

Bladder-sparing Approach in a Woman with Muscle-invasive Primary Bladder Melanoma

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ABSTRACT

Primary bladder melanoma (PBM) is an extremely rare tumor. Herein, we present a 39-year female evaluated for a history of dysuria and hematuria for one month and a solid mass of 23x15 mm detected on the left lateral wall of the bladder. The transurethral resection (TUR) of the tumor revealed muscle-invasive malignant melanoma. Laparoscopic partial cystectomy (LPC) and bilateral pelvic lymph node dissection (BPLND) were performed since other sites of melanoma were excluded. In this article, the effects of tumor characteristics and minimally invasive treatment options on survival are discussed in a patient with muscle-invasive PBM.

Key Words: Primary bladder melanoma, Laparoscopic partial cystectomy, BPLND.

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INTRODUCTION

Primary bladder melanoma (PBM) is extremely rare; and up to 30 cases have been reported in the literature so far. Therefore, there is no standard treatment established for both local and advanced disease. Transurethral resection (TUR), partial cystectomy (PC), radical cystectomy (RC), immuno-chemotherapy as well as radiotherapy can be considered as treatment options. Also in selected patients, RC is recommended because of the risk of bladder recurrence or systemic metastasis shortly after local treatment in patients suffering from PBM. The factors that determine the prognosis in primary disease are the presence of metastatic lesions, tumor size and depth of invasion, but the overall survival rate is less than 3 years. It has been reported that RC did not achieve the expected positive effect on survival.¹ Herein, we aim to report the positive effect of laparoscopic partial cystectomy (LPC) and bilateral pelvic lymph node dissection (BPLND) immediately after the initial diagnosis on the survival of a patient with muscle-invasive PBM.

CASE REPORT

A 39-year female patient who was evaluated for hematuria and dysuria and was found to have a mass

lesion about 3 cm in size on the left side of the bladder on the abdominal ultrasonography (USG). A detailed history revealed no additional systematic diseases, medications, and any surgical intervention in that nonsmoker patient. On physical examination, the only positive finding was suprapubic tenderness. The routine laboratory tests of the patient were as follows: hemoglobin 10.2 g/dl, creatinine 0.9 mg/dl; urine analysis: leukocyte = 3 /HPF, erythrocytes = 17 /HPF, and nitrite, negative. MRI was performed for complete evaluation of the urinary tract. No mass was detected in the kidneys and ureters, while a 23 x 15 mm, well-circumscribed, solid mass was detected on the left lateral wall of the bladder (Figure 1A). The cystoscopic examination revealed a solid mass lesion located in the superolateral region of the left ureter orifice, with areas of brown and black pigmentation. Complete TUR of the bladder tumor was performed. After pathological evaluation by H & E, the tumor was examined by immunohistochemical staining. Melan-A (Figure 1B), HMB-45 (Figure 1C), and S-100 (not shown) were positive while cytokeratin was negative. Final pathology was reported as malignant melanoma invading the detrusor muscle.

Afterwards, a detailed evaluation was performed to exclude other primary foci. Dermatological examination of the patient was carried out with digital dermatoscopy; and biopsies were taken from suspected lesions for melanoma. There were a total of two dysplastic nevi: one of them on the right eyelid and another one in the gluteal region. Moreover, ophthalmologic examination and upper gastrointestinal system endoscopy and colonoscopy were also normal.

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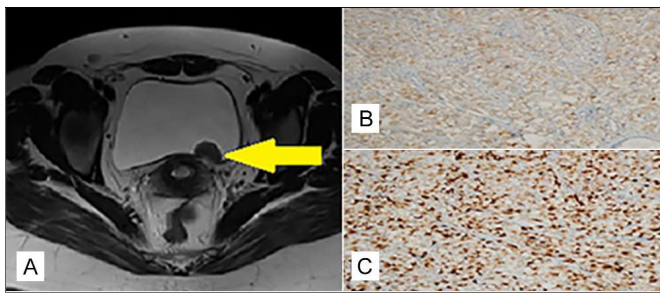


Figure 1: (A) MRI images at the time of initial diagnosis: The arrow indicates the tumor in the bladder. (B) Positive staining with Melan - A (DABx200). (C) Positive staining with HMB45 (DABx200).

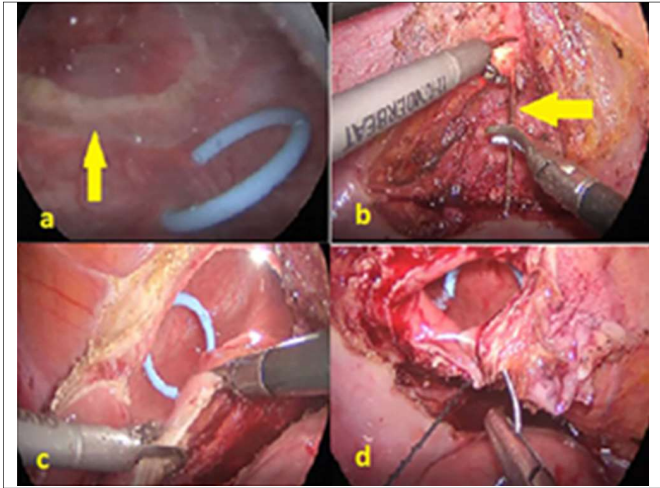


Figure 2: (a) The old resection area on cystoscopy and marking of the borders with bipolar cautery before laparoscopy. (b) Laparoscopic view of the surgery field at the beginning of the operation; use of the needle with the aid of the endoscope from the bladder to the abdominal cavity to indicate the initial dissection border. (c) complete excision of the tumor area. (d) detrusor closure.

One month after TUR, fluorodeoxyglucose (FDG) positron emission tomography-computed tomography (PET-CT) revealed no active FDG-avid uptake anywhere in the body. These findings were evaluated in the multi-disciplinary oncology board and LPC with BPLND was recommended. After obtaining informed consent from the patient, the bladder was re-evaluated by cystoscopy. In the previous TUR field, no pathological findings other than hyperemia were detected and the circumference of this field was marked with the help of bipolar cautery. Then, a double J stent was inserted into the left ureter due to its proximity to previous TUR field. The pre-marked bladder wall was excised laparoscopically with the help of another surgeon *via* cystoscopy and endoscopic needle to mark the dissection border from the bladder to the abdominal cavity. Although no pathological finding was found on radiologic images, BPLND was carried out for staging the disease and a total of 16 reactive lymph nodes were removed, and bladder repair was completed (Figure 2). Operation time was 90 minutes and there were no postoperative complications detected. Cystoscopy, radiology and FDG PET-CTs on follow-up of the patient at 4 years and 4 months, showed no recurrent or residual tumor.

DISCUSSION

PBM was first described by Wheelock in 1942. Till 2018, approximately 30 cases of PBM have been reported in the literature.² In our case, the patient was managed in a pre-emptive manner by implementing LPC as well as BPLND following TUR. No recurrence or systemic metastasis have been detected out for 52 months. It is reported that bladder metastasis of malignant melanoma is more common than PBMs. Furthermore, in patients dying of melanoma, renal and urinary bladder metastases are reported in 45% and 18%, respectively.³

The present patient complained of hematuria and dysuria for one month. Gross hematuria is the most frequent presenting symptom. It may present in different ways depending on the size and location of the tumor in the bladder including dysuria, pelvic pain, or bladder outlet obstruction. Some authors have reported that recurrent urinary tract infections, could be a presenting feature in some patients with PBM.⁴

The initial diagnosis was made by the detection of the tumor on cystoscopy and by taking tissue samples with TUR. It is recommended to obtain samples and evaluate them for the presence of atypical melanocytes in the peritumoral bladder mucosa.¹ The presence of atypical cells is related to poor prognosis and recurrence. It may be useful to use immunohistochemical staining such as HMB-45, Melan-A, and S-100 in making diagnosis during the pathological examination. A detailed examination of patients is recommended to exclude skin, visceral or mucosal primary foci. However, PBM cannot be differentiated from bladder cancer radiologically; it is challenging to make the final diagnosis without tissue sampling. CT, MRI or FDG PET-CT can be used to evaluate the presence of local and distant metastases.^{3,5}

In the present patient, cystoscopy was performed as an initial diagnostic tool. Having detected a brown-black solitary tumor in the bladder during cystoscopy, TUR was performed as the initial diagnostic and treatment modality. The tumor, tumor base, as well as the peritumoral bladder mucosa, were resected separately and sent for histopathological examination. The diagnosis was confirmed by immunohistochemical staining. No atypical melanocytes were detected in the peritumoral bladder mucosa on microscopic evaluation. The ultimate pathology report revealed malignant melanoma invading the detrusor muscle.

There is no standardised treatment protocol has been available for PBM. All of the treatment approaches proposed for this disease are based on anecdotal case reports. TUR, PC, RC, chemotherapy as well as radiotherapy can be considered as potential treatment options. It is also stated that immuno-chemotherapy might be useful for patients who are not suitable for radical surgery.¹

Lange-Welker *et al.* have reported a patient with a fist-sized MM in the bladder diverticulum that was managed

by PC. No metastasis was detected on postoperative radiological evaluation. However, six weeks later, recurrence occurred. The patient was not eligible for RC and received palliative radiotherapy, and died three months later due to the cranial metastasis.⁶ Pacello *et al.* have reported a 82-year man with PBM. In this case report, TUR of the tumor was performed as initial treatment and diagnosis. Both lamina propria and detrusor invasion was seen, and there was also epithelial atypia revealed on pathological examination. Postoperative CT scan of abdomen, chest, and brain, as well as bone scan, were normal. Recurrence was detected in the patient who did not accept any additional treatment after 3 months and the patient died 9 months later due to widespread systemic metastasis.³ Al-Ammari *et al.* have reported a 72-year patient with PBM. A 5-cm-sized tumor was detected in the bladder and the patient died within 5 months despite the fact that no metastases were detected in the clinical evaluation after TUR.⁷ Due to the development of early metastases after local treatment, some authors have suggested that RC is a more suitable option. Survival of more than 3 years has not been achieved due to the poor prognosis of the disease.⁸⁻¹⁰ It has also been reported that adjuvant chemotherapy and radiotherapy may have an effect on patient survival.²

In the present case, the patient was informed about all treatment options. It was decided to perform LPC and BPLND as an additional treatment because of the risk of recurrence in the early period after local treatment. The factors with positive effect on patient survival can be described in this patient as; the mass size <5 cm at the time of diagnosis, no atypical cells on the peritumoral mucosa, no tumors in PC specimen as well as no lymph node metastasis. The fact that the disease was not metastatic but primary vesical may be considered as another feature that contributed positively to the survival.

The lack of randomised controlled trials and meta-analyses for the treatment of patients with PBM cause uncertainty in standard treatment. Nonetheless, in conclusion, this report showed that LPC and BPLND can be considered as an alternative treatment option after the initial TUR in patients with muscle-invasive PBM.

PATIENT'S CONSENT:

Informed consent was obtained from the patient after obtaining approval from the Ethics Committee of Ondokuz Mayıs University (OMU KAEK approval No. 2019/153).

CONFLICT OF INTEREST:

Authors declared no conflict of interest.

AUTHORS' CONTRIBUTION:

MNM: Conception and design, acquisition of data, and drafting of the manuscript, critical revision of the manuscript.

EO: Conception and design, acquisition of data, critical revision of the manuscript, supervision.

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