Seminal vesicle metastasis of cutaneous malignant melanoma: An unusual and challenging presentation

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Abstract

Malignant melanoma is a tumour, which usually involves skin melanocytes. Involvement of the male genitourinary (GU) system by melanoma is an uncommon and challenging diagnosis. We report the first case of seminal vesicle metastasis from a primary cutaneous melanoma in a 58-year-old man, with hemospermia as the only clinical sign. This case highlights the role of multiparametric magnetic resonance imaging, as a more sensitive assessment to early detect metastatic melanoma in the GU system. The patient underwent a robot-assisted laparoscopic bilateral seminal vesiculectomy, which had good functional and oncological results and is still in complete remission at the 1-year follow-up.

Introduction

Malignant melanoma is a tumour which usually involves skin melanocytes, and rarely uveal cells and mucous membranes. The incidence of malignant melanoma is still rising, varying from 3–5/100 000/year in Mediterranean countries to 12–20 in Nordic countries.[1] Malignant melanoma has a good prognosis at a local stage, but recurrence may occur in up to 36% of patients with stage I or II melanomas, with poorer prognosis for patients with a systemic recurrence.[2] The malignant melanoma metastases are ubiquitous, but secondary involvement of the male genitourinary (GU) system is rare.[3,4] Only one case has been reported of metastatic malignant melanoma to the male genital organs, in a patient with an unknown primary melanoma presenting with hemospermia.[5] We report the first case of seminal vesicle (SV) metastasis from a primary cutaneous malignant melanoma.

Case report

A 58-year-old man underwent an excision of a 2.1-mm thick ulcerated nodular achromatic malignant melanoma of the left shoulder in August 2008. The initial whole-body computed tomography (CT) and sentinel lymph node were negative. He presented in August 2010 with a palpable left supraclavicular lymph node and underwent a radical left cervical lymph node dissection, showing one positive node out of 28. In December 2010, he was included in a randomized double-blind control trial, comparing epilimumab and placebo (EORTC 18071), in an adjuvant setting. During the follow-up, he complained of hemospermia starting in January 2012, with a negative initial assessment comprising digital rectal examination, cystoscopy, CT-urography, urine culture and cytology. His serum prostate-specific antigen level was 1.06 ng/mL. The persistence of hemospermia led us to perform a 3T pelvic phased array coil multiparametric magnetic resonance imaging (mpMRI) of the pelvis in December 2012. A right SV mass of 10 mm was visualized with a low signal on T2-weighted (Fig. 1, part A), iso-signal on T1-weighted, peripheral enhancement at T1-contrast-enhanced (Fig. 1, part B) and hyper-signal at diffusion-weighted images at b2000 with a low ADC value of 0.65 $10^{-3}mm^2/s$ (Fig. 1, part C). SV and prostate biopsies were performed using transrectal ultrasound guidance. Pathology revealed SV invasion by a malignant tumour with HMB45 expression on immunohistochemical examination (IHC), suggesting a melanoma metastasis. Further extension assessment by [^{18}F]Fluoro-deoxy-glucose positron-emission tomography combined with CT (FDG-PET-CT) showed a focus of high activity in the right SV (Fig. 1, part D) and did not show additional metastases.

The patient reached a stage IV melanoma but since he had a single metastasis, surgical resection was proposed and he underwent a robot-assisted laparoscopic bilateral seminal vesiculectomy with a 1-cm safety margin at the

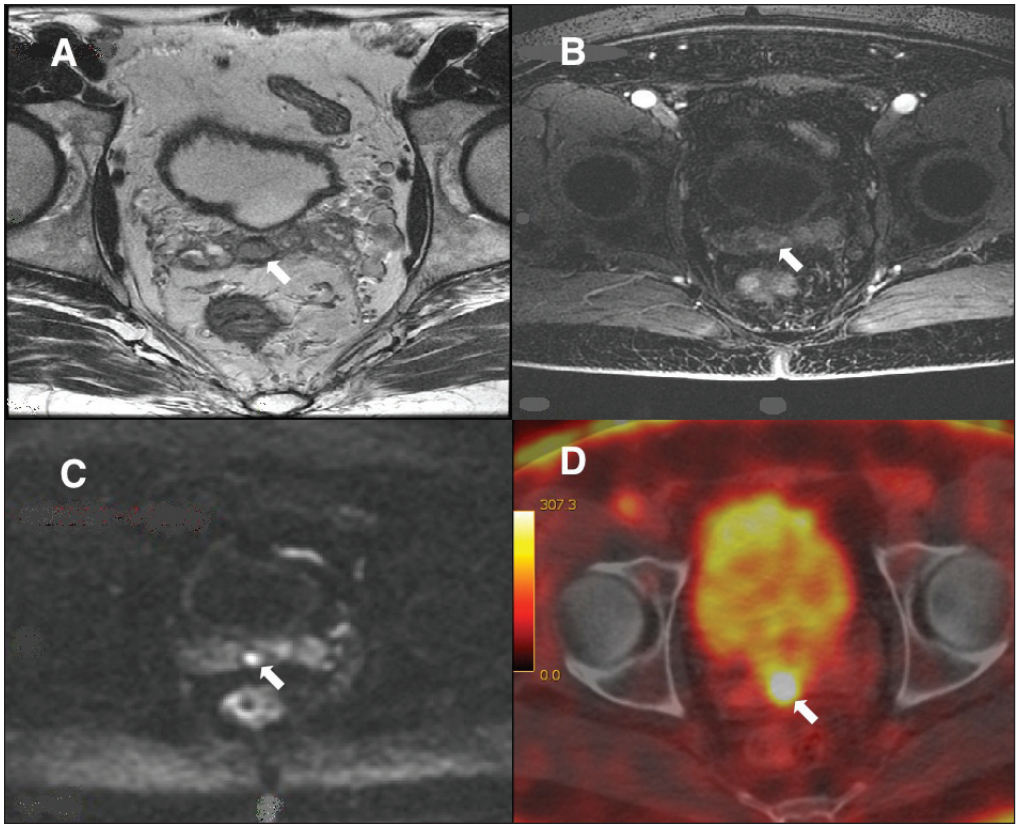

Fig. 1. Multiparametric magnetic resonance image and [^{18}F]Fluoro-deoxy-glucose positron-emission tomography ([^{18}F]FDG-PET) combined with a computed tomography (CT) scan. A: T2-weighted axial image of right seminal vesicle mass (SV) in low signal (arrow). B: Peripheral enhancement of the mass at T1-contrast-enhanced sequence (arrow). C: Nodular hyper-signal of right SV at Diffusion-weighted image (arrow). D: Focus of high activity in area of right SV at [^{18}F]FDG-PET combined with CT-scan (arrow).

prostate base, with the aim of R0-resection and potential long-term disease control, according to the European Society for Medical Oncology (ESMO) guidelines for cutaneous malignant melanoma.[1] Macroscopic analysis revealed two contiguous suspect and whitish nodules (Fig. 2) measuring 9 mm in total diameter.

Histomorphological examination by hematoxylin-eosin (H&E) stain (×400) revealed poorly differentiated tumour cell proliferation with large nucleoli and no melanin pigment (Fig. 3, part A). IHC examination showed strong cytoplasmic positivity with HMB45,×200, confirming malignant melanoma metastasis (Fig. 3, part B).

The postoperative functional recovery was good and there was no evidence of disease or metastatic recurrence at the 1-year follow-up.

Discussion

Metastatic solid tumours in the male GU tract are uncommon, and probably underdiagnosed.[3] The reviews of archival material at a single institute of pathology showed a proportion of all cause secondary GU tract malignancies as 1.6%, 2.1%, 2.3% and 3% respectively in the testis, prostate, bladder and kidney.[6]

Accurate diagnosis of malignant melanoma metastasis to the GU tract is important because of its aggressiveness and possible functional impact.[3,4] Bates and colleagues reported on a single centre continuous series of autopsy and surgical cases. They found 51 cases of prostate invaded by a secondary neoplasm (2.1%). Two-thirds (34 cases) of these cancers were a direct spread from adjacent organs, one-third (17 cases) were distant metastases, including 2 cases of metastasis from cutaneous and uveal malignant melanoma.[6]

Clinical manifestations of prostate metastasis are usually lower urinary tract symptoms, hematuria, and pelvic pain, though unfortunately these symptoms occur in local-

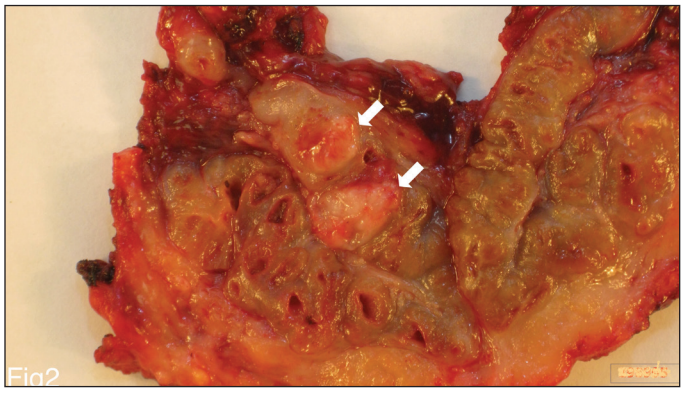

Fig. 2. Macroscopic analysis of the right seminal vesicle surgical specimen shows two contiguous suspect and whitish nodules (arrows) of 9-mm cumulated diameter.

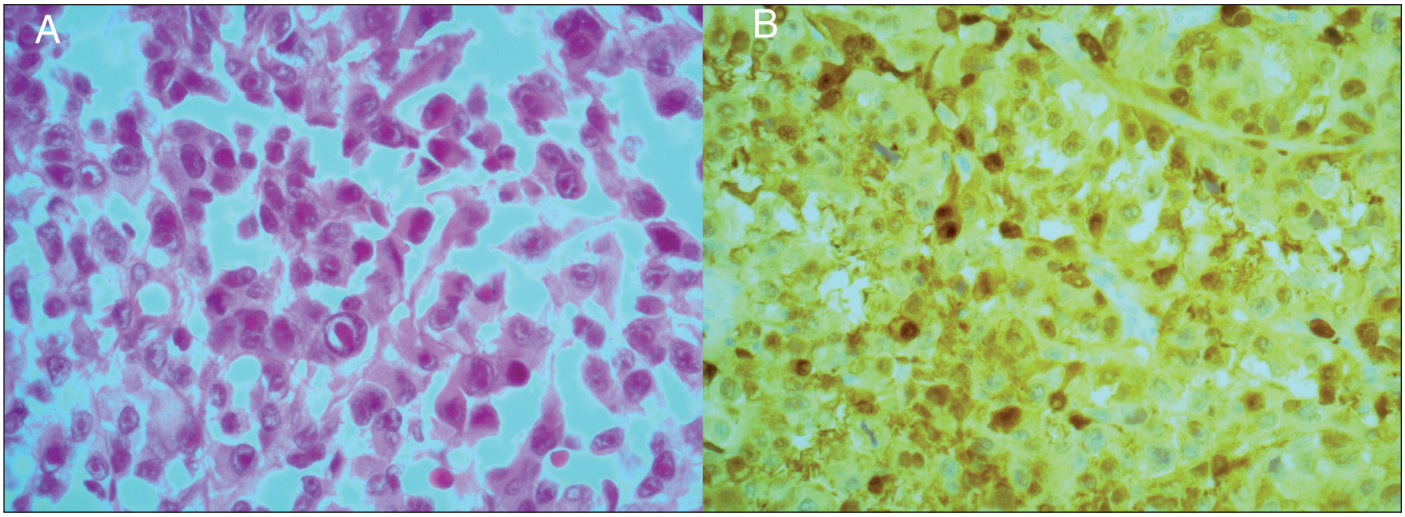

Fig. 3. A: Histomorphological analysis of the tumour showed poorly differentiated cell proliferation with large nucleoli (Hematoxylin-eosin stain, ×400). B: Strong cytoplasmic positivity with HMB45 (×200) at immunohistochemistry.

ly advanced stages.[6] Cases of SV metastasis of malignant melanoma have been reported, but with prostate and bladder involvement and other visceral metastasis.[5,7] Meng and colleagues[5] reported a case of hemospermia in a 33-year-old man, revealing multiple metastatic disease including SV, of a malignant melanoma from unknown primary site. Melanospermia has also been reported revealing an involvement of prostate and GU tract by malignant melanoma.[8,9]

Our case is interesting because hemospermia revealed stage IV of the disease with an isolated metastasis of the SV. In contrast to other reported cases, our patient after surgery had good functional results and is still in complete remission 1 year later.

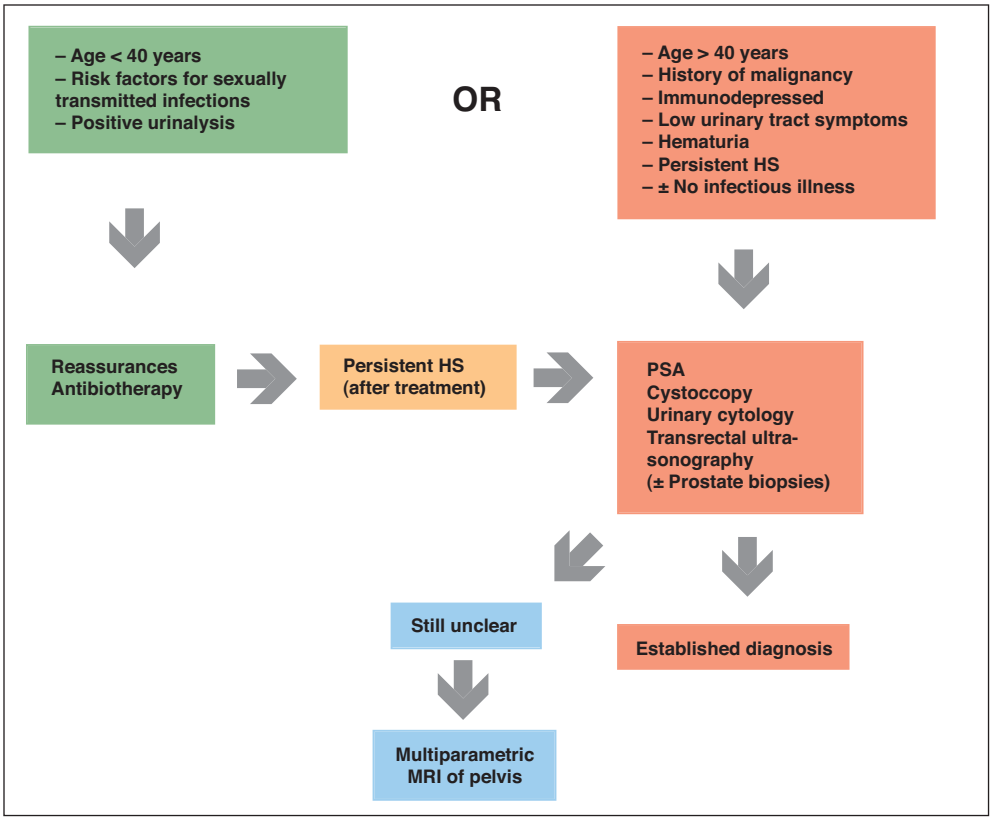

Fig. 4. Possible diagnostic algorithm for patients with hemospermia. HS: hemospermia; PSA: prostate-specific antigen; MRI: magnetic resonance imaging.

GU malignancies represent only 3.5% cases of hemospermia.[10] However in cases of persistent hemospermia, especially in men >40 years, immunodepressed, or history of malignancy, it is possible to find a potentially curable GU malignancy.[10] Progress in mpMRI makes it a key investigation tool in this setting,[5,10] as it is in our patient where standard evaluation did not detect the tumour. MpMRI may characterize visceral locations of malignant melanoma as a hyper-signal in T1-weighted sequence (depending on the level of melanin), with moderate enhancement in T1-contrast-enhanced and low signal in T2-weighted images.[5,11] Moreover the added value of diffusion was important to detect the SV metastasis in our patient. Thus, whole-body mpMRI, using a diffusion-weighted sequence, is a promising non-radiating imaging modality for staging of advanced malignant melanoma that may have similar diagnostic rates when compared with FDG-PET-CT.[11] However we do not advocate routine use of mpMRI because of cost and limited availability. Therefore we have proposed a diagnosis algorithm for hemospermia based on our experience and published reports (Fig. 4).[5,6,10]

GU locations of metastatic malignant melanoma have a poor prognosis. Surgical excision with R0 margin should always be discussed as first-line management whenever possible, with or without systemic therapy.[1,4]

Conclusion

Metastases of malignant melanoma to the male GU tract are unusual and present a challenging diagnosis. In this situation endoscopy and CT-urography can fail to detect secondary lesions, and mpMRI appears as a more sensitive assessment method for early detection of these metastasis. Surgical excision should always be discussed and is dependent on synchronous metastases, whether or not the lesion is symptomatic, and on the patient's general condition.

Competing interests: The authors declare no competing financial or personal interests.

This paper has been peer-reviewed.

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