

Prostate Cancer with Cutaneous Abdominal Wall Metastasis: A Case Report

Bandyopadhyay S*, Alluri U, Warfield AT and El-Modir A

Department of Oncology, Queen Elizabeth Hospital, Birmingham, UK

Abstract

Prostate cancer (PCa) is the most common malignancy in men in Europe and is the second most common cause of cancer death in this population. Metastatic disease typically involves bones and rarely affects skin (<1%). Cutaneous metastases are associated with poor prognosis. We report a case of metastatic prostate cancer presenting with abdominal wall lesions. Histology and specifically immunohistochemistry established the diagnosis. Patient was treated with palliative radiotherapy.

Keywords: Prostate carcinoma; Metastases; Cutaneous

Background

Prostatic adenocarcinoma is the most common urological malignancy in men. Mechanisms of spread include direct invasion of peri-prostatic structures; lymphatic spread to local and pelvic lymph nodes; and haematologic spread to bone, liver, lung, pleura and adrenals. Cutaneous metastatic spread is relatively rare; with very few reported cases documenting spread to the abdominal wall skin. Cutaneous metastasis is regarded to be a sign of disseminated disease and poor prognosis.

Case Report

A 61-year-old Caucasian male with a past medical history of systemic hypertension and insulin dependent diabetes mellitus was investigated for abnormal liver function tests (LFTs) and found to have locally advanced and metastatic prostate cancer involving the trigone of the bladder and pelvic lymph nodes (T4 N1 M0). Histology suggested a Gleason 4+4=8 disease. He became castrate resistant within two years, with rapid serum prostate specific antigen (PSA) rise and disease progression with worsening lymphadenopathy in the pelvis and new retroperitoneal and inguinal lymphadenopathy. He was treated with Docetaxel and then Abiraterone on further progression.

He responded initially but later developed multiple lower abdominal cutaneous lesions bilaterally (Figure 1). Histological examination of



Figure 1: Low power view of the skin biopsy depicting a normally maturing, keratotic epidermis, which is undermined by substantially solid islands of poorly differentiated malignant cells occupying reticular dermis and subcutis. The papillary dermis is largely spared in this field. Cutaneous adnexae are not present. There is virtually no accompanying inflammatory cell infiltrate and minimal desmoplastic response (haematoxylin & eosin, original magnification x 4).

these lesions confirmed metastatic adenocarcinoma of prostate (Figure 2). He received palliative radiotherapy to the skin metastases. His skin metastases responded well to the radiotherapy with a follow up period of one year.

Pathological (or) Immunohistochemical findings

The skin biopsy bore a normally maturing, keratotic epidermis. The papillary dermis was largely normal. The reticular dermis and subcutis were percolated by part of a poorly differentiated adenocarcinoma deposit disposed as irregular well demarcated islands of pleomorphic large cells (Figure 1) displaying rare rudimentary tubulo-glandular lumina. Cutaneous adnexae are not present. A few cells showed faintly micro-vacuolated cytoplasm (Figure 2). There was no significant inflammatory cell infiltrate and minimal stromal response. The individual tumour cells co-expressed avid prostate-specific antigen (Figures 3A and 3B) and prostate-specific acid phosphatase immunoreactivity. Immunostaining

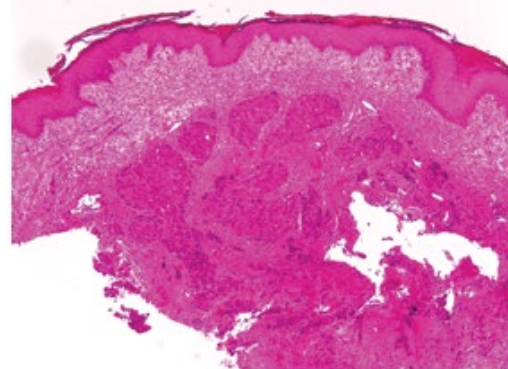


Figure 2: Higher magnification showing two adjacent tumour islands composed of pleomorphic large cells possessing abundant, focally micro-vacuolated cytoplasm. Occasional empty primitive tubulo-glandular lumina are present. There are scattered mitoses, including abnormal forms (haematoxylin & eosin, original magnification x 20).

*Corresponding author: Bandyopadhyay S, Department of Oncology, Queen Elizabeth Hospital, Birmingham, UK, Tel: + 07710263443; E-mail: seheli.bandyopadhyay@nhs.net

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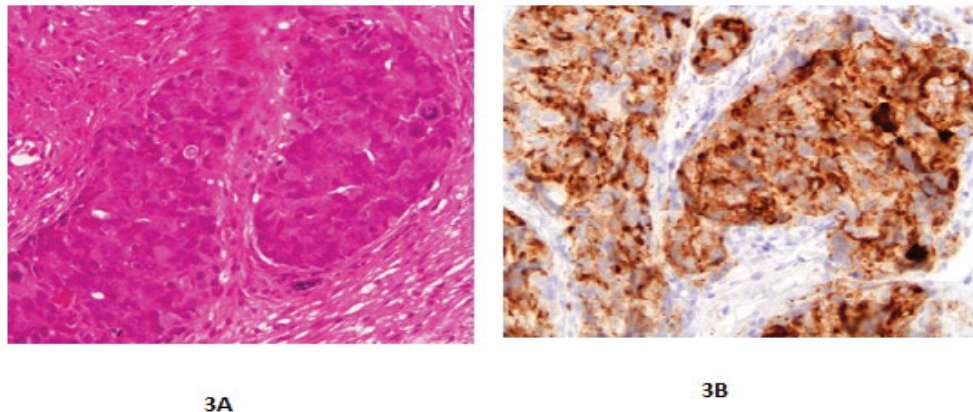


Figure 3 (A and B): Identical magnification to figure 2 illustrating intense brown cytoplasmic immunopositivity for prostate specific antigen highlighting all the tumour cells (prostate specific antigen immuno-peroxidase, original magnification x 20).

for cytokeratins 5, 7, 14 and 20, CD56, thyroid transcription factor-1, p63 protein, S100 protein, desmin and vimentin was negative. That there was no previous specimen from the patient in the local archives for comparison and/or review notwithstanding, in the present context these morphological and immunophenotypic findings are indicative of metastatic poorly differentiated prostatic adenocarcinoma.

Discussion

Between 2 and 9 percent of the malignancies metastasise to skin [1-5], most common being breast, lung, kidneys, stomach, uterus, and colon. Despite the prevalence of prostatic adenocarcinoma, it accounts for a very low proportion (<1%) of cutaneous metastases and they are usually asymptomatic, most commonly involving the lower abdomen, genitalia, and thighs [6-12]. Head is not an uncommon site. Cutaneous metastases from prostate carcinoma are usually asymptomatic and may occur at single or multiple sites [9]. They occur in papular or nodular form (as in our patient) and ulceration is not common. Lymphatic and haematogenous spread [10,11] was suggested as the possible mechanism.

Histopathologically, cutaneous metastases of visceral primary origin are typically centered upon the dermis often with subcutaneous extension. The epidermis is usually intact and there is rarely epidermotropism (pagetoid spread). The papillary dermis is commonly spared or compressed (grenz zone). Peripheral lympho-vascular invasion is sometimes seen and may be extensive. There is often remarkably little inflammatory infiltrate and/or stromal response in contrast to many primary cutaneous cancers. Whilst the diagnosis may be clinically obvious, the combination of histomorphology and immunohistochemical profiling is generally either corroborative or helpful in focusing the differential diagnosis of a metastasis of unknown or occult derivation.

Of the few cases of cutaneous metastasis cases described, there is wide variation in site, but almost all cases suggest these deposits to be a

very poor prognostic indicator and sign of widely disseminated disease. The outcome of this patient's case seems to support this trend, with less than two months from cutaneous metastasis tissue diagnosis to death.

Conclusion

Cutaneous spread is a poor prognostic indicator of metastatic prostate cancer. Any new skin lesion should be considered as a metastatic deposit until proved otherwise. Dermatological opinion should be sought once malignant disease has been ruled out.

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