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Case report

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Penile metastasis of prostatic adenocarcinoma: Report of two cases and review of literature

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Abstract

Background: Carcinoma of the prostate metastasising to the penis is rare. These patients have a poor prognosis receiving various treatment modalities.

Case presentation: Two such patients are discussed here having received differing therapeutic regimes, pointing out the necessity for standardised palliative treatment rather than radical therapy.

Conclusion: Management of patients with penile metastases from carcinoma of the prostate should emphasise improving quality of life with palliative treatment rather than radical therapy

Introduction

Metastasis to the penis is rare, despite rich vascularisation and complex circulation. These most commonly arise from the prostate and the bladder [1,2]. It is a debilitating near terminal condition at presentation with a dismal prognosis. Conservative management is generally advocated with emphasis on improvement of quality of life. Therapeutic modalities used include radical penile amputation and radical radiotherapy. We discuss two patients who underwent differing treatment; the presenting features and symptomatology of all other cases reported in the literature have been reviewed.

Case 1

A 92-year-old man presented as an emergency with bleeding per urethra. Multiple painful 2 × 2 cm hard nodules were seen around the coronal sulcus (PSA = 299 ng/ml). He had had a primary well-differentiated adenocarcinoma of the prostate diagnosed 11 years previously. His treatment included bilateral orchidectomy and cyproterone acetate. A clinical diagnosis of penile metastases was made. In view of the multiple small nodules, urethral ulceration, local obstructive symptoms and severe penile pain; surgery was considered instead of external beam radiotherapy. A subtotal penectomy with perineal urethrostomy was performed. The surgery was straightforward with remarkably little blood loss, probably a result of genital atrophy secondary to long-term androgen withdrawal. Histology confirmed the presence of metastatic moderately well differentiated prostatic adenocarcinoma (Figure 1) extending through the length of the penis and into the glans and spreading to the surface of the skin at the corona with vascular and lymphatic permeation. There was also urethral ulceration. Immunohistochemistry for PSA confirmed histological diagnosis. Pain relief was rapid with a significant improvement of post-operative quality of life.

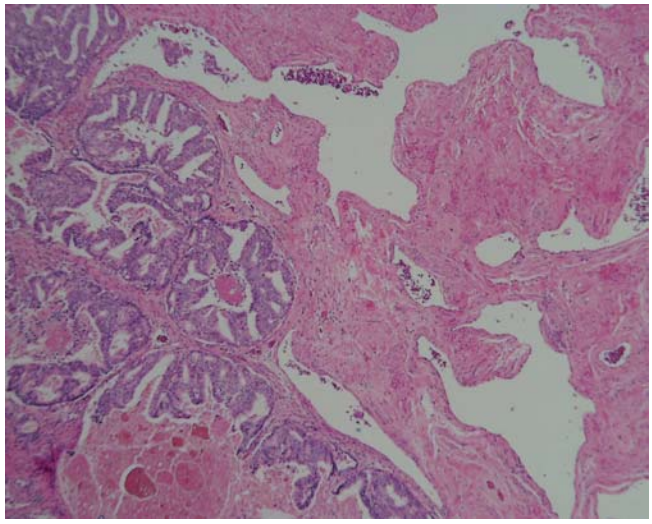

Figure 1
Histology confirms the presence of invasive adenocarcinoma invading the corpora cavernosa (CC) (15×, H/E).

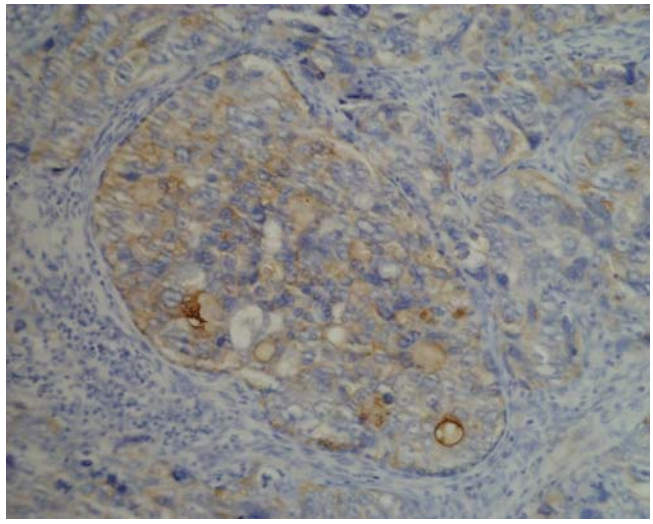

Figure 2
Immunohistochemistry shows membrane and luminal positivity for prostatic specific antigen (120×).

Case 2

An 85-year-old man was admitted as an emergency with symptoms of painful urinary outflow obstruction. Transurethral prostatic resection four years previously had showed a Gleason's Grade 9 prostatic adenocarcinoma; bilateral orchidectomy was performed, followed by cyproterone acetate. Clinical examination revealed palpable nodular 3 × 1 cm lesions at the penile and bulbar urethra (PSA = 41.7 ng/ml). Biopsy of these nodules showed several malignant glandular structures infiltrating the corpus cavernosa of the penis suggestive of a poorly differentiated adenocarcinoma, confirmed immunohistologically (Figure 2) as of prostatic origin. Suprapubic catheterisation was followed by immediate pain relief and marked improvement in quality of life. He is currently receiving palliative care.

Review of literature

Ninety-eight cases of penile metastases from prostate cancer were identified in the literature [3–10]. Patients were between 42 to 93 years (average 70 years). Urinary symptoms were noted in 28 patients, varying in severity from urethral bleeding to complete urinary retention. Priapism was reported in half the patients, ten of whom also had urinary retention. In 16 patients, the presenting symptom was penile pain; seven of whom had palpable penile nodules. Of 75 patients, metastases was restricted to the corpora cavernosa in 32 patients, glans penis in 12, urethra in four, skin/prepuce in four and corpus spongiosum in three and 20 having multiple involved areas. Biopsy was the mainstay of diagnosis in all the patients with three having additional cystoscopies. 33 patients underwent surgery such as penile amputation, cystostomy and bilateral orchidectomy. Fifteen patients each received radiation and hormonal treatment. These patients had a poor prognosis with survival documented at between 10 days and 84 months, with an average of 6 months, from presentation.

Discussion

Metastatic spread from the prostate to the penis occurs by several routes [7,10], retrograde venous or lymphatic spread, and direct extension are the commonest mechanisms. The most reliable diagnostic modality remains the needle core biopsy; this allows for histological and immunological confirmation of metastatic spread, and evaluation of extent of invasion [5]. Treatment options depend on the general condition of the patient, site and extent of the primary tumour, presence of metastases, and symptomatology. The treatment options available include local excision of the tumour, radiation therapy, bilateral orchidectomy, additional hormonal and/or chemotherapy and, partial or total amputation of the penis. In patients who present with urinary tract outflow obstruction, procedures such as cystostomy or suprapubic catheterisation are of palliative value [7]. Amputation of the penis with urethrostomy formation is to be considered in patients with ulceration, irritating secretion and intractable penile pain for symptom control. In one of our cases treatment followed palliative lines but in the other, subtotal penectomy for severe intractable penile pain, resulted in immediate pain relief and marked

improvement in quality of life. Emphasis should be on palliative treatment and improving quality of life in view of the poor prognosis and a 6-month mortality of 80%. Surgery could be a therapeutic option, but only in patients attended with severe intractable pain.

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