



Metastatic melanoma to the bladder presenting as autonomic dysreflexia in a patient with paraplegia

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ABSTRACT

We report a case of a 66-year-old male with T2 American Spinal Injury Association Impairment Scale (AIS) A paraplegia who presented to Urology with worsening autonomic dysreflexia. Work-up identified a bladder mass treated by transurethral resection and pathologically confirmed as melanoma. Additional work-up revealed metastatic melanoma to the back and brain. The patient completely recovered with no evidence of disease more than two years after completing therapy. In this report, we review the presentation of metastatic bladder melanoma presenting with autonomic dysreflexia, which has never been previously described, and discuss the prognosis of metastatic melanoma to the bladder.

1. Introduction

Primary melanoma of the genitourinary tract is rare and accounts for less than 0.2% of all melanomas.¹ Most malignant bladder melanomas disseminate from a distant site, specifically cutaneous in origin, and offer greatest risk of mortality with a five-year survival rate of 5–19%.² We discuss a case of metastatic melanoma to the bladder that initially presented as autonomic dysreflexia. We review published literature to discuss epidemiology, clinical features, and management options for a disease which is most-typically associated with negative outcomes.

2. Case presentation

The patient is a 66-year-old Caucasian male with a history of T2 American Spinal Injury Association Impairment Scale (AIS) A paraplegia secondary spinal cord injury from a bicycle accident more than ten years prior. Previously, he was followed by Urology for the management of neurogenic bladder dysfunction. His bladder management included clean intermittent self-catheterization, and his yearly surveillance included ultrasound imaging of the bladder and kidneys. In addition, he reported infrequent recurrent urinary tract infections (UTIs), which were managed with Hyophen (methenamine, benzoic acid, phenyl salicylate, methylene blue, and hyoscyamine sulfate), and his neurogenic overactive bladder symptoms were well-controlled with anti-muscarinic

medications (trospium). He then developed a significant change in his lower urinary tract symptoms, and he ultimately presented to the emergency department with several episodes of gross hematuria, worsening autonomic dysreflexia, increasing UTI frequency, and fevers. As his autonomic dysreflexia symptoms could not be controlled, he was temporarily managed with an indwelling Foley catheter to decompress his bladder and treated with several courses of antibiotics for presumptive UTIs. He was referred back to Urology for additional work-up and treatment.

Three years prior, he presented to dermatology for a dysplastic, ulcerated nevi on his neck that became more palpable over the course of several months. He underwent wide local excision of the nevi (0.9-mm Breslow depth with positive margins), and pathology revealed pT1b malignant melanoma of his right upper neck with vascular invasion. At that time, the patient underwent biopsy of one intramuscular lymph node, which was negative for metastatic melanoma. He deferred undergoing sentinel node biopsy due to the risks of deep neck excision. The patient had no evidence of recurrence until a new lesion was discovered on his back at about the same time as his urologic symptom presentation. As a result, he underwent a metastatic work-up, including computed tomography (CT) scans of the head, neck, chest, abdomen, and pelvis. CT scan of the abdomen/pelvis identified an enhancing, lobulated, intraluminal bladder mass associated with the anterior inferior bladder wall that was concerning for bladder neoplasm (Fig. 1).

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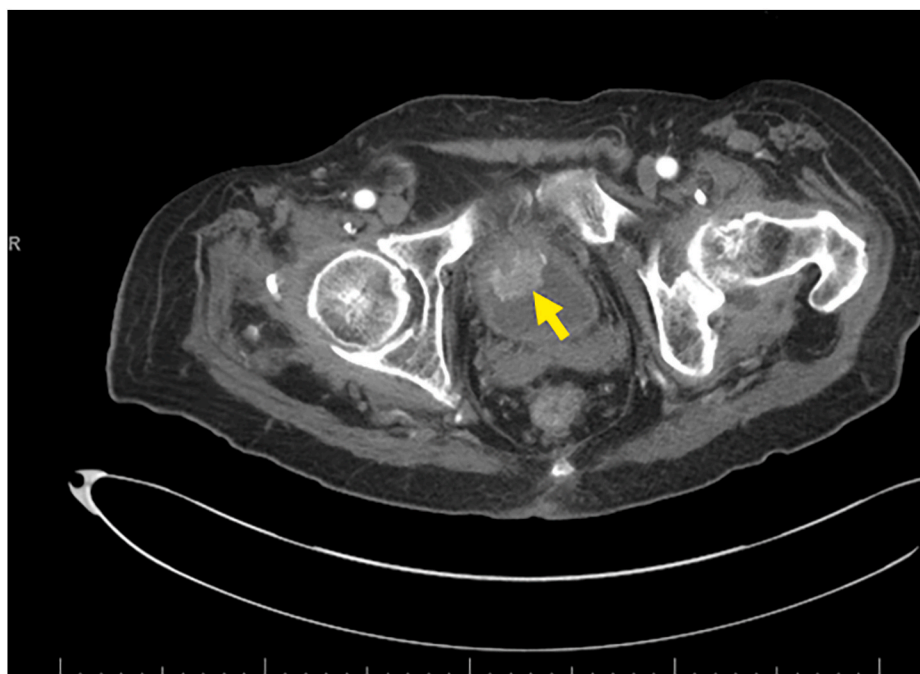


Fig. 1. Axial contrast-enhanced CT image through the pelvis shows a lobulated, enhancing soft tissue mass arising from the right anterior, inferior bladder wall and protruding into the lumen (arrow).

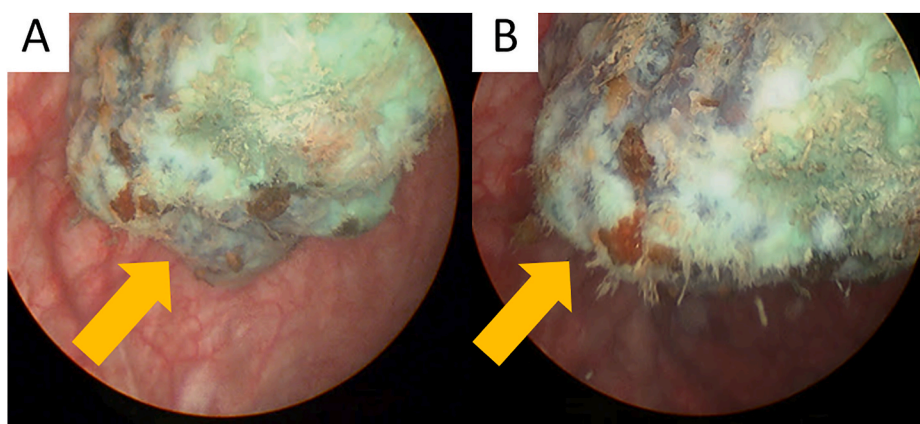


Fig. 2. Cystoscopic images (A and B) showing a well-circumscribed 2 × 3cm pigmented mass of the anterior inferior bladder wall (arrows).

While metastatic disease is unusual in this location, the hyper-enhancing appearance of the mass was concerning for melanoma, which was suspected based on the patient's history.

The patient then underwent cystoscopy that revealed a 2 × 3cm pigmented, pedunculated, spherical bladder mass (Fig. 2), and subsequent transurethral resection of the bladder tumor with incomplete resection of the mass due to bleeding and deep transmural invasion. Histopathology indicated metastatic melanoma.

Post-operatively, the patient's autonomic dysreflexia symptoms improved, and he was able to return to clean intermittent self-catheterization for bladder management. The patient then began having a recurrence of his autonomic dysreflexia symptoms. A repeat cystoscopy revealed a free-floating, necrotic bladder mass, which was removed at a later date. This resulted in complete resolution of autonomic dysreflexia symptoms. The patient is now status-post nivolumab immunotherapy for melanoma found on his neck (pT1b) and lower back (pT2bN1), and he received stereotactic radiosurgery to two right occipital 4mm brain metastases. The patient is currently asymptomatic and returned to his baseline level of bladder symptoms. He has no

evidence of any residual or recurrent disease more than two years after completion of immunotherapy.

3. Discussion

Melanoma has a high and rapid metastatic potential, and the following criteria are used to assist in determining if the melanoma is of primary origin: 1) no previous cutaneous lesion, 2) no evidence of regressed cutaneous malignant melanoma, 3) no evidence of other visceral primary melanoma, 4) pattern of recurrence should be consistent with the region of initial malignant melanoma, and 5) margins of bladder lesion should contain atypical melanocytes similar to those seen in the periphery of primary mucous membrane lesions.³ Melanomas of the bladder are typically treated with excision. Depending upon clinical features, IL-2 can also be considered with the presence of gross hematuria precluding its use.

Even with therapeutic interventions, patients typically survive only three years after their initial diagnosis, with median survival of 12 months once melanoma has metastasized.^{2,4} The patient discussed in

this report is now six years status post his first wide local excision of melanoma on his neck, more than three years months post-transurethral resection of bladder tumor, and more than two years status post completion of immunotherapy. He remains asymptomatic with stable bladder function.

Autonomic dysreflexia, a condition most commonly found in patients with spinal cord injury above the level of T6, is caused by dysregulation of the autonomic nervous system when there is a noxious stimulus below the level of injury.⁵ The majority of cases are due to a stimulus of urological origin, such as a UTI, distended bladder, or obstructed Foley catheter.⁵ Symptoms can include severe headache, diaphoresis, flushing, and piloerection above injury level as well as dry and pale skin below injury level. Additional symptoms include visual disturbances, nasal stuffiness, anxiety, nausea, and vomiting.⁵ While autonomic dysreflexia most commonly is due to spinal cord injury, other rare causes can be responsible, as evidenced in this case report.

4. Conclusion

We report the first known case of metastatic melanoma to the bladder presenting as autonomic dysreflexia in a patient with spinal cord injury. A high level of suspicion for bladder causes, such as malignancy, should be employed when evaluating patients with autonomic dysreflexia.

CRedit authorship contribution statement

Cherry A. Abdou: Writing – original draft, Data curation. **Eric H. Wolff:** Writing – review & editing, Visualization. **Andrew T. Tracey:** Writing – original draft, Data curation. **Adam P. Klausner:** Writing – original draft, Writing – review & editing, Supervision.

Declaration of competing interest

The authors declare that there is no conflict of interest regarding the publication of this article.

References

1. Truong H, Sundi D, Sopko N, Xing D, Lipson EJ, Bivalacqua TJ. A case report of primary recurrent malignant melanoma of the urinary. *Bladder*” *Urology case reports*. 12 Nov. 2013;1:1 2–4.
2. Sandru A, Voinea S, Panaitescu E, Blidaru A. Survival rates of patients with metastatic malignant melanoma. *Journal of medicine and life*. 2014;7(4):572–576.
3. Stein BS, Kendall AR. Malignant melanoma of the genitourinary tract. *Official Journal of the American Urological Association, Inc*. 1984;132(5):859–868.
4. Venyo AKG. “Melanoma of the Urinary Bladder: A Review of the Literature” *Surgery Research and Practice*. 2014. 2014:605802.
5. Eldahan KC, Rabchevsky AG. Autonomic dysreflexia after spinal cord injury: systemic pathophysiology and methods of management. *Auton Neurosci*. 2018 Jan;209:59–70. <https://doi.org/10.1016/j.autneu.2017.05.002>. Epub 2017 May 8. PMID: 28506502 Free PMC article. Review.