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Renal Oncocytoma Management in advance renal failure

Akbar Mahmood, Ali Lawati

Unit of Nephrology, Dept. of Medicine Sultan Qaboos University Hospital, Muscat, Oman

Introduction. The presentation of a renal mass presumes a malignancy unless proven otherwise by histologic evaluation.

Presentation of the case. We present a case of a 40-year-old man with advance uremia necessitating renal replacement.

Results. Radiologic images showed a right renal mass and the patient underwent a nephrectomy. The pathologic diagnosis was a benign renal neoplasm, oncocytoma. This neoplasm is not a cause of renal failure but may be associated with other malignant lesions. Focal segmental glomerulosclerosis was the reason for renal failure. The lesion was discovered incidentally during the workup of chronic kidney disease.

Discussion. Histopathology delineated two separate pathologies designing the management plan.

Conclusions. After a few months of haemodialysis, the patient was able to receive a renal transplant - a therapy of choice as oncocytoma is a benign condition which doesn't preclude transplantation.

Keywords: Chronic kidney disease, oncocytoma, renal transplant.

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For correspondence:
Sultan Qaboos University P O Box:482,123
Al-Khoud, Seeb Muscat, Oman
E-пошта: drakbar696@hotmail.com

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ORCID IDs
Akbar Mahmood
https://orcid.org/0000-0002-4289-4247
Ali Lawati
https://orcid.org/0000-0001-8973-2520

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Authors worked and analysed this case critically once they planned to publish it.
Dr. Ali helped in setting the outline and describing the case and in the discussion, while
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Університет султана Кабуса, 482.123
Аль-Худ, Зееб Мускат, Оман
E-пошта: drakbar696@hotmail.com

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ORCID IDs
Akbar Mahmood
https://orcid.org/0000-0002-4289-4247
Ali Lawati
https://orcid.org/0000-0001-8973-2520

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Автори критично опрацювали та проаналізували цей випадок, коли планували його опублікувати. *Доктор Алі* допоміг у встановленні структури та опису справи та в обговоренні, в той час як доктор *Акбар* отримав згоду, зібрав усі дані, включаючи обстеження і відредагував публікацію.

Фінансування. Автори декларують відсутність фінансування у підготовці даної статті.

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Роль ниркової онкоцитоми в прогресуючій нирковій недостатності

Махмуд Акбар, Лаваті Алі

Відділення нефрології, відділ медицини,
Лікарня університету султана Кабуса, Мускат, Оман

Вступ. Наявність об'ємного утворення в нирках є злоякісною пухлиною, якщо гістологічне дослідження не покаже інший результат.

Опис клінічного випадку. Ми розглядаємо випадок 40-річної жінки з прогресуючою уремією, що вимагає трансплантації нирки.

Результати. На рентгенівських знімках виявлено об'ємне утворення в правій нирці, пацієнтці було проведено нефректомію. Анатомічний діагноз вказує на доброякісне новоутворення в нирці, онкоцитому. Це новоутворення не є причиною ниркової недостатності, але може бути пов'язаним з іншими злоякісними патологічними змінами. Причиною ниркової недостатності був фокально-сегментарний гломерулосклероз. Вогнище було виявлено випадково під час обстеження на предмет хронічної ниркової недостатності.

Обговорення. Гістопатологічне дослідження виділило дві окремі патології, що зумовили план лікування. Після кількох місяців гемодіалізу пацієнтка змогла пройти трансплантацію нирки.

Висновки. Вибрано це лікування, оскільки онкоцитома є доброякісним станом, що не виключає трансплантацію.

Ключові слова: хронічна ниркова недостатність, онкоцитома, трансплантація нирки.

Introduction

A 40-year-old Sudanese man (visiting family here) was brought to the emergency room with few a week-long history of fatigue, anorexia, weight loss (unintentional) of eight kilos over two months, nausea, and vomiting. He also noted a reduction in his urine output. He had been having some joint pains but denied any skin rash. 3 years before, he was diagnosed with HTN for which he was put on calcium channel blockers and angiotensin receptor blockers with reasonably controlled blood pressure. Renal function tests two years before were reportedly normal, however, ultrasonography (USG) performed in Sudan showed a right renal mass and some chronic changes in the kidneys. The patient has a family history of chronic kidney disease (CKD) in his only sister, whose biopsy showed extensive glomerulosclerosis and severe interstitial fibrosis and tubular atrophy.

Case description

Clinically, he the patient stable hemodynamically, in the euvolemic state with no signs

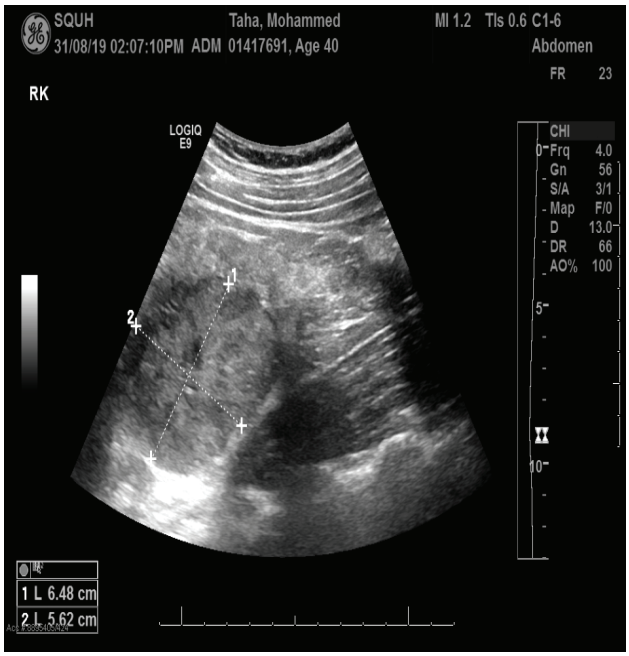

Figure 1. USG data of patient

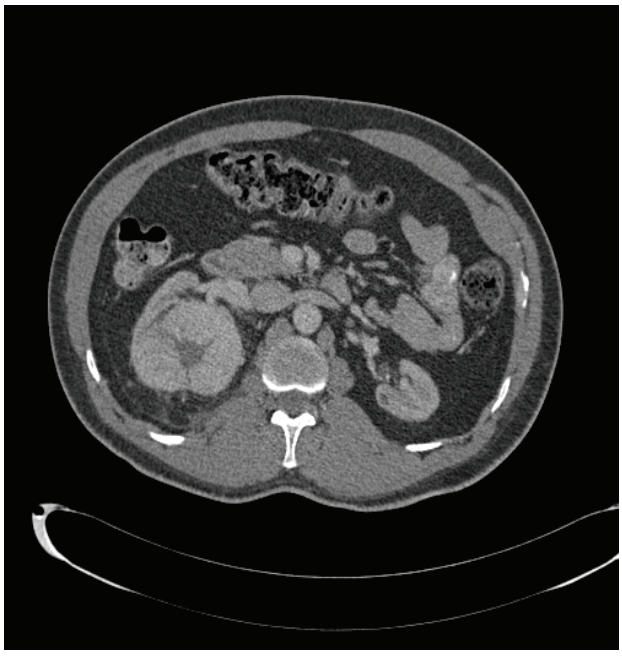

Figure 2. CT scan of patient

of uremia, encephalopathy, pericardial rub or volume overload. The abdomen was soft, non-tender and no mass was palpable. Both tests were normal on examination.

Patient's labs on arrival showed severe uremia consistent with CKD5 (eGFR 2ml/min) with profound hypocalcaemia (serum calcium1.1mmol), anaemia (haemoglobin 6.2g/dl) and hyperphosphatemia(2.7mmol/L). His ECG showed prolonged QT interval. Ultrasonography (USG) revealed that the left kidney was small with altered echogenicity and loss of corticomedullary differentiation. The right kidney showed large heterogenous mainly hyperechoic exophytic soft tissue mass occupying its upper pole measuring about 6x5 cm with peripheral vascularity and areas of echogenic foci. Urinary bladder showed no gross abnormalities.

Strong possibility of renal malignancy was assumed based on the workup necessitating surgical intervention. The need for urgent initiation of renal replacement was explained in detail to the patient and his family. After the agreement, intravenous calcium gluconate drip was set up with cardiac monitoring. Haemodialysis was initiated with tunnel dialysis catheter; anaemia was addressed with blood transfusion. After urologists' advice, contrast-enhanced computed tomography (CECT) of abdomen, pelvis and chest was continued to confirm the diagnosis and determine the mass lesion stage. Magnetic resonance imaging was not the preferred option as the patient was on dialysis, and there was a risk of nephrogenic systemic sclerosis related to the use of gadolinium in this study [1].

CECT result showed the right renal mass as was noted on the USG - in the right kidney - measuring 7x5 cm in size, showing homogenous enhancement with a central stellate non-enhancing scar. It was associated with the central foci of small calcifications and perirenal fat stranding. Vascularity of perirenal fat was found to be slightly increased along with mildly thickened Gerota's fascia. Atrophic left kidney with multiple small renal cysts. There was no hydronephrosis. Renal vein was well opacified with no thrombosis. There were no significant para-aortic lymph nodes. The radiologist concluded that the above findings were suggestive of right renal cell carcinoma (RCC), though central scar could be seen in renal oncocytoma. However, it is difficult to distinguish it from chromophobe RCC; histopathology is recommended for definitive diagnosis.

Laparoscopic right radical nephrectomy was performed uneventfully, and the kidney was

referred for histopathology. Macroscopic findings and descriptions showed that the specimen weighed 475 g, a well-circumscribed encapsulated soft lesion occupying upper 2/3 of the kidney compressing the hilum, measuring 6.5 cm X 4.5 cm. The lesion was solid, mahogany in colour with a central stellate scar. The lesion was abutting the capsule laterally. No lymph nodes were noted in the hilum. Microscopic findings revealed renal tissue with a well-circumscribed neoplasm composed of uniform cells arranged into nests, tubules and microcysts embedded in a myxoid stroma. Tumour cells had round nuclei with eosinophilic granular cytoplasm. No mitosis or nuclear atypia was noted. There was no lymphovascular space invasion or coagulative necrosis and the tumour did not extend into the perinephric fat and was not present at resection margins either (ureter, renal vein & renal artery). The other striking finding was non-neoplastic renal parenchyma with few obsolete glomeruli and some glomeruli with segmental scars. Tubules showed foci of tubular atrophy. There was no acute tubular injury or tubulitis. The interstitium showed extensive scarring with interstitial fibrosis, thyroidisation, and mild chronic inflammation. Arteries showed moderate fibro intimal thickening. On immunofluorescence, no staining for IgA, IgG, IGM, C1q, Kappa, Lambda, and C3. This picture led to the diagnosis of oncocytoma of the right kidney with a background of focal segmental glomerulosclerosis caused by extensive scarring.

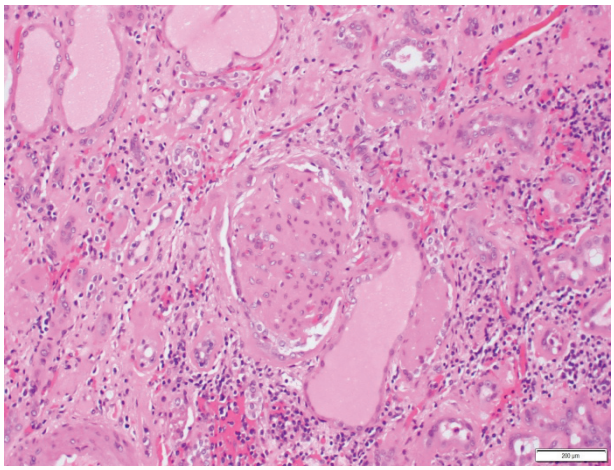

Figure 3. Glomerulus shows global sclerosis (H/E x 40)

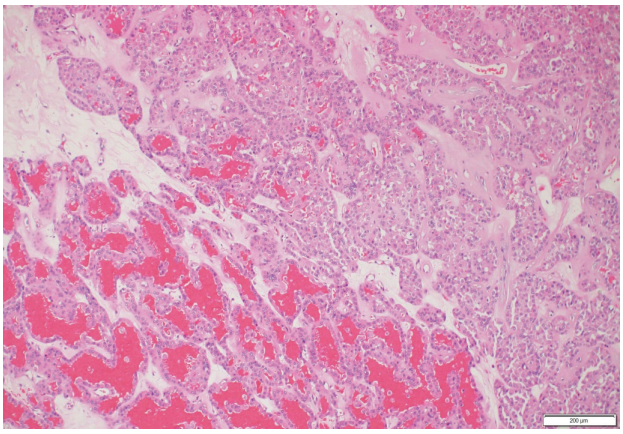

Figure 4. Tumour cells arrange into tubules and irregular nests (H/E x 40)

Oncologically, oncocytoma is a benign condition that requires no management. Therefore, after the recovery from the nephrectomy surgery, the patient underwent a kidney transplant.

Discussion

Renal oncocytoma is a benign tumour [2,3]. It is usually discovered incidentally during the examination for of loin pain, haematuria, or renal mass. The incidence of oncocytoma is 3-7% [4]. This disorder involves intercalated cells of collecting ducts. It is commonly seen in cases having tuberose sclerosis complex [5]. It is usually unilateral [6] and mimics with a malignant tumour of kidneys, especially renal cell carcinoma.

Some experts are of the view that it has peculiar radiological features but this does not carry weight in the diagnosis of such a big mass solely based on the imaging appearance [7]. Histology is the definitive method to confirm oncocytoma [8].

Coexistence of oncocytoma and renal cell carcinoma has also been reported in the literature with a prevalence of up to 30% [9,10, 11]. As a general principle, all renal masses must be considered malignant until or unless proven otherwise. A thorough examination must be expedited to get to the bottom of the diagnosis. Radiological workup will guide doctors in the planning of the intervention. Nephron sparing surgery is always a preferred option but, in our case,, the patient had atrophic kidneys and had approached a symptomatic end-

stage renal disease where no salvage measure could be helpful; another reason was the strong suspicion of renal cell carcinoma based on its size and renal failure. As it has been mentioned earlier, this oncocytoma growth pattern resembles renal cell carcinoma which is evident in this case. Since the percutaneous biopsy of the renal mass is not performed routinely, a post-surgical biopsy is a decisive way.

The challenge, in this case, is the dual pathology, i.e., the aetiology of CKD, which is not associated with oncocytoma. CKD was a separate disease process independent of the mass lesion which was a result of extensive glomerulosclerosis. Hypertension could be the cause or effect of this glomerulosclerosis. After biopsy results, the patient was explained in detail all the phenomena and reassured that renal transplantation could be a definitive choice between renal replacement therapy options. He was also explained that oncocytoma was an incidental finding. Hence, the person was assured that he could proceed with early renal transplant as per availability of the renal allograft without having to wait.

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