proximal right thigh, measuring 10 cm x 8 cm (Figure 1). On rectal examination, the prostate was enlarged, hard and nodular.

A contrast-enhanced computed tomography (CT) scan of the pelvis and proximal thigh revealed a grossly enlarged prostate gland compressing the urinary bladder (Figure 2a) and an enhancing fungating mass in the anterior aspect of the right thigh associated with multiple enhancing inguinal lymph nodes enlargement of varying sizes (Figure 2b—d). Bone scintigraphy was not performed, as it was unavailable in the hospital. A diagnostic prostate biopsy (12 cores) revealed a high-grade (Gleason grade 5 + 4) adenocarcinoma on hematoxylin and eosin section (Figure 3a) and biopsy of the skin lesion confirmed metastatic prostatic adenocarcinoma (Figure 3b).

The prostate adenocarcinoma with skin metastasis was confirmed after diagnostic biopsy, and treatment options were explained and discussed with the patient. He rejected bilateral orchidectomy. However, for the skin lesion, we performed a wide local excision and split-thickness skin grafting. He was commenced on androgen deprivation therapy (ADT) before his discharge. The skin graft healed very well roughly a month after the surgery (Figure 4). Three months later, he presented with features of distance metastasis to the lungs and liver. He died six months from the commencement of treatment.

Figure 1: Photograph of the skin lesion on the anterior aspect of the proximal right thigh before excision and skin grafting

Figure 2: (a) axial CT of the pelvis showing enlarged prostate gland compressing the urinary bladder (arrow), (b) axial and (c) coronal reformatted CT showing enhancing mass with a lobulated outline in the anterior aspect of the proximal right thigh (arrows). (d) axial CT showing enhancing enlarged inguinal lymph node (arrow)

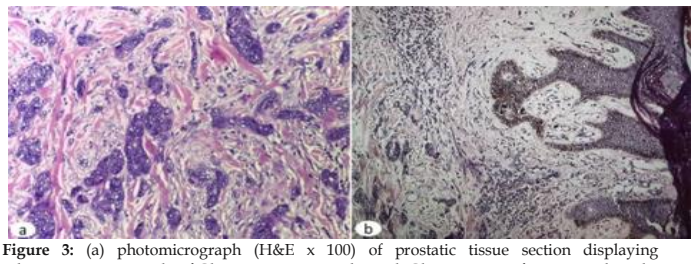

Figure 3: (a) photomicrograph (H&E x 100) of prostatic tissue section displaying adenocarcinoma mainly of Gleason pattern 5 and 4 with Gleason score of 5 +4, invading the fibromuscular stroma and (b) is a photomicrograph (H&E x 100) of skin tissue showing metastatic prostatic adenocarcinoma disposed of in nests' cords and strands invading the dermis. Focal areas of host immune response are noted

Figure 4: Photograph of the skin lesion one month after excision and skin grafting

Discussion

Skin metastasis from cancers is usually an indicator of advanced disease and is often associated with poor prognosis and patients rarely survive for more than one year from the time of diagnosis.[6-8] Therefore, skin lesions in a patient with a confirmed primary malignancy, regardless of the disease-free interval and even at remote locations, should be regarded as metastasis until proven otherwise and that lesion should be biopsied.

The prostate cancer diagnosis has increased since the acceptance of prostate-specific antigen (PSA) as a screening test.[9] Thus, early detection of prostate cancer when the disease is still restricted to the gland is possible and the treatment is aimed at cure with resultant improvement in prognosis.[7] However, in most African countries including Nigeria, prostate cancer is frequently diagnosed at the advanced stage of the disease,[8] because of lack of awareness and partly due to the cost of a screening test or general cost of healthcare services.

The most common sites of metastasis are the loco-regional pelvic lymph nodes, bone, liver, lung, brain and adrenal gland. In general, metastasis to the skin is rare for all cancers and accounts for 5.3% of metastatic spots.[10] Of all the urologic malignancies, prostate cancer is the third important cause of cutaneous metastasis after the kidney and the urinary bladder.[10] The genitalia and suprapubic region are the most frequent sites of cutaneous metastasis from cancer of the prostate.[11] The other sites of prostate cancer skin metastasis that have been identified are the head, neck, chest and thigh.[11,12] The mechanism by which prostate cancer metastasizes to the skin is poorly understood; however, direct extension to the skin of genitalia, lymphatic and hematogenous spread or a combination of these three modes have all been hypothesized.[3]

From the clinical point of view, cutaneous metastasis may mimic other skin malignant skin conditions, such as basal cell carcinoma and benign disease including cellulitis, sebaceous cysts, and zosteriform lesions resulting in a delay in the diagnosis.[13] The diagnosis may be straightforward in patients with histopathologically proven prostatic cancer and with known advanced or disseminated disease. Our patient had no prior complaints of urinary symptoms that were suggestive of prostate disease. The final diagnosis—adenocarcinoma of the prostate with cutaneous metastasis to the thigh was determined by histopathologic analyses of biopsied prostate and skin tissues.

The treatment options for cutaneous metastasis are generally palliative and include excision of the nodule or mass, radiation therapy, and intra-lesional injection of chemotherapeutic agents.[3] The choice of treatment should be cautiously selected and used on a case-by-case basis. It is important to note that treatment of the primary prostate cancer for instance with ADT used for a non-organ confined disease may also result in regression of cutaneous secondary and drastic reduction in the level of circulating PSA.[14] The appearance of skin metastasis from genitourinary malignancies is associated with an unfavourable prognosis with an average survival of approximately seven months from the time of the first presentation and within one year for prostate cancer.[4,6-8] In contrast, our patient had a recurrent nodule for almost five years with several excisions until he presented to our facility where both prostate and thigh lesion biopsied confirmed the primary and metastatic adenocarcinoma of the prostate, respectively. Our case also presents a rare case of long term-survival from prostate cancer after the appearance of cutaneous metastasis without a definitive intervention. However, he died six months after confirmation of the diagnosis. The patient would have had a better chance of survival if he had presented earlier.

Conclusions

The case described here is cutaneous metastasis as an initial primary presentation of prostate adenocarcinoma and the patient survived for five

years after the appearance of skin lesion. Carcinoma of the prostate may metastasize to the skin and the clinical appearance may mimic other common dermatologic disorders. The diagnosis requires a high index of suspicion followed by screening serum PSA and biopsy of the skin lesion and prostate. Early diagnosis and prompt institution of appropriate treatment may result in improved patient survival and quality of life.

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