

## Oncology

# Penile metastasis presenting as oedema: A case report and management approach

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## ABSTRACT

Metastases to the penis are rare but occur more commonly in Urological cancers. We present a case of an 80-year old gentleman who initially had penile oedema following radical radiotherapy for muscle invasive bladder cancer. The relatively innocuous appearing oedema was investigated without an identifiable cause. Within weeks it rapidly progressed into a large solid mass. This case highlights the need for a high index of suspicion of disease progression and early imaging to potentially facilitate palliative treatment options.

## Introduction

Penile metastases are a rare complication of malignancy, typically signifying advanced disease.<sup>1</sup> Of the small number of cases previously published, the majority arise from urological cancers. Urothelial bladder cancer accounts for 29% of cases, and prostate adenocarcinoma accounts for 28%.<sup>2</sup> Penile metastases can occur due to retrograde venous or lymphatic flow, via arterial haematological spread, or by direct invasion.<sup>3</sup> Cutaneous metastases occur in just 0.84% of bladder cancers,<sup>4</sup> with the rate of penile metastases being significantly less. Malignant priapism can also occur and usually requires surgical management.

## Case presentation

An 80-year-old man presented with oedema of the penis 7 months following radical radiotherapy for grade 3 pT2 N0 M0 transitional cell carcinoma of the bladder (20 fractions, totalling 55 Gy). His medical background also included atrial fibrillation and hypertension.

There was no evidence of recurrence at cystoscopy, although there was a mild benign urethral stricture that was easily negotiated with the flexible cystoscope. Pelvic CT imaging did not identify any malignant process or vessel compression to explain the oedema. As a result, it was initially thought that the oedema was resultant from the radiotherapy, as it is a recognised side effect of external beam radiotherapy.

The patient was observed in keeping with routine surveillance post radical radiotherapy. One month later he underwent a further cystoscopy under general anaesthetic so his stricture could be formally dilated. Again, there was no sign of urethral or bladder recurrence but the penile

oedema was a little worse at this time. Within 6 weeks, however, the patient presented urgently with a rapidly progressing solid mass involving the penis, upper scrotum and suprapubic area (Fig. 1).

The patient underwent a penile biopsy to establish the origin of the tissue. The histology confirmed that the mass was urothelial in origin and represented a metastasis of the bladder cancer (Fig. 2). CT staging imaging identified lung metastases in addition to the known penile mass, in-keeping with metastatic bladder cancer (Fig. 3).

The histological sample was tested for PD-L1 expression, however unfortunately this was negative and the patient was therefore not eligible for immunotherapy. Following a multidisciplinary team discussion it was established that there were no surgical options for management, the tumour was unsuitable for immunotherapy and the patient's performance status precluded chemotherapy. As a result the patient was managed on a palliative basis for his symptoms.

## Discussion

This case presents a number of challenges both in diagnostics and management. A subtle presentation of a subsequently aggressive and rapidly progressing malignancy creates a very narrow window of opportunity to offer further treatment.

This gentleman was investigated appropriately, however after the reassuringly negative investigations, we were mistaken in attributing the oedema to radiotherapy. Lymphoedema following radiotherapy is well recognised but penoscrotal oedema is rare, with only a few case reports available.<sup>5</sup>

In future, we would consider penile MRI in these cases to allow early

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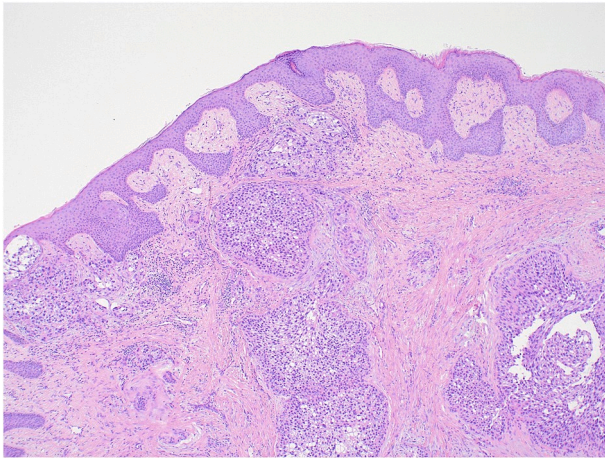
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**Fig. 1.** Photograph of penile mass prior to biopsy.



**Fig. 2.** Histology image from the skin biopsy of the mass. The slide demonstrates a infiltrative dermal tumour consistent with a Urothelial carcinoma metastasis. Acknowledgement: Thank you to Dr H Rashed and Dr Y Littler for providing the image.



**Fig. 3.** Axial CT image of penile mass with urethral catheter.

treatment would have been available due to the patient's co-morbidities. For others however, a palliative radical penectomy may be an option for symptomatic control.

### Conclusion

Bladder cancer metastases to the penis are rare, can be difficult to manage and indicate a poor prognosis. If suspected, cystoscopy and pelvic imaging should be carried out. However, if the results of these are normal, a high index of suspicion should lead to specific penile imaging with MRI. Although the prognosis is poor, early diagnosis could offer the possibility of palliative or salvage treatment.

### Consent

Patient consent obtained for publication of case and supporting images.

### Declaration of competing interest

None to declare.

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biopsy and diagnosis. Although in this case, it is unlikely surgical