LETTER TO THE EDITOR

A Case of Renal Oncocytoma with Renal Venous Tumor Thrombus

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Renal oncocytoma is generally regarded as a benign renal tumor. We herein report a case of large renal oncocytoma with renal venous tumor thrombus. The patient may need to be carefully followed up because hematogenous metastasis may occur.

Keywords: renal oncocytoma, thrombus, metastasis, pathology, renal vein

To the Editor:

Renal oncocytoma is a benign renal tumor that was first described in 1942. Renal oncocytoma accounts for 3–10% of all renal tumors\(^1\),\(^2\) and is generally small.\(^3\) We herein report a case of large renal oncocytoma with renal venous tumor thrombus.

The patient was a 64-year-old woman who was referred to the Department of Uro-Oncology, Saitama Medical University International Medical Center (SIMC), for treatment of a right renal tumor (SIMC-Uro #9004, a unique non-sequential patient control number in the Department of Uro-oncology, SIMC). Computed tomography (CT, Fig. 1a and Supplemental Fig. 1) showed a 90-mm-diameter right renal tumor with thrombus in the right renal vein. The tumor and thrombus were heterogeneously enhanced by contrast medium. After receiving a clinical diagnosis of renal cell carcinoma (RCC, cT3aN0M0), the patient underwent right radical nephrectomy with thrombectomy. The resected tumor (87 × 85 × 75 mm) was macroscopically brown (Supplemental Fig. 2A) and microscopically extended into the renal vein (Fig. 1b). Most tumor cells were round with eosinophilic granular cytoplasm and round nuclei without mitosis (Fig. 1c, Supplemental Fig. 2B,C), suggesting that the tumor was a renal oncocytoma. The tumor thrombus adhered to, but did not invade, the venous wall (Fig. 1c,d). Immunohistochemical analyses (Supplemental Fig. 2D–H) and colloidal iron staining (Supplemental Fig. 2I) confirmed that the tumor was pure oncocytoma, but not an oncocytic/chromophobe hybrid tumor or chromophobe carcinoma.\(^4\) No tumor recurrence was reported after 1 year.

We herein described a case of renal oncocytoma with renal venous tumor thrombus. The thrombus microscopically appeared to adhere to the venous wall. Difficulties arise with discriminating large renal oncocytoma from RCC using imaging modalities such as CT.\(^5\) In contrast-enhanced-CT examinations, oncocytoma is generally hypervascular and contains a central scar. In a retrospective analysis of the present case, the hypovascular area in the tumor (asterisk in Fig. 1a) was suggestive of a central scar, but was diagnosed as the central necrosis of RCC.

On June 19th, 2017, we performed a PubMed search using the following terms: “adenoma, oxyphilic”[MeSH Terms] OR (“adenoma”[All Fields] AND “oxyphilic”[All Fields]) OR “oxyphilic adenoma”[All Fields] OR oncocytoma”[All Fields] AND (“thrombosis”[MeSH Terms] OR “thrombosis”[All Fields]) OR “thrombus”[All Fields] AND English[lang]. There were eight hits, but none contained a report of oncocytoma with tumor thrombus. Venous invasion of oncocytoma is reported to be 2% or less; however, oncocytoma with a thrombus seems to be very rare.\(^6\)

The present case may suggest the malignant potential of oncocytoma. Three cases with metastases were previously reported. Case 1 (sex and age unknown) involved liver metastasis, which was confirmed by needle biopsy at the time of radical nephrectomy. Vascular invasion

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Supplemental Figure 1 & 2 are available in the on-line version only.

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was microscopically detected in the primary tumor, and the pathological stage was pT3. However, metastasis remained stable for 58 months without treatment. Case 2 involved a surgically treated oncocytoma. However, this case showed metastases to the liver and bone 18 months after surgery. Case 3 involved a woman who underwent nephrectomy and was diagnosed with oncocytoma in her 70s. Nine years after surgery, she developed multiple liver masses that were pathologically diagnosed as metastatic oncocytoma. She died of brain hemorrhage, not of metastatic oncocytoma.

In conclusion, although oncocytoma is generally regarded as benign, huge oncocytoma with tumor thrombus, such as that seen in the present case, may need to be carefully followed up because the oncocytoma with venous thrombus may cause hematogenous metastasis.

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Conflicts of Interest

The authors declare that no conflicts of interest exist.

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