CASE REPORT

Primary penile melanoma with an incidental renal oncocytoma

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SUMMARY

A 57-year-old man presented with a pigmented lesion on the ventral aspect of his glans penis. A punch biopsy showed features consistent with malignant melanoma. Preoperative staging was initiated with CT of the thorax, abdomen and pelvis. A mass in the lower pole of the left kidney was found and given the presence of a primary melanoma, was highly suspicious for a metastatic deposit or a primary renal cell carcinoma. A biopsy of this mass failed to give a definitive diagnosis. The patient proceeded to have a partial penectomy and a left radical nephrectomy. The penile lesion was a 2.5 mm malignant melanoma with nodular and superficial spreading components. The renal mass turned out to be a benign oncocytoma. The final clinical stage of the penile melanoma was pT3a N0 M0. The patient received adjuvant interferon therapy. He is well and free of disease recurrence at 1-year postsurgery.

BACKGROUND

Penile melanoma is a rare cancer with a poorer prognosis than that of cutaneous melanoma as there is usually a delay in the presentation and diagnosis. There is no consensus in the literature on how best to manage this disease. This case was further complicated by the incidental finding of a renal neoplasm and raised the question of how best to manage this given the presence of a primary melanoma.

CASE PRESENTATION

A 57-year-old man was referred to the dermatology outpatient department with a pigmented lesion on his glans penis. He had noticed the lesion 3 months prior to this and brought it to the attention of his general practitioner as it had increased in size. There were no lesions elsewhere and no associated symptoms. His medical history included atrial fibrillation, depression and hypertension. He was a non-smoker and was married with two children. There was no significant family history.

On examination there was a pigmented lesion on the ventral surface of the glans penis measuring 1.5 cm × 1 cm. It was raised with irregular borders and surrounding erythema (figure 1). There was no inguinal lymphadenopathy and a skin survey did not reveal any other suspicious lesions.

INVESTIGATIONS

A punch biopsy of the lesion was performed which showed malignant melanoma (figure 2). A preoperative CT of the thorax, abdomen and pelvis for staging revealed an extensive abnormality in the

Figure 1 Pigmented lesion on glans penis.

lower pole of the left kidney which was concerning for a malignant process. There was also a small 5 mm para-aortic lymph node on the left side close to the renal vein.

DIFFERENTIAL DIAGNOSIS

Differential diagnosis of the renal lesion: renal cell carcinoma (RCC), metastatic deposit from the malignant melanoma, oncocytoma.

TREATMENT

The patient was referred to the urology service for further management. He underwent a partial penectomy. The resection margin was 1 cm proximal to the pigmented lesion. An intraoperative frozen section was sent to the pathology lab to ensure clearance of the margins.

His renal mass was biopsied and immunostaining with CD10, CK7 and RCC markers were all negative. The immune profile favoured a diagnosis of

Figure 2 Histology showing superficial spreading component of malignant melanoma.

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oncocytoma rather than classical or chromophobe renal cell carcinoma. However, it was not possible to obtain a definitive diagnosis of the renal lesion on the biopsy material so the patient then underwent a left radical nephrectomy. A laparoscopic approach was initially attempted but access was limited so it was decided to convert to an open radical nephrectomy.

OUTCOME AND FOLLOW-UP

The penile lesion was staged as a pT3aNxMx malignant melanoma with nodular and superficial spreading components. It had a Breslow thickness of 2.5 mm and was Clarke's level 4. There was no ulceration or focal lymphovascular invasion and the nearest resection margin was >30 mm.

The histology of the renal lesion was a benign oncocytoma measuring 45 mm. The tumour was confined to the kidney with no evidence of capsular or vascular invasion or malignancy.

To complete the staging, the patient also had a positron emission tomography CT (PET CT) and a bone scan, neither of which showed any metastatic disease. His pathological and radiological stage was pT3aN0M0. He was then referred to medical oncology and started on adjuvant interferon therapy.

At most recent follow-up 1 year postsurgery the patient is well with preserved continence and no evidence of metastatic spread of disease.

DISCUSSION

Epidemiology

Melanoma of the glans penis is a rare cancer. The largest series of penile melanoma reported contained 19 patients¹ and there are now more than 100 cases reported in the literature.² The incidence of primary penile melanoma is thought to be between 0.1% and 0.2% of all melanomas and the disease constitutes less than 2% of all malignancies at this site.^{1 3 4} Mucosal melanomas arising in the genital tract are more common in women than in men which is explained by the large concentration of melanocytes at the mucocutaneous border of the vulva.⁵

Pathogenesis

Melanoma of the glans penis may be epidermal or mucosal in origin. Mucosal melanoma arises from the distal urethra while epidermal melanomas arise from the glans. Our patient had a melanoma with both superficial spreading and nodular components. Other types reported in the literature include an acral-lentiginous type,⁶ superficial spreading,⁷ and nodular.²

Penile melanomas have a similar prognosis to melanomas elsewhere, but the mutations seen in cutaneous melanomas usually contain mutations in protein kinases such as BRAF and KIT, but these mutations are rarely present in the penile melanomas. Oxley *et al* reported a series of 12 patients.⁸

The incidental finding of the renal oncocytoma on the preoperative staging CT led to a clinical conundrum in the management of this patient. Although the initial biopsy of this lesion favoured a benign process we still elected to perform a radical nephrectomy given the presence of the penile melanoma. The incidence of incidental findings on radiological images has increased substantially in recent years given the increase in imaging for various indications.⁹ The problem then arises when these incidental tumours are found in a patient with a known malignancy, as in our patient. A biopsy may initially be advocated to diagnose small renal tumours and prevent unnecessary surgery¹⁰ but if the histology is benign, this may be due to sampling errors¹¹ and so a resection is often performed in the first instance.

Treatment options

The treatment of penile melanoma is similar to that of a cutaneous melanoma with wide radical excision by either partial or total penectomy and a sentinel lymph node biopsy in clinically node negative patients.¹ If the sentinel node is found to be involved, or has clinically palpable nodes, the patient proceeds for a bilateral inguinal lymph node dissection.³ The combination of Moh's microsurgery with sentinel lymph node biopsy has also been described to maintain cosmetic and functional demands while avoiding the morbidity associated with inguinal lymph node dissection. Kim *et al.*¹² report good results using this technique at 30-month follow-up. The use of intraoperative frozen sections and H&E staining of the sentinel lymph node remains controversial as it has a low sensitivity in detecting micrometastasis in the node. This will only be picked up on melanoma-specific S-100 and HMB-45 immunohistochemistry.¹³

Prognosis

Five-year survival rates are comparable to that of cutaneous melanoma with similar tumour thickness. The presence of ulceration, tumour depth of 3.5 mm or more and tumour diameter greater than 15 mm has a significant adverse effect on the prognosis, as in cutaneous melanoma.¹ In the case of penile melanoma, delayed presentation and diagnosis explains the usually bad prognosis.^{4 14 15} The 10-year survival rate for all patients with melanoma is 85%.¹⁶

Learning points

- ▶ Melanoma of the penis is a rare disease.
- ▶ It presents in a similar fashion and has an equivocal natural history to that of cutaneous melanoma.
- ▶ Preoperative staging with a CT TAP ± bone scan should be carried out.
- ▶ The prognosis is usually poorer in penile melanoma as there is usually a delay in the presentation and diagnosis due to the sensitive nature of the condition.
- ▶ The treatment is similar to cutaneous melanomas.
- ▶ Incidental neoplasms can lead to clinical conundrums when deciding on further management in patients with a known malignant process.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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