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Penile Metastasis from Cancer of Prostate: A Case Report

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Abstract

Metastatic spread from the prostate to the penis is known to occur, though rare. A needle biopsy remains the most reliable diagnostic modality that allows for histological and immunological confirmation of metastatic spread, and evaluation of the extent of invasion. The mode of metastasis seems to be either by direct invasion, implantation, haematogenous or lymphatic spread. Treatment mainly remains palliative and improving quality of life in view of the poor prognosis and a 6-month mortality of 80%. We report a patient with castrate resistant prostate cancer who presented with obstructive voiding symptoms and reddish lesions on the glans. Biopsy proved it to be a metastasis from the prostate cancer.

Keywords: Metastasis • Prostate cancer • Palliative care

Introduction

Prostate cancer is a commonly diagnosed cancer in men especially in the West, and its incidence in India too is on the rise. It is also a leading cause of cancer-related deaths. Most prostate cancer-related deaths are due to advanced disease, which results from any combination of lymphatic, hematogenous, or contiguous local spread. Metastases from the prostate to the penis is a very rare phenomenon, and the prognosis in these patients is usually very poor. We report a case of a Castrate Resistant Prostate Cancer (CRPC) who presented with very poor flow, hard elevated reddish areas over the glans and raised renal parameters [1,2].

Case Description

A 68-year-old male presented with very poor flow. He was a known case of metastatic prostate cancer having undergone bilateral orchidectomy followed by treatment with bicalutamide since February 2019. His initial serum prostate specific antigen (PSA) was 51 ng/ml and all 12 cores of transrectal ultrasound guided biopsy done in January 2019 were positive for prostate cancer with Gleason score of 5+4. Each core showed a tumour burden ranging from 20%-80%. Perineural invasion was seen in 11 of the 12 cores. Computed tomography of the pelvis done then showed a locally advanced disease with enlarged pelvic lymph nodes. Radioisotope bone scan revealed increased activity in the thoraco-lumbar vertebrae suggestive of metastasis. In view of advanced disease and enlarged lymph nodes, the patient was then offered androgen deprivation therapy (ADT). His serum PSA decreased to 1.3 ng/ml and remained around the same value till the end of September 2019 [3].

The patient missed his follow-up during the early months of 2020 due to the COVID-19 pandemic. Presented to the Urologic-Oncology services in early May 2020 with symptoms of very poor flow and generalised ill being. Examination of the penis revealed two hard elevated reddish areas on the glans about 1 cm in diameter (Figure 1). The external urethral meatus could not be visualized properly and the glans was tender to touch. The whole glans was indurated and the rest of penis appeared normal. Digital examination

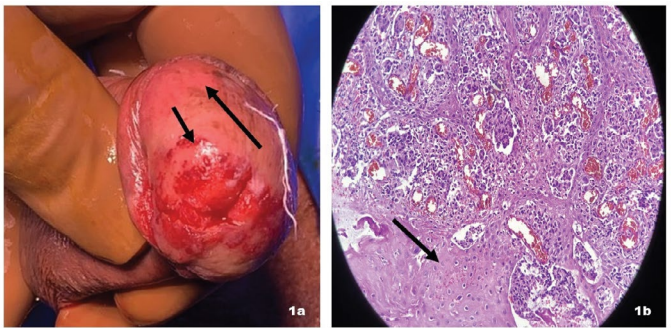

Figure 1. Shows reddish elevated lesions over the glans measuring 1cm in diameter (a)**.** Histopathology shows metastasis from the prostate (100x) to the penis. Microphotograph shows squamous epithelium at a focus (left lower) and shows neoplastic cells in clusters. Lymphovascular emboli are seen (b).

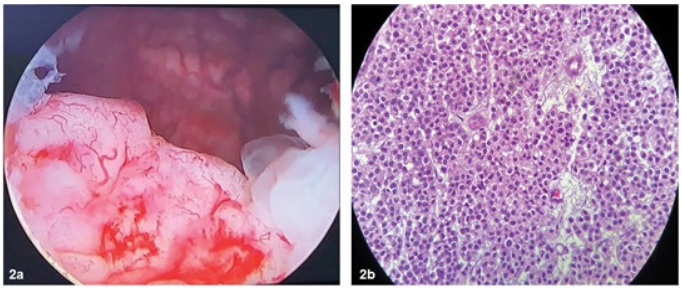

Figure 2. Cystoscopic appearance of Bladder neck showing a very vascular prostatic lobe of resected (a). Histopathology prostatic chips shows (400x). malignant cells with prominent nucleoli in almost all of the cells. Gleason score 5+5 (b).

of the prostate revealed an enlarged hard prostate. Uroflowmetry revealed a maximum flow of 2.3 ml/sec. Serum creatinine was 6.4% mg and serum PSA were 51 ng/ml. Ultrasound of the pelvis and abdomen showed bilateral hydronephro ureterosis, a moderately enlarged prostate and significant residual urine [4].

The patient was taken up for cystoscopy. The external urethral meatus was identified, and dilated using Hegars dilators up to 30 Fr. Cystoscopy revealed a trilobar enlargement of prostate with invasion of bladder neck by the cancer (Figure 2). A channel resection of the prostate was done to permit adequate voiding. A needle biopsy of the penile lesion was performed and sent for histo-pathological examination, which showed metastases from the prostate (Figure 1). Histopathological examination of prostate chips revealed cancer of the prostate, Gleasons score 5+5 (Figure 2). Patient was started on Docetaxel based chemotherapy (Figure 3) [5].

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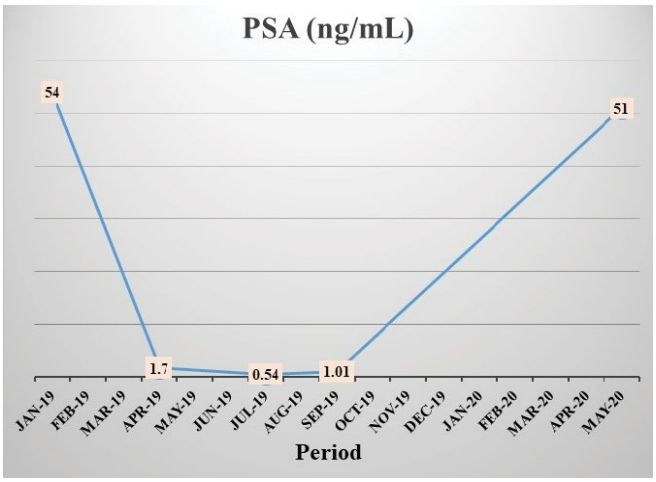

Figure 3. Graph shows serum Prostate-Specific Antigen (PSA) values over a period of time.

Results and Discussion

Prostate cancer metastasis to the penis is rare and very few cases have been reported in literature. These metastases present commonly as nodules over the penis, followed by priapism, pain during erection and dysuria. The mode of metastasis seems to be either by direct invasion, implantation, haematogenous or lymphatic spread. Penile metastases typically manifest as multiple discrete masses in the corpora cavernosa and corpus spongiosum. The metastatic masses can be seen as low-intensity areas within the corporal bodies compared to the normal corporal tissue on both T1 and T2-weighted MRI (Magnetic resonance imaging) sequences. Contrast-enhanced CT usually shows a focal enhancing mass. A needle or wedge biopsy seems to be the definitive way to diagnose this lesion, as it allows histological and immunological confirmation of metastatic spread, and evaluation of the extent of invasion [6].

The treatment modalities available are depending on the general status of the patient, location and extent of the primary tumour and symptomatology such as local excision, radiation therapy, bilateral orchiectomy, hormonal manipulation, systemic chemotherapy and partial/total amputation of the penis in severely symptomatic cases (intractable pain, uncontrollable bleeding). Treatment depends on the general condition of the patient, site and extent of the primary tumour, presence of metastases, and symptomatology. Partial or total penectomy is to be considered only if the patient has widespread ulceration, irritating secretions and intractable pain. [3,4] In our patient who had already undergone ADT and the lesion in the penis being small we started the patient on Docetaxel based chemotherapy [7].

Conclusion

Cocci reviewed the literature relating to all case reports, series and reviews about penile metastasis, from 2003 to 2013, through a Medline search and identified 63 articles and 69 patients. Metastases were located on the root (38.8%), the shaft (38.8%) or the glans (22.2%) of the penis. The diagnosis of penile metastasis was made after the primary cancer had been diagnosed. The most common presentation was a single small penile nodule. Ten patients reported priapism. The median survival time after diagnosis of penile metastasis was 10 months (range 6-18 months). A Kaplan-Meier analysis had shown that the patients presenting with priapism and those with metastases from non-urologic tumours had a significantly worse prognosis (age adjusted Log Rank: p=0.037 for priapism vs. no priapism and p=0.045 for urologic vs. non urologic). In conclusion, Metastatic carcinoma of the prostate presents with different signs and symptoms and one should keep in mind the possibility of penis as the site for metastasis. Management of such patients with penile metastases from adenocarcinoma of the prostate should be more on improving their quality of life with multitude of palliative options rather putting the patient through a morbid systemic/surgical therapy.

Conflict of Interest

None.

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