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Melanoma metastasis to the bladder: A case report

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ABSTRACT

Metastasis of malignant melanoma to the bladder is rarely seen clinically with only 29 cases reported in English-language literature. However, autopsy series of melanoma patients have shown that metastasis to the bladder could be as high as 37%, implying that numerous cases remain undiagnosed. This report details a case of malignant melanoma metastasis to the bladder. Patient presented with severe anemia and history of gross hematuria. Computerized tomography (CT) revealed a 2.7 cm mass in the bladder. Cystoscopy confirmed presence of a mass. Patient underwent cystoscopy and transurethral resection of the tumor, revealed to be melanoma on pathology.

1. Introduction

Skin cancer is the most common cancer globally and within the United States. Among these, melanoma has long been established as the deadliest type of skin cancer. Metastasis of malignant melanoma to the bladder is rarely seen clinically with only 29 cases reported in English-language literature.[1] However, autopsy series of melanoma patients have shown that metastasis to the bladder could be as high as 37%, implying that numerous cases remain undiagnosed.[2] Here, we report a case of metastatic malignant melanoma and a brief review of the literature.

2. Case presentation

A 78-year-old female presented to her primary care physician with severe anemia. Upon presentation, the patient stated she had been experiencing episodes of gross hematuria for several weeks. Five years prior, she had a malignant melanoma lesion excised from her breast. Following this, the patient had no evidence of disease until the current episodes of gross hematuria. She was subsequently admitted to receive a blood transfusion and urology consultation.

After clinical stabilization, computed tomography (CT) scan of the abdomen and pelvis was obtained and revealed a density along the right posterolateral aspect of the partially distended urinary bladder measuring 2.7 cm. Evaluation of the mass was severely limited due to streak artifact. Subsequent cystoscopy revealed a large, nodular, sessile, broad-based tumor actively bleeding on the right side of the posterior wall. Portions of the tumor appeared necrotic. Transurethral resection of all visible tumor was performed, and hemostasis achieved. Bimanual examination following resection was unremarkable.

Pathology revealed undifferentiated malignant tumor extensively involving the bladder wall. Hematoxylin and eosin staining showed enlarged vesicular and pleomorphic nuclei and occasional melanin pigment (Fig. 1). Immunostains showed the specimen to be positive for HMB-45 and S100 protein and negative for pancytokeratin, cytokeratin 7, cytokeratin 20, and P63. High proliferative activity was demonstrated with staining or KI-67, which stained in 50% of tumor cells. This immunostain profile was diagnostic for metastatic malignant melanoma.

The patient was referred to medical oncology for further management. Positron emission tomography/computed tomography (PET/CT) was subsequently obtained demonstrating two left lower lobe pulmonary nodules with focal abnormal fluorodeoxyglucose uptake thought likely to represent metastatic disease. Brain MRI was also obtained and notable for a right frontal dura lesion suspicious for metastatic disease. Next generation sequencing was sent and showed a BRAF V600E mutation. Based on this workup, the patient will receive ipilimumab/nivolumab combination immunotherapy with the plan to use a BRAF inhibitor later in treatment.

3. Discussion

As of 2018, the incidence of melanoma per 100,000 persons in the

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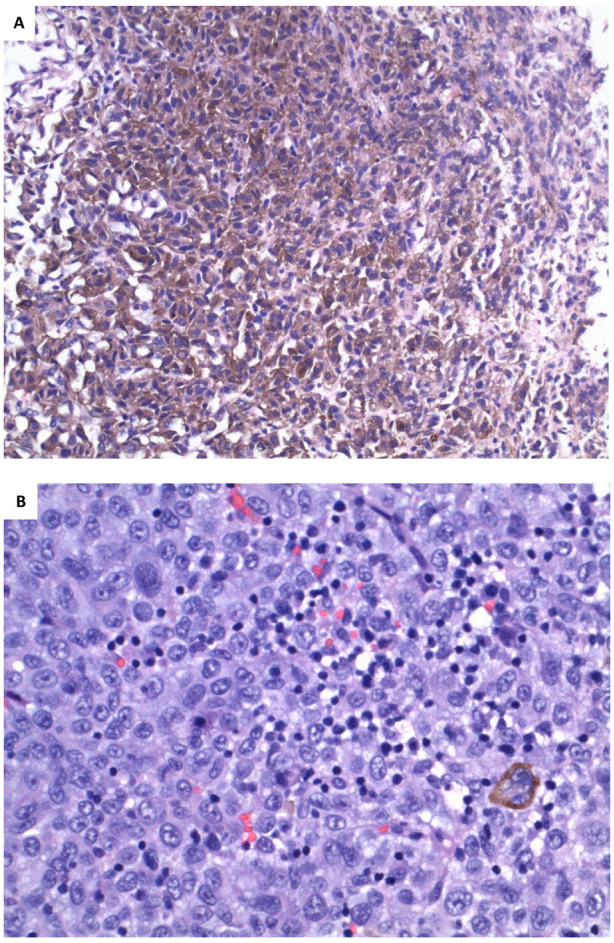

Fig. 1. Metastatic malignant melanoma cells showing enlarged vesicular and pleomorphic nuclei and occasional melanin pigment. Staining was performed with hematoxylin and eosin.

United States is 17.[3] It is estimated that 30% of melanoma cases ultimately develop metastases, most of which spread to the lungs, skin, brain, or liver. Metastasis to the bladder is rare, and when it does occur, it often remains undiagnosed. In the case of clinical presentation, the presenting symptom is typically gross hematuria, though in rare cases urinary retention, dysuria, increased urinary frequency, flank pain, or suprapubic pain have been documented.[1]

Once malignant melanoma has metastasized, prognosis is generally poor. Historically, chemotherapy for metastatic melanoma has resulted in a 5-year overall survival rate of less than 10%.[4] As a result, when cases of melanoma metastatic to the bladder were discovered, treatment was typically aimed at reduction of symptoms, and was palliative in nature. Recently however, the use of monoclonal antibodies to PDL-1/PD-1 including nivolumab, pembrolizumab, and ipilimumab has been shown to induce a more robust response. Ipilimumab has demonstrated a 5-year overall survival rate ranging from 12.3% to 28.4% for all patients and 21.4%–49.5% for treatment naïve patients.[5] As a result of improved patient response with systemic immunotherapy, the role of surgery in metastatic disease has evolved over time. Previously, surgery was mostly used for alleviation of patient symptoms – as in our patient with severe anemia – rather than for improvement of prognosis. However, in combination with systemic immunotherapy, some patients with oligometastatic disease have shown increased overall survival with complete resection of metastatic lesions.

Our patient developed likely metastases to the brain, warranting combination ipilimumab/nivolumab therapy, which has been shown to be effective against intracranial melanoma. BRAF inhibitors are also used for tumors with the BRAF V600E mutation with good intracranial penetration. Given the age of our patient and extent of metastatic disease, further surgery is likely unwarranted unless new symptoms arise.

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