

## Oncology

## Renal myxoma, a case report and review of the literature

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## ARTICLE INFO

## Keywords:

Myxoma

Kidney

Case report

Renal neoplasm

## Introduction

Myxoma is a rare benign tumor which can be seen in different parts of the body, such as the skin, bones, and viscera.<sup>1,2</sup> The most common location of myxoma is the skeletal muscle and its occurrence in the kidney is a rare event. Myxoma of the kidney is most commonly located in the parenchyma, and capsular involvement is extremely rare.<sup>3</sup>

Here, we report an extremely rare case of renal myxoma in a middle-age man. To the best of our knowledge, about 16 cases of renal myxoma have been described in the English literature so far.

## Case report

A 56-year-old man presented with a 6 month history of vague right flank pain and hematuria one day prior to admission. There had been no history of trauma, dysuria and fever. The only positive history was hypertension and he was under treatment with amiodarone. Physical examination was negative and no tenderness or mass was detected.

The laboratory findings were as follows:

Hemoglobin: 15.9g/dl White blood cell:  $4.6 \times 10^3/\text{mm}^3$

PLT:  $233 \times 10^3/\text{mm}^3$

International normalized ratio (INR):1

Blood urea nitrogen (BUN):11mg/dl

Creatinine: 1.4 mg/dl

Na:142 mmol/L, K:3.7 mmol/L, PSA:2.45ng/ml

Urinalysis showed micro-hematuria and urine cytopathology was negative for malignancy. Abdominopelvic ultrasonography showed a

large hyperechoic mass in the lower pole of the right kidney, measuring  $85 \times 48 \times 65\text{mm}$ ; according to the presence of fat content, the possibility of angiomyolipoma was suggested. Abdominopelvic CT scan demonstrated a large heterogeneous hypodense to isodense mass in the lower pole of the right kidney, measuring  $63 \times 61\text{mm}$  and containing fat in some parts of the mass that showed mild enhancement after administration of contrast material (Fig. 1). A few para-aortic sub-centimeter lymph nodes up to 8mm were also noted. The patient underwent right partial nephrectomy through midline abdominal incision with the preoperative diagnosis of renal cell carcinoma.

Gross examination showed mucoid tumor with slimy appearance and a gray to white glistening and gelatinous cut surface. Microscopically, the tumor cells show inconspicuous border and oval nuclei with inconspicuous nucleoli. Mitotic activity was absent and there was no atypia (Fig. 2).

Immunohistochemistry was performed to confirm the diagnosis which showed only positive vimentin. Cytokeratin, desmin, HMB45, S-100, and SMA were all negative. Proliferative activity (Ki-67) was negative (Fig. 3).

With the above findings, diagnosis of myxoma was confirmed. Now after six months of follow-up, the patient is well and completely symptom-free.

## Discussion

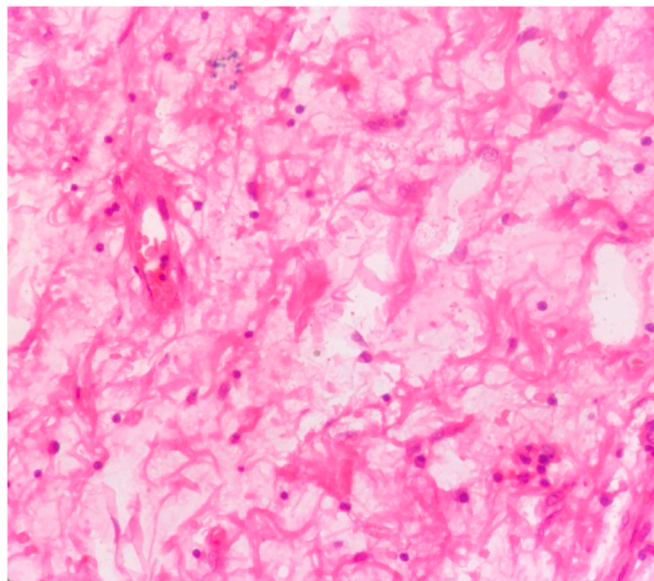
Myxoma is a rare benign mesenchymal tumor which is most commonly seen in the skeletal muscle, especially large muscles. Myxoma of

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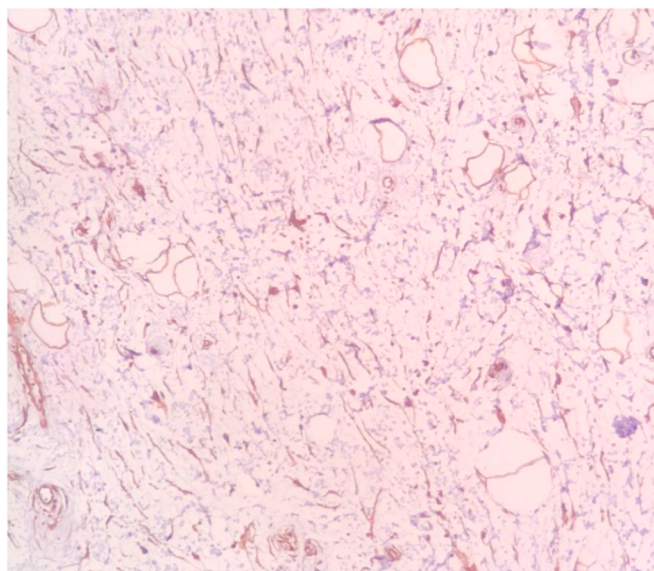
E-mail address: [alirezamakarem2001@gmail.com](mailto:alirezamakarem2001@gmail.com) (A. Makarem).



**Fig. 1.** There are two solid hypodense to iso dense inhomogenous mass lesions in the lower pole of the Rt kidney measuring (66\*53 and 63\*61 mm) which contains fat in some parts of them and show mild enhancement.



**Fig. 2.** The high-power view showing inconspicuous cell borders and oval nuclei with unremarkable nucleoli and the lack of atypia.



**Fig. 3.** Immunoreactivity of the cells for vimentin.

the kidney is very rare. Most of the previously reported cases have been incidentally detected and in cases with clinical manifestations, flank pain was the most common presenting symptom.<sup>4</sup>

The first case of myxoma was reported by Virchow in 1863, as a benign mesenchymal mass, and in 1887 Hulk introduced the first case of myxoma arisen from the capsule of kidney.<sup>5</sup> The origin of renal myxoma from the renal capsule is less common than parenchymal renal myxoma.<sup>3</sup> The cell origin of myxoma is fibroblast. This tumor shows a gelatinous gross appearance due to production of glycosaminoglycan in the tumor.

In the microscopic study of this benign mass, the spindle-shaped cell can be seen in the myxoid stroma and pleomorphism, and mitotic activity is not observed. In all studied cases, the tumor cells stained were positive for vimentin in immunohistochemical findings and in most cases s-100 protein, pancytokeratin and smooth muscle actin were negative.

Renal myxoma is a large heterogeneous mass in imaging exams which is hyperechoic in ultrasonography (US) and hypodense in CT. US is one of the initial steps to detect the mass, but CT and magnetic resonance imaging (MRI) are recommended for diagnosis, evaluation and management of an unknown renal mass. Myxomas feature in imaging is regular, multilobulated and well-defined and the mass can only shift the renal structures without invading them. Although imaging is required to differentiate myxoma from malignancy, definitive diagnosis is determined by pathological evaluation.

In English literature for most cases, nephrectomy has been reported due to suspicion to malignancy. In the follow up of the patients, until now, there has been no sign of malignancy, such as metastasis and recurrence.

In conclusion, with diagnosis of this rare and benign tumor, we can benefit from preserved unaffected kidneys and reduce the surveillance costs after nephrectomy. Advanced imaging models such as CT guided biopsy and PET (positron emission tomography) can help us to get closer to the diagnosis, but for definitive diagnosis, we need immunohistochemistry evaluation.

### Conflicts of interest

The authors declare that they have no conflicts of Interest

### Acknowledgment

The authors would like to thank nasrin shokrpour English department for his editorial assistance in the Research Consulting Center (RCC) of Shiraz University of Medical Science for improving the use of English in the manuscript.

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