

# Primary Paraganglioma of Seminal Vesicle

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To the Editor: Extra-adrenal paragangliomas are tumors that arise from neural crest-derived endocrine cells. They are most frequently found in the organ of Zuckerkandl but can be found anywhere along the sympathetic chain.<sup>[1]</sup> Seminal vesicle paragangliomas have been reported to involve bladder and prostate. However, only two cases of primary seminal vesicle paragangliomas were reported in medical literature to the best of our knowledge.<sup>[1,2]</sup> Here, we reported on one case.

A 44-year-old male patient with the family history of hypertension was admitted to the local hospital with a chief complaint of the lower abdominal discomfort and chest distress for more than 2 years. Subsequent examination revealed hypertension and coronary artery computed tomography (CT) did not show any abnormality. As a result, the patient received antihypertensive therapy. Symptoms happened more frequently, about one to two times per day since 6 months ago. Blood pressure was 200–260/120–150 mmHg at onset and partially responded to therapy as 120–130/90–100 mmHg. Therefore, the patient came to our hospital and was admitted in the endocrinology department. The elevated urine vanillylmandelic acid (VMA) and blood catecholamine were confirmed, and abdominal CT was taken. An occupying lesion in the left seminal vesicle was found, considering ectopic pheochromocytoma [Figure 1], while the adrenal glands and other organs are normal. After oral intake of phenoxybenzamine for 14 days, the patient was admitted to the urology department and underwent laparoscopic resection of the mass. The surgery went well and the mass was found to be paraganglioma of seminal vesicle on pathology. Postoperatively, the symptoms disappeared and the blood pressure returned to normal. Antihypertensive therapy was discontinued and no symptoms occurred during the short-term follow-up of 3 months. Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Extra-adrenal paraganglioma (pheochromocytoma) is a rare tumor which can be found anywhere along the sympathetic chain from the base of the skull and neck to the bladder and prostate gland. About 90% of sympathetic paragangliomas are intra-adrenal (pheochromocytomas). Furthermore, approximately 10% of all extra-adrenal paraganglioma are malignant.<sup>[3]</sup> In the genitourinary tract, the urinary bladder is the most common site for paraganglioma (79.2%), followed by the urethra (12.7%), pelvis (4.9%), and ureter (3.2%).<sup>[3,4]</sup>



**Figure 1:** Abdominal computed tomography showing an occupying lesion in the left seminal vesicle.

The histogenesis of seminal vesicle paraganglioma is unknown. Histologically, all paragangliomas show similar morphologic characteristics. Immunohistochemistry shows positive staining for the synaptophysin, chromogranin A, and CD56 neuroendocrine markers. Protein S100 highlights the sustentacular and tumor cells, which is in accordance with our case. Mitotic activity and necrosis have been regarded as some of the unfavorable prognostic factors in histopathology. The only consistent criterion for malignancy in paraganglioma at any site is metastasis.

The clinical manifestation of seminal vesicle paraganglioma may largely depends on the size and the functional status of the tumor.<sup>[1]</sup> The symptoms and signs of catecholamine overproduction such as hypertension, headaches, palpitations, sweating, and tachycardia may be seen. In general, an elevation of the 24 h urinary catecholamine metabolites and VMA levels can be detected as in our case. The standard treatment for localized or locally advanced

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seminal vesicle paraganglioma is surgery. Laparoscopic resection has been an effective management because it can magnify the anatomic structure for easier removal and decrease the trauma.

Primary paraganglioma of the seminal vesicle is rare but important to diagnosis in the differential diagnosis of extra-adrenal paragangliomas. Laparoscopic resection appears to be a safe and effective management for localized seminal vesicle paraganglioma.

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### Conflicts of interest

There are no conflicts of interest.

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