

Metastatic malignant melanoma of the urinary bladder: Case report and literature review

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KEY WORDS

malignant melanoma ► bladder metastases
► hematuria

ABSTRACT

Metastatic malignant melanoma of the urinary bladder is a rare clinical finding suggestive of advanced disease. Only 17 cases have been described in the English literature.

We present a case of an 84-year-old male who was referred to the urology department with the incidental finding of bladder metastases on computed tomography (CT) one year following the diagnosis of malignant melanoma of the skin. Herein, we will discuss epidemiology, prognosis, and management options of metastatic malignant melanoma based on literature review.

CASE REPORT

An 84-year-old gentleman was referred to the Urology Department at Bedford Hospital with a computed tomography (CT) scan revealing multiple polypoidal lesions in the urinary bladder (Fig. 1) and bilateral pulmonary metastases. The patient initially presented to the dermatology department in May 2010 with a suspicious, raised nodular lesion on the skin of his upper back. He underwent an urgent wide local excision of the lesion in June 2010. The histopathology report revealed an ulcerated nodular malignant melanoma with a Breslow thickness of 9.6 mm and Clark level 4 with no lymphovascular or perineural invasion. The lesion was completely excised with the nearest peripheral margin at 11.5 mm and the deep resection margin at 10.5 mm. Careful surveillance was advocated and routine reviews with CT scans did not reveal any local recurrence or metastatic disease three and nine months postoperatively.

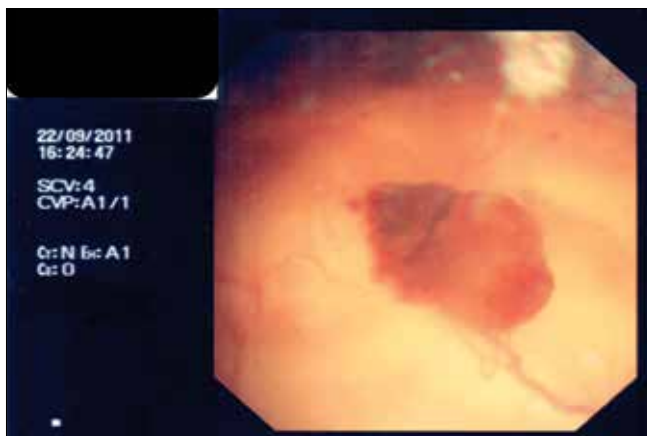


Fig. 2. Cystoscopic finding of a pigmented bladder metastasis.

Fourteen months following diagnosis the patient developed rectal bleeding and underwent urgent colonoscopy that revealed extrinsic compression of the colon and splenic flexure. A subsequent CT scan of the chest, abdomen, and pelvis noted metastatic disease in the lungs. In the urinary bladder, a large diverticulum and multiple polypoidal lesions were identified, which initiated the urology referral.

During a flexible cystoscopy performed in September 2011, multiple pigmented lesions were identified within the bladder (Figs. 2 and 3). Urine cytology revealed a number of scattered single cells containing pigment, positive for S100 and HMB45, and negative for Perl's stain for iron (Figs. 4 and 5). A diagnosis of stage IV metastatic malignant melanoma with bladder involvement was made. Due to the general poor condition of the patient, the multidisciplinary team consensus was against active treatment. The patient deteriorated rapidly and died due to respiratory compromise.

DISCUSSION

Malignant melanoma is the fifth most common cancer diagnosis in men and the seventh in women [1]. Importantly its

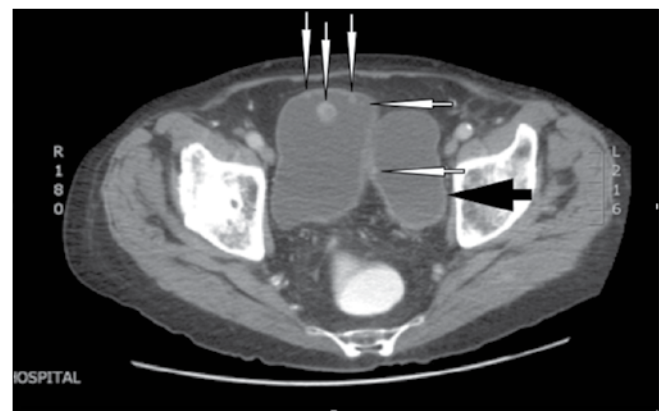


Fig. 1. Computed Tomography scan showing multiple lesions (white arrows) within urinary bladder and a large bladder diverticulum (black arrow).

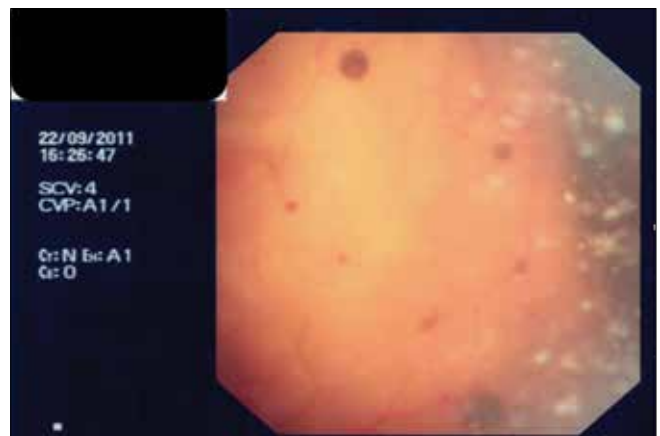


Fig. 3. Cystoscopic finding of multiple small, pigmented bladder metastases.

Table 1. Cases of Malignant Melanoma metastases to the urinary bladder previously reported in English literature

Author	Journal	Year	Presenting Symptom	Synchronous Mets	Treatment
Amar et al.	J Urol	1964	Haematuria	Maxillary lesion	Partial Cystectomy
Bartone et al.	J Urol	1964	Haematuria	Lymph nodes + Brain	Partial Cystectomy
Weston et al.	BJS	1964	Urinary retention	Widespread	None
Dasgupta et al. Case series of 2	J Urol	1965	Haematuria	Axillary lesion Inguinal nodes	Fulguration /Segmental resection
Silverstein et al.	JAMA	1974	Haematuria	Absent	BCG
Meyer et al. Case series of 3	Cancer	1974	Asymptomatic/ Haematuria/ Incidental	Widespread Lung	Chemotherapy / Surgery / TURBT
Tolley et al.	BJ Clin Prac	1975	Haematuria	Absent	Radical Cystectomy
Chin et al.	J Urol	1982	Haematuria	Bowel	Partial Cystectomy
Stein et al.	J Urol	1984	Haematuria	Absent	TURBT + Chemotherapy
Arapantoni-Dadioti et al.	Eur J Surg Oncol	1995	Dysuria	Widespread	Chemotherapy
Ergen et al.	Int Urol Et Neph	1995	Haematuria + flank pain	Bowel	None
Demirkesen et al.	Urol Inter	2000	haematuria + LUTS	Widespread	Chemotherapy
Marthinez-Giron et al.	Cytopathology	2008	Haematuria	Unknown	Unknown
Nair et al.	J Clin Urol	2011	Haematuria	Widespread	Chemotherapy

prevalence is increasing more rapidly than any of the other solid tumors with a five-fold increase in incidence in men over the last thirty years and three-fold increase in women [2]. Patients with stage IV disease have a poor median survival of 6-10 months with less than 5% surviving more than five years [3, 4]. Patients over the age of 65 are more likely to present with late stage disease than younger patients: 20% vs. 7% [2]. Metastases to organs other than the skin or lungs are associated with an even poorer prognosis [4].

Ninety-five percent of bladder tumors are primary urothelial tumors, while other primary tumor types include adenocarcinomas, squamous cell tumors, and small cell tumors [5]. Two percent of bladder tumors are metastases from other primary tumors [6]; the majority of these represent direct spread from adjacent organs. When considering distant metastasis the most common primary tumors are melanomas, gastric tumors, and breast tumors [7], usually in the context of an advanced and widespread disease [8].

The clinically evident metastatic melanoma in the bladder is rarely described and most commonly presents as painless, macroscopic hematuria (Table 1). A subsequent diagnosis is made based on the cystoscopic findings and histopathological features combined with a clinical history of previous melanoma; though melanoma cells may have been evident on urine cytology [9]. The location of the primary lesion is also highly variable with no site predominating. Equally the lesion may present soon after the diagnosis or over 20 years later. However, despite occasionally being the first presentation of stage IV disease, they most commonly occur in the context of widespread metastatic spread and have a correspondingly poor prognosis.

Management of malignant melanoma metastases into urinary bladder consists of conservative management that involves local and systemic therapy (Table 1). Endoscopic resection of metastatic deposits might be considered for symptoms palliation, while partial or complete cystectomy should be reserved for patients with longer life expectancy. The overall risk of complications of minimally invasive transurethral surgery is 5.1% with hematuria and bladder perforation incidence of 2.8% and 1.3%, respectively [10]. Treatments with systemic

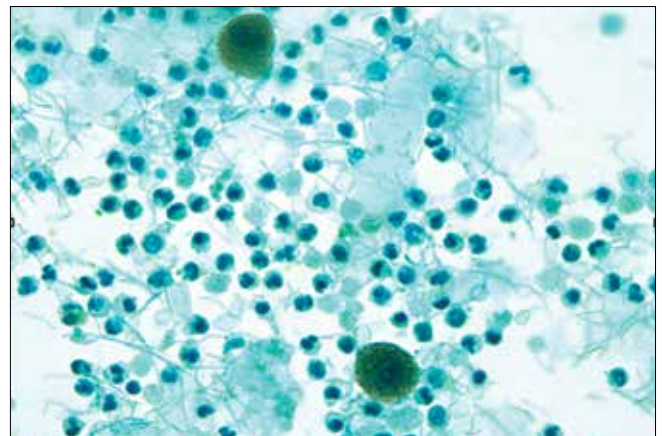


Fig. 4. Urine cyto 63X – Malignant melanoma cells with high N:C ratio and cytoplasmic melanin pigment on PAP stained preparation.

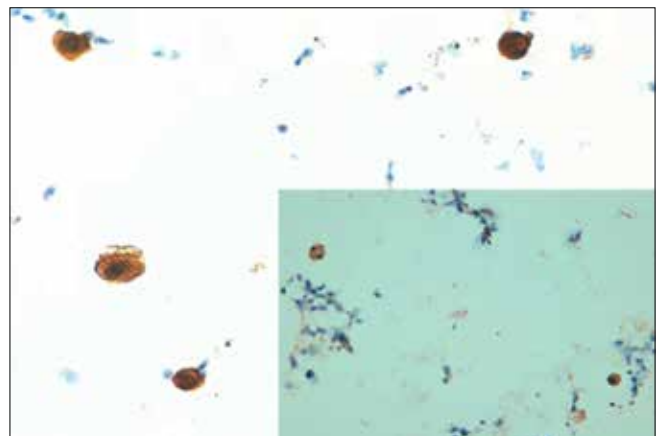


Fig. 5. HMB-45 positive melanoma cells (large slide) and IHC-S100 positive melanoma cells (bottom right corner).

chemotherapy were reported as an adjunct to endoresection; however, this should be limited to patients with better performance status.

CONCLUSIONS

Malignant melanoma is an increasingly common [2] and aggressive cancer with high metastatic tendency. Metastases to the urinary bladder are often asymptomatic hence are probably underreported as autopsy series reveal bladder involvement in 18% of the patients with extra-regional disease [11]. Clinically evident metastases usually present with hematuria and indicate an advanced disease.

An increase in the number of diagnoses is imperative due to widespread access to high quality pelvic imaging and will likely result in therapeutic debate. Treatment modalities including conservative management, transurethral surgery, systemic chemotherapy, and partial or complete cystectomy have been described (Table 1); however, the evidence is anecdotal. Therefore, management should be tailored to the patient's condition, symptoms, and number and size of metastases, as well as the need for considering a poor prognosis of stage IV disease.

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