

Approach to Treatment of a Non-functional Retrovesical Bladder Paraganglioma

Sir,

Paragangliomas are rare neuroendocrine tumors originating from chromaffin cells on the migration route of neural cells. We aim to present a case of retrovesical bladder paraganglioma, which was of non-functional type, and to discuss its treatment, by excision using laparoscopic partial cystectomy used with synchronous transurethral imaging.

A 32-year male was admitted to our clinic with a complaint of suprapubic pain. Physical examination, routine blood tests, and urinary analysis of the patient did not reveal any pathology. There was no history of irritative voiding symptoms, hematuria, palpitations, facial flushes, or hypertensive attacks. The blood pressure (BP) was 124/80 mm Hg. The 24-hour urine metanephrine level was 78.8 μg (reference: 30-350 $\mu\text{g}/24$ hour), and normetanephrine level, 358.5 μg (reference: 111-419 $\mu\text{g}/24$ hour). Ultrasonography and computed tomography revealed a hypo-echoic solid lesion of 35x18 mm, situated on the left posterolateral wall of the bladder. Its centre had a slightly hyper-echoic appearance (Figure 1).

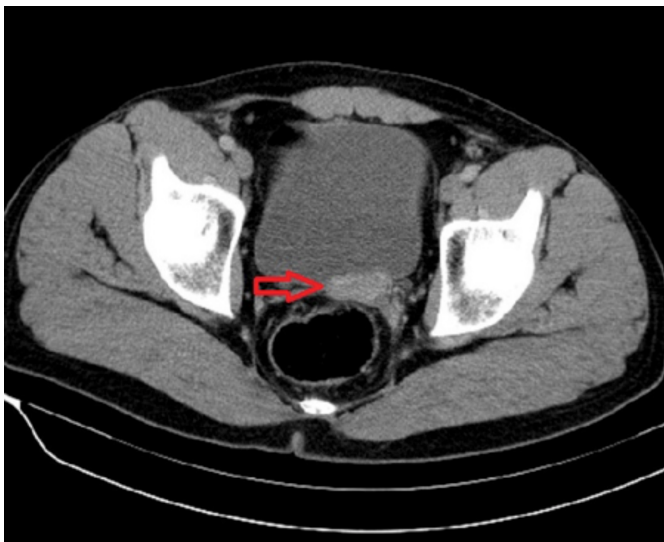


Figure 1: Retrovesical mass on computed tomography.

In the cystoscopy performed under general anesthesia, a 2x3 cm lesion pressing on the lumen at the opposite wall of the bladder was observed. The biopsy result obtained from the retrovesical mass using transrectal ultrasonography was reported as neuroendocrine tumor suspicious for malignancy. On immunohistochemical examination, positivity with vimentin, synaptophysin, CD56, neuron-specific enolase, and S-100 was found. On the magnetic resonance imaging, it was reported as an irregular bordered lesion of 31 x 21 mm on the left side of bladder posterolateral wall.

Laparoscopic partial cystectomy was performed with synchronous transurethral view in lithotomic position (Figure 2). The BP of the patient, whose intra-operative BP measurements increased up to 200/140 mm Hg, was kept under control by anti-hypertensive medication. The final pathology was reported as paraganglioma. No primary tumor was found elsewhere. Postoperative 4-year follow-up showed no tumor recurrence or metastasis and no new symptoms.

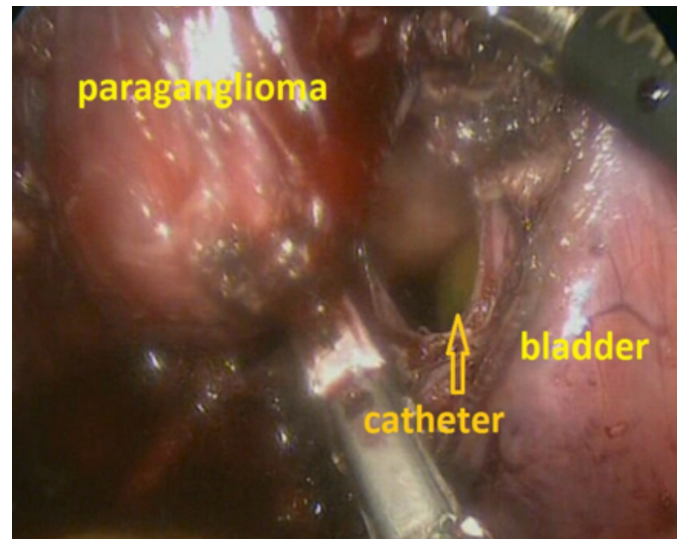


Figure 2: Laparoscopic view of retrovesical mass.

Paragangliomas are rare tumors originating from neuroendocrine cells associated with sympathetic nervous system. Tumors formed by these neuroendocrine cells originating from adrenal medulla are termed pheochromocytomas. Approximately 10% of the pheochromocytomas are extra-adrenal and termed as paragangliomas.^{1,2} These tumors can be found in practically every site along the migration route of the neural cells.² Bladder paragangliomas comprise 6% of all extra-adrenal paragangliomas. These are quite rare, and comprise 0.06% of all bladder tumors. The majority of genitourinary paragangliomas originate from the bladder (79.2%). The bladder is followed by urethra (12.7%), renal pelvis (4.9%) and ureter (3.2%).³ According to their clinical characteristics, these are classified into functional and non-functional types.⁴ Functional type is seen with 83% frequency in about 200 cases in the literature.⁵ Non-functional type is rarer and is difficult to diagnose preoperatively; and may be more dangerous/problematic due to intraoperative unexpected hypertensive attack risk.^{4,5} In our case, no typical clinical symptoms were observed, but hypertensive attack was observed during the operation/surgery. Gupta *et al.*⁶ reported that non-functional paragangliomas caused tachycardia and changes in blood pressure during the surgery.

Among the treatment options, there are transurethral resection and partial or total cystectomy including pelvic lymph node dissection, if necessary. Although gold standard method is controversial, laparoscopic partial cystectomy could be used as first-line procedure in pre-operatively diagnosed bladder para-

ganglioma cases, as it is less invasive and shows speedy recovery.^{2,7} There is no consensus on the follow-up procedure. Al-Zahrani *et al.* reported that blood and urine parameters, cystoscopy and imaging methods should be performed at least once a year.⁵

Simultaneous use of transurethral and laparoscopic extravesical approach seems to be a more reliable option for the excision of this rare lesion originating from the urinary bladder wall and growing into the retrovesical area. We believe that this approach may reduce intraoperative complications and increase the probability of negative surgical margins.

CONFLICT OF INTEREST:

The authors have no conflict of interest.

PATIENT'S CONSENT:

A written informed consent was obtained from the patient for the publication and the use of accompanying images of this case report.

AUTHORS' CONTRIBUTION:

MCC, NK, LS: Project development, data collection, analysis, manuscript writing.

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