Cutaneous Metastasis Leading to the Diagnosis of Carcinoma of the Prostate: A Rare Case Report and Review of Literature

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Abstract
Prostate adenocarcinoma is a common urologic malignant neoplasm in man. Distant cutaneous metastases (CMs) of prostate carcinoma are extremely rare with a reported incidence of 0.36% and usually they occur late. Clinically, cutaneous metastasis of prostate carcinoma can mimic other skin conditions such as cellulitis, sebaceous cyst, zosteriform lesions, telangectasias, and more, resulting in a poor recognition. Few cases of true cutaneous metastatic prostate carcinoma exist in the literature. We present a case, where the first sign of carcinoma of the prostate was CM over the anterior abdominal wall. Radiological and histopathological confirmation pointed to a diagnosis of carcinoma of the prostate. The patient was treated with orchidectomy and was started on bicalutamide. After 1 month of bicalutamide therapy there was subjective decrease in the size of the metastasis. A high index of suspicion is required while evaluating the different differential diagnoses of this entity particularly in elderly patients.

Key Words: Adenocarcinoma, cutaneous metastasis, prostate

Introduction
Adenocarcinoma of the prostate is a commonly diagnosed nondermatological malignancy among men and a leading cause of cancer-related mortality, second only to lung cancer. It constitutes 5.3% of metastatic sites for all cancers.[1] Common malignancies that give rise to cutaneous metastases (CMs) are carcinoma of the lung and colon in males and carcinoma of the colon and ovary in females. In prostate cancer, CM is very rare with a published incidence of 0.36%.[2] When it occurs, it usually presents as nodules in the inguinal region and anterior thigh.[3] CMs can also be inflammatory, fibrotic, or sclerodermoid, and symptomatically, can range from being asymptomatic to being ulcerative and painful. Here, we present a rare case where primary prostate cancer presented as a metastatic abdominal cutaneous lesion.

Case Report
A 65-year-old gentleman presented to us with complaints of a mass over the abdomen just above the umbilicus of 1 month duration. On further inquiry, he gave a history of difficulty in micturition with no urgency or precipitancy or hematuria. Systemic examinations were unremarkable excepting bulky prostate. On local examination of the anterior abdominal wall, a grayish cauliflower-shaped lesion of 2 cm in diameter was seen protruding from the epigastric region [Figure 1]. It was painless and firm-to-hard in consistency. On ultrasonogram, no abnormality other than a bulky prostate could be deciphered. Chest X-ray was within normal limits. On computed tomography (CT) of the thorax, abdomen, and pelvis, a 54 mm × 49 mm × 45 mm-sized heterogeneously enhancing lobulated lesion was noted exophytically arising from the anterior abdominal wall in between the epigastric region and the umbilicus [Figure 2]. The lesion involved skin and subcutaneous tissue. Notably, the prostate appeared heterogeneous and bulky, while the remainder of the CT examination was unremarkable. As a part of...
metastatic workup, serum markers were assayed including serum prostate-specific antigen (PSA), carinoembryonic antigen, and carbohydrate antigen 19.9. Of these, serum PSA was elevated (35 ng/ml), while the rest of the serum markers were within normal limits. Biopsy of the anterior abdominal wall mass was suggestive of metastatic adenocarcinoma [Figure 3]. Meanwhile, we went ahead with the prostate biopsy specimen which was suggestive of prostatic adenocarcinoma with a Gleason score of 8. Immunohistochemistry (IHC) of the anterior abdominal wall biopsy specimen was suggestive of CM from a prostate primary (IHC markers: P63 negative, CK7 and CK20 negative, and PSA positive). The sum of all findings supported the diagnosis of the abdominal wall CM as a manifestation of a prostatic primary carcinoma. As part of metastatic workup, ultrasonography of the abdomen and pelvis revealed no evidence of liver metastasis. A bone scan did not show any bony metastasis. The patient underwent bilateral orchidectomy after which he was started on bicalutamide. After 1 month of treatment there was subjective decrease in the size of his abdominal CM.

**Discussion**

Worldwide among men, prostate cancer is the second most common visceral cancer after lung cancer and the fifth most common cause of death. CMs from prostate carcinoma are usually asymptomatic and may occur at single or multiple sites. Prostate carcinoma is usually adenocarcinoma and has a high metastatic potential. It usually spreads to bones, liver, and lungs. Although bony metastases are very common, CMs are extremely rare. A literature review shows reports of 37 patients with CMs. In these patients, metastatic lesions from primary prostate cancer have been found in the inguinal region, umbilical region, chest, back, head, and face, and recurrent disease at a trocar site of a previous surgical intervention. In our case, metastatic lesion had appeared just above the umbilicus. Metastatic prostate cancer has a poor prognosis and the median survival time ranges from 1 to 3 years. The incidence of CMs from internal malignancies is quite low, varying from 4.5% to 9%. CMs usually appear as late event in the course of known neoplastic disease, but they may be the presenting sign of an unknown tumor, or the first manifestation of recurrence of a tumor considered to be in complete remission. Skin involvement as the first sign of cancer is rare and is reported in approximately 1% of patients with internal neoplasms and mostly with cancers of the lung, kidney, and ovary. Our patient presented with CM as a primary presentation of internal malignancy. The average duration of cutaneous lesions before diagnosis is longer in patients with CMs, revealing an internal neoplasm. Most CMs occur in a body region near the primary tumor.

The most common sites are the neck, the head, and the trunk. The common primary malignancies are lung and colon cancer in males and breast cancer in females. It is estimated that the primary tumor remains unknown in 4.4% of patients.
The mechanism of skin involvement is not well understood, but suggested routes include embolization of the vessels, dissemination via lymphatics, and spread through perineural lymphatics. Most CMs arise as nonspecific, painless, dermal, or subcutaneous nodules with an intact overlying epidermis. CMs must be distinguished from primary skin tumors. The clinical history is usually very helpful. CMs tend to grow quickly and are more commonly multiple. In contrast, the clinical history is much longer for primary adnexal tumors. Histopathologically, CMs are much more disorganized than primary tumors with dissection of collagen. They tend to involve the dermis and are rarely epidermotropic. Vascular invasion is more readily identified. These clinicopathological clues helped us to reach the diagnosis in the present case.

Our patient presented with CM to the anterior abdominal wall, and an extensive search for the primary source by various histopathological and radiological investigations pointed us to the CM as the presenting manifestation of prostate cancer. Cutaneous manifestations are associated with a poor prognosis because of the presumed systemic involvement required to develop such overt metastatic disease. The mean survival time after diagnosis of CM has been calculated at 7 months. Treatment for metastatic prostate cancer is palliative. Androgen deprivation therapy is the mainstay of therapy for metastatic prostate cancer. Several new agents have been introduced for the treatment of metastatic prostate cancer in the past two decades with excellent disease control and good patient tolerability. In view of skin metastasis being a manifestation of advanced disease at presentation and it being a rare manifestation, no treatment guidelines exist for such presentations. Various treatments have been tried without significant benefit.

Treatment options for CMs include local excision and intralesional chemotherapy or radiotherapy.

If the disease progresses and hormone refractory metastatic prostate cancer is diagnosed, alternative treatments include chemotherapy, immunotherapy with sipuleucel-T, androgen receptor antagonist drugs such as enzalutamide, and androgen synthesis inhibitors such as abiraterone.

Treatment for any metastatic prostate cancer initially involved androgen deprivation with either medical or surgical castration. Our patient underwent bilateral orchidectomy and was started on 50 mg bicalutamide once daily postoperatively.

Although rare, it is important to consider the possibility of prostate carcinoma metastasizing to the skin in patients presenting with cutaneous lesions. Though CMs most commonly occur from other organs as mentioned above, prostate carcinoma presenting with CM, a rare disease presentation, should be borne in mind, especially when common primary source is ruled out. This can be achieved by determining the histopathologic classification of the tumor and by immunohistochemical staining for PSA.

**Conclusion**

We present a rare pattern of prostatic adenocarcinoma metastatic to the skin. For the histo/dermatopathologist, it is important to recognize the plethora of various patterns displayed by CM of a prostatic adenocarcinoma. In addition, we must be aware of CM as the rare initial presentation of carcinoma of prostate.

**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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Nil.

**Conflicts of interest**

There are no conflicts of interest.

**What is new?**

Cutaneous presentation as the initial sign of carcinoma prostate is rare and very rarely being published. Also secondary deposit at a site affected in the present case is rarely reported.

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