



Pathology Page

Asymptomatic paraganglioma of urinary bladder

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A 58-year-old previously healthy woman was referred to a urologist for an incidental finding of bladder tumor on computed tomography (CT) [Figure 1a]. There was no urinary frequency, urgency, hematuria, or dysuria. No fever, weight loss, or micturition syncope was complained. She denied any family history of malignancy or hereditary disease.

Physical examination showed a vitally stable female with normal blood pressure. No discomfort was indicated during the lower abdominal examination. She was admitted for further workup. Laboratory studies revealed no significant finding. A cystoscope was conducted and showed a 2-cm broad-base tumor at the right bladder base [Figure 1b]. Transurethral resection of bladder tumor (TUR-BT) with tumor biopsy was performed. The results of histopathology revealed nests (zellballen) or trabeculae of polygonal cells, with pepper-salt-like nuclei and abundant granular cytoplasm, with pepper-salt-like nuclei and abundant granular cytoplasm [Figure 1c]. The pathological tumor margin was free indicating that the tumor was completely resected. Immunohistochemical stain revealed positive for cluster of differentiation 56 (CD56), chromogranin, synaptophysin, and S-100 and negative for cytokeratin 7 (CK7). Sustentacular cells were highlighted by S-100 staining [Figure 1d]. The diagnosis of paraganglioma of the urinary bladder was made.

The patient was discharged 1 day after the surgery. Postoperative urine examination for vanillylmandelic acid was followed, and the results were within normal range. Her condition was good when she returned to the urology outpatient department for a follow-up 1 month after the operation.

Pheochromocytomas, which are rare tumors of neuroendocrine origin, arise from neural crest-derived chromaffin cells [1]. Extra-adrenal pheochromocytomas are often referred to as paragangliomas [1]. In the genitourinary tract, urinary bladder is the most prevalent site for paragangliomas [2]. Case reports have described the presentations of paraganglioma of the bladder [3,4]. In this case report, we presented a case of asymptomatic paraganglioma of the urinary bladder, with typical pathological characteristics. Symptoms such as paroxysmal headache, palpitations, and sweating may not always be encountered in such patients.

Based on the activity of catecholamine that arises from the tumor, paraganglioma can be classified as functional or nonfunctional [2]. Functional bladder paragangliomas may be detected throughout the catecholamine-secreting symptoms including micturition syncope, hypertension, and hematuria [3]. Nevertheless, patients presenting without catecholamine-secreting symptoms are often underdiagnosed [4]. Careful physical examination for palpable mass and appropriate image study

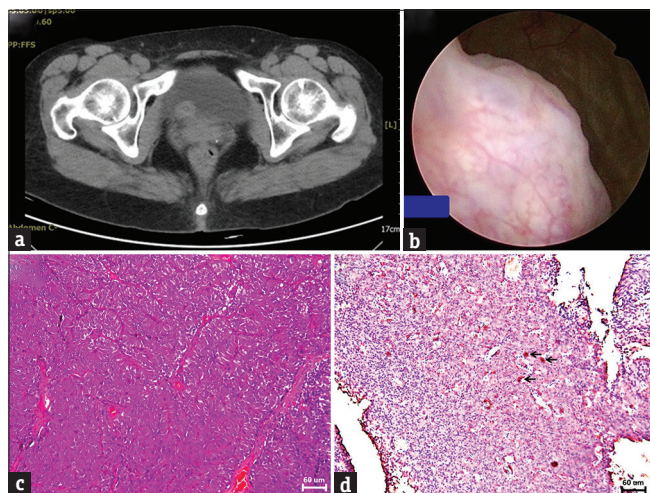



Figure 1: (a) A 2-cm hyperdensity lesion at the right urinary bladder was indicated in the abdominal computed tomography. (b) The image of cystoscope revealed a 2-cm broad-base tumor at the right bladder base. (c) Pathology indicated trabeculae of polygonal cells, with pepper-salt-like nuclei and abundant granular cytoplasm (H and E, ×100). (d) S-100 stain demonstrated the rare sustentacular cells, which were highlighted by the arrows (S-100, ×100)

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may be beneficial for such patients. In our case, the patient was incidentally found to have a bladder tumor on CT image.

General neuroendocrine markers such as CD56, chromogranin, synaptophysin, and S-100 were applied in our pathologic analysis. To distinguish between paraganglioma and carcinoid tumor, we utilized CK7 stain. Carcinoid tumors may stain positive for CK7 in the parenchyma, while paragangliomas are negative for CK7. In our histopathologic examination, CK7 showed negative, which was favored for paraganglioma.

Management of paraganglioma of the urinary bladder required subsequent surgical resection [5]. However, the extent of tumor invasion needs to be taken into consideration. Besides TUR-BT, partial cystectomy or chemotherapy may be beneficial for patients with vesicular muscle invasion or distant metastases.

In conclusion, we reported a relatively uncommon patient of asymptomatic bladder paraganglioma, which is difficult to diagnose preoperatively. Despite the rarity of paraganglioma of urinary bladder, patients with asymptomatic presentations required more attention.

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Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her

consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal the identity, but anonymity cannot be guaranteed.

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Conflicts of interest

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