

# Paraganglioma of Urinary Bladder Managed by Laparoscopic Partial Cystectomy in Conjunction with Flexible Cystoscopy: A Case Report

Hossam S. El-Tholoth, MD, Sami Al Rasheedi, MBBS, Faris Alharbi, MBBS, Waleed Alshammari, MBBS, Tarek Alzahrani, SUB, and Ahmed Al Zahrani, SUB

## Abstract

**Background:** Paraganglioma of the urinary bladder (PUB) is exceedingly rare, accounting for <0.1% of all urinary bladder tumors. Various challenging treatment options are available.

**Case Presentation:** A 67-year-old female presented with malignant hypertension on four medications for which investigation was done. An observation of having functioning PUB was noted. She was admitted and laparoscopic partial cystectomy was done with the guidance of flexible cystoscopy. She had a smooth postoperative course and was discharged home, then catheter was removed after cystogram. Histopathology confirmed the diagnosis of a bladder paraganglioma. Finally, during the last follow-up, the patient was asymptomatic with controlled blood pressure and normalized catecholamine levels with no evidence of recurrence.

**Conclusion:** PUB is an exceedingly rare tumor that can be managed with minimally invasive techniques such as laparoscopic partial cystectomy with cystoscopy guidance.

**Keywords:** paraganglioma of urinary bladder, laparoscopic partial cystectomy, cystoscopy

## Introduction

PARAGANGLIOMAS OF THE URINARY BLADDER (PUB) is remarkably rare, accounting for <0.1% of all urinary bladder tumors.

## Case Presentation

A 67-year-old female presented with malignant hypertension on four medications for which investigation by an endocrinologist showed positive metaiodobenzylguanidine scan (MIBG), elevated catecholamines levels, and CT with contrast showed intravesical tumor with a tentative diagnosis of bladder paraganglioma of size 3.5 × 3 cm as seen in Figure 1 and Figure 2.

She was admitted and was prepared for surgery. Laparoscopic partial cystectomy was conducted (she was placed in low lithotomy position and laparoscopic procedure was started by mobilizing the bladder in combination with flexible cystoscopy that showed a mucosal bulge located in anterior

bladder wall with a wide base near the bladder neck. The light of the endoscope guided the start of resection with a safety margin and then we excised the mass completely with a good safety margin as shown in Figure 3, and bladder was closed in one layer laparoscopically. During surgery, she developed one attack of hypertension and was managed by anesthesia with no intraoperative or immediate postoperative complications. She had a smooth postoperative course and was discharged home, then the catheter was removed after cystogram. Histopathology confirmed the diagnosis of bladder paraganglioma (Fig. 4). As well, a follow-up at 1 year post-operation, the patient was asymptomatic with controlled blood pressure and normalized catecholamines level with no evidence of recurrence.

## Conclusion

PUB is an exceedingly rare tumor that can be managed with minimally invasive techniques such as laparoscopic partial cystectomy with cystoscopy guidance.

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Department of Urology, Prince Sultan Military Medical City, Riyadh, Saudi Arabia.

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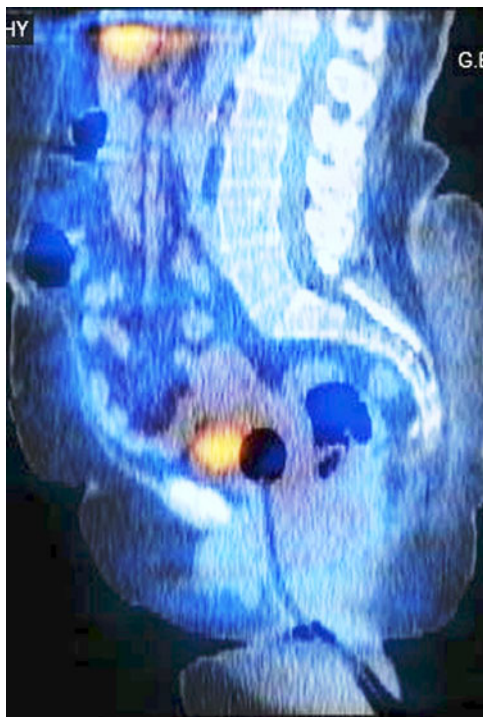




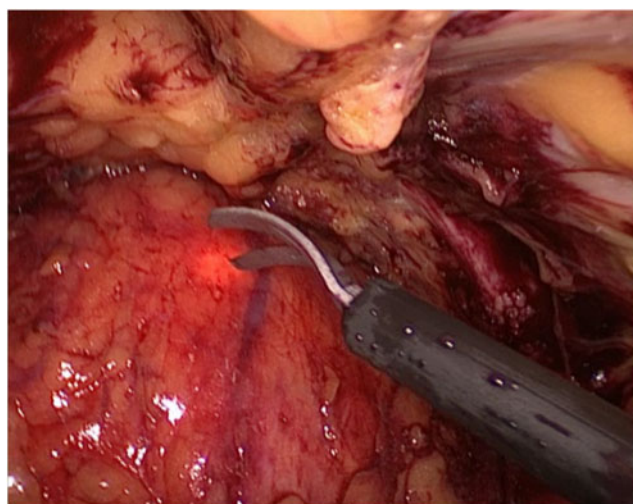
**FIG. 1.** Sagittal reconstructed CT scan image showing bladder mass.

### Discussion

PUB is rare <1% of bladder tumors and 6% of all paragangliomas. Out of these PUB, only 10% show malignant behavior. There are no specific sites inside the urinary bladder more vulnerable to PUB. However, it is commonly reported at the lateral wall, posterior wall, and trigone. PUB can

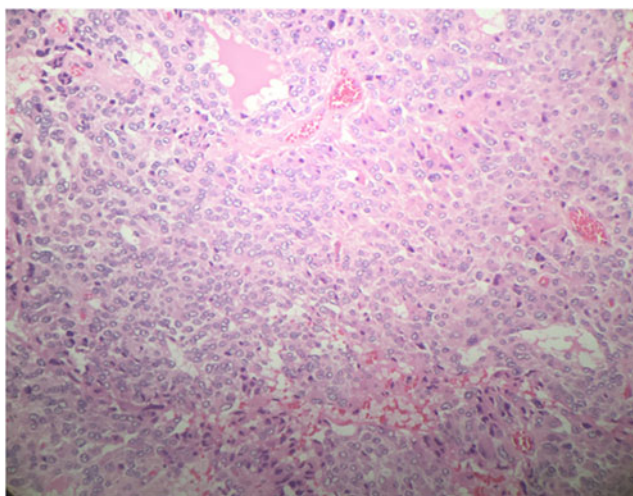


**FIG. 2.** MIBG scintigraphy—sagittal view showing bladder mass. MIBG, metaiodobenzylguanidine scan.



**FIG. 3.** Laparoscopic view to start resection over guidance of cystoscopy light.

be misdiagnosed with other urothelial bladder tumors. Most of the reported cases are younger than those of urothelial carcinoma with a median age of 43 years.<sup>1,2</sup> In our case study, the patient is a 67-year-old coping with the median age of other urothelial tumors. The clinical presentation of functioning paraganglioma is manifested by a headache and uncontrolled hypertension despite medications. The use of MIBG and elevated urinary catecholamine levels help the tentative diagnosis of the case. Immunohistochemistry and characteristic histologic features are the cornerstones for confirmative diagnosis with high index of clinical suspicion.<sup>2</sup> There are various treatment options for PUB, including transurethral resection, partial cystectomy, and radical cystectomy.<sup>3</sup> Because the paraganglioma of the urinary bladder in our case was preoperatively known to be functioning, a large size, and located in the anterior bladder wall, laparoscopic partial cystectomy was the preferred option of treatment, as intraoperatively uncontrolled hypertension may



**FIG. 4.** Histopathology slide of the lesion confirming the diagnosis of bladder paraganglioma.

be disastrous in such cases. To the best of our knowledge, the only laparoscopically assisted partial cystectomy for a known preoperative functional paraganglinoma that was effectively treated without sequels under cystoscopic guidance was previously reported by Gofrit et al.<sup>4</sup> for open partial cystectomy.

#### Disclosure Statement

No competing financial interests exist.

#### References

1. Lin O, Cardillo M, Dalbagni G, et al. Nested variant of urothelial carcinoma: A clinicopathological and immunohistochemical study of 12 cases. *Mod Pathol* 2003;16:1289–1298.
2. Thrasher JB, Rajan RR, Perez LM, et al. Pheochromocytoma of urinary bladder: Contemporary method of diagnosis and treatment options. *Urology* 1993;41:435–439.
3. Purnell S, Sidana A, Maruf M, et al. Genitourinary paraganglioma: Demographic, pathologic, and clinical characteristics in the surveillance, epidemiology, and end results database (2000–2012). *Urol Oncol* 2017;35:457.
4. Gofrit ON, Shapiro A, Katz R, et al. Cystoscopic-assisted partial cystectomy: Description of technique and results. *Res Rep Urol* 2014;6:139–143.

Address correspondence to:  
*Hossam S. El-Tholoth, MD*  
*Department of Urology*  
*Prince Sultan Military Medical City*  
*No. 7889, Makkah Almokarama Branch Road*  
*Riyadh 11159*  
*Saudi Arabia*

*Email:* urologist\_hossam@yahoo.com

#### Abbreviations Used

MIBG = metaiodobenzylguanidine scan  
PUB = paraganglioma of urinary bladder

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