Case Report

RENAL CELL CARCINOMAIN A 36-YEAR-OLD FEMALE: A CASE REPORT.

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Abstract

Background: Renal cell carcinoma is rare in Africa including Nigeria though it accounts for the majority of the malignant renal tumour in our environment. In a 10-year review of all malignant renal tumours in Nigerian hospitals, renal cell carcinoma accounted for 72.2%.[1] In the University College Hospital Ibadan in a 5-year clinico-pathologic review, renal cell carcinoma accounted for 59.5% of all renal masses.[2] It accounts for 2 – 3% of all cancers worldwide.

Case Presentation: She presented with abdominal swelling,weight loss and recurrent abdominal pain of four-year duration. She was diagnosed of renal cell carcinoma following abdominal CT scan. She had presented earlier to a private hospital at the start of the illness from where she was referred to our centre, but she defaulted and resorted to herbal remedies. She however presented to us 4 years later due to persistent of symptoms. A diagnosis of metastatic renal cell carcinoma was made following contrast-enhanced CT. She was placed on palliative care but died on the 7th day of admission.

Conclusion: The finding of a renal mass should be promptly diagnosed and managed appropriately, and patients should be advised to seek appropriate measures of management after being adequately educated on their diagnosis and likely prognosis.

Keywords: Renal cell carcinoma, renal mass.

Cite this article: Ndu VO, Pedro EC, Ujah T. Renal cell carcinoma in a 36-year-old female: a case report. Yen Med J. 2020; 2(1):193-196.

INTRODUCTION

Renal cell carcinoma is rare in Africa including Nigeria though it accounts for the majority of the malignant renal tumour in our environment. In a 10-year review of all malignant renal tumours in Nigerian hospitals, renal cell carcinoma accounted for 72.2%.[1] In the University College Hospital Ibadan in a 5-year clinico-pathologic review, renal cell carcinoma accounted for 59.5% of all renal masses.[2] It accounts for 2-3% of all cancers worldwide. They are indolent, may be asymptomatic and occasionally have wide clinical presentation not directly related to the tumour mass, hence it is referred to as internist tumour.[3] The incidence of the tumour increases with age, rare before 40 years, and peak at the 7th decade. It is common in males, slow growing and have survival rate of 60% at 5 years.[3]Our patient was 36-years-old, a female and has had the tumour for about 4 years.

CASE PRESENTATION

She was apparently well until 4 years prior to presentation when she noticed abdominal swelling which was said to have been progressive and associated with recurrent right loin pain. The pain occasionally radiated to the groin and theback. There was no nausea, vomiting, or change in bowel habit but there was reduced appetite and early satiety. She has had progressive weight loss since onset of illness.There was no fever but she had jaundice and severe generalized body weakness. She had no leg swelling or facial puffiness.There was no history of oliguria but she had occasional history of haematuria.

She presented to a private hospital 4 years earlier with complaint of abdominal swelling and was referred to our centre then but she defaulted and resorted to ingestion of herbs.She decided to present this time following worsening of the symptoms.She is not a known diabetic or hypertensive.She is not on any long-term medication, and she is not allergic to any drug.

She was married with 2 children, all alive and well. Both parents were also alive and well. No family history of similar illness, hypertension or renal disease. She neither takes alcoholic beverages nor tobacco products.

General physical examination revealed a chronically ill-looking young woman who is not in any respiratory distress. She was mildly pale, icteric, acyanosed, not dehydrated, no finger clubbing. She had bilateral palpable significant inguinal lymphadenopathy. She weighed 72kg.
The pulse rate was 88beats/minute, full volume. There was no thickened arterial wall and no locomotor brachialis. There was radio-radial synchrony and no radio-femoral delay.Blood pressure was 120/70mmHg, jugular venous pressure was not elevated, apex beat was localized at 5th left intercostal space mid clavicular line and was not heaving.The 1st and 2nd heart sounds were heard. No murmurs were heard.
Respiratory rate was 16cycles/minute and regular.There were no signs of consolidation or pleural effusion.The abdomen was distended and moved with respiration. There was bilateral loin tenderness but worse on the right, and right hypochondrial region of the abdomen. The liver was 9cm below the right subcostal margin, firm, smooth and not tender with a span of 20cm. The spleen was not palpably enlarged but the kidneys were ballotable measuring 14cm by 6cm and 18cm by 6cm, left and right respectively.Theywere irregular, hard and mildly tender. There was no ascites.

The examination of the central nervous system did not reveal any abnormality.A clinical impressionmalignant renal tumour was made.
She had haematuria on dipstick urinalysis but no proteinuria or glycosuria. Other parameters were essentially normal.Theurine microscopy revealed red blood cells of 2 – 5 per hpf, epithelial cells of 0 – 1per hpf, no cast or crystals. Urine culture yielded no growth after 48hours incubation. The haematological and biochemical indices at presentation is shown in table 1.

Table 1: Results of Investigations

Investigations	Results	Reference range
Haematology		
Haemoglobin(g/dl)	7.9	12-16
White blood cell(L^{-1})	11.2 x 10^9	4-11 x 10^9
Platelet (L^{-1})	234 x 10^9	140-400 x 10^9
Neutrophil(%)	74	40-75
Lymphocyte(%)	26	20-45
Eosinophil (%)	0	1-6
ESR (MM/HR)	60	5-7
Biochemistry		
Serum Urea (mmol/l)	5.2	2.4-6.0
Serum creatinine(mmol/l)	97.2	60-120
Sodium (mmol/l)	130	135-145
Potassium(mmol/l)	4.4	3.5-5.0
Bicarbonate (mmol/l)	24	24-30
Serum calcium(mmol/l)	2.6	2.2-2.6
Phosphate (mmol/l)	1.6	1.1-1.7
Uric acid (mmol/l)	320	120-420
Total protein(g/l)	64	62-80
Serum albumin(g/l)	22	36-50
AST (IU/L)	46	≤35
ALT (IU/L)	50	≤45
ALP (IU/L)	90	30-120
Total bilirubin(umol/l)	24	5-17
Total cholesterol(mmol/l)	4.4	<5.2
Triglyceride (mmol/l)	1.2	0.3-1.7
HDL (mmol/l)	0.8	>1.12
LDL(mmol/l)	2.45	<2.6

Estimated glomerular filtration rate (eGFR) using MDRD was 78.1ml/min/1.73m^2.Chest x-ray was essentially normal.

Abdominal ultrasound scan showed hepatomegaly of normal echotexture, bilaterally enlarged kidneys measuring 18.6cm x6.8cm for the right kidney and 12.4 x 5.4cm for the left kidney. Both kidneys had multiple cyst scattered in the kidney parenchyma but worse in the right.

The abdominal CT scan [figure 1] showed bilaterally enlarged kidneys, with multiple complex cyst containing debris thought to be necrotic tissue. The architecture of the right kidney was completely distorted. The left kidney promptly excreted the contrast, but the excretion from the right kidney was delayed and reduced.

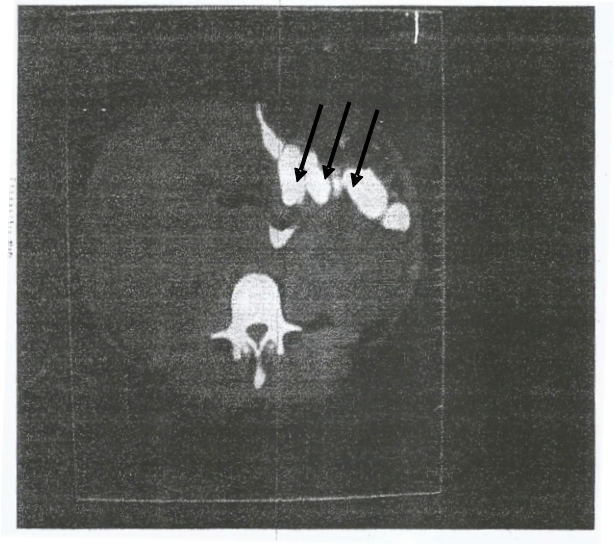

Figure 1: Abdominal CT scan showing markedly enlarged and distorted right kidney with complex cysts.

Diagnosis ofrenal cell carcinoma in a 36-year-old female was made. She was admitted into the ward and was placed on Caps Tramadol 50mg twice daily to relieve the pain. She was also placed on tablet vitamin B-complex 2 tablet twice daily and ferrous gluconate 300mg daily. She was also placed on liberal oral fluid intake.The urology team was invited to review and they advised conservative management considering the size of the tumour and possibly wide metastasis.She was also reviewed by the gastroenterology unit who also advised conservative measures.

By the seventh day on admission, her condition deteriorated, she became unconscious and subsequently died the following day.

DISCUSSION

There has been associations between various diseases and renal cell carcinoma like ADPKD, Von Hippel Lindau, and coloured blindness.[4]Other risk factors associated with renal cell carcinoma are smoking (more than 10 pack years), obesity, diuretic and analgesic abuse, chronic dialysis, and exposure to carcinogens like thorothrast, and cadmium.[5,6] Tumour occurring at this age are usually hereditary, bilateral and multiple. Unfortunately, we could not screen her family. Renal cell carcinoma was initially classified as a urological tumour but its polymorphic presentation, slow growth has led to late diagnosis, and the need for early participation of the nephrologists in management. Patients are initially asymptomatic, and diagnosis may be incidental during routine imaging or biochemical investigations. The clinical triad of pain, haematuria and palpable renal mass characterized renal cell carcinoma in less than 10% of the patients but these were all present in this patient. Other clinical features include fever, weight loss, anaemia, hypertension, ascites and features suggestive of scrotal varicocele, budd-chiari syndrome, and pulmonary embolism.

Considering the rarity of this tumour at our patient's age, we considered possibility of other causes of renal mass like:

Autosomal dominant polycystic kidney disease. The cysts are usually simple and the lining is smooth, regular and at that size hypertension or derangement in renal functions is expected.

Oncocytomas are unilateral and no evidence of malignancy on imaging.

Angiolipoma is unilateral, kidneys are markedly enlarged, no infiltration, not cystic but fatty, and usually associated with tuberous sclerosis.

Mesenchymal tumours are usually solid and not cystic, disseminate rapidly to give distant metastasis.

Xanthogranulomatous pyelonephritis is usually associated with recurrent fever, upper and lower urinary tract infection.

Contrast enhanced CT scan is the investigation of choice especially when ultrasound is not diagnostic as in my patient. The CT scan shows renal cell carcinoma as complex cyst with thick irregular outline, having variable sizes, and contains solid enhanced mass and distorted excretory system. It also shows evidence of metastasis.[8,9]

There are several pathological and molecular subtypes of renal cell carcinoma. This includes: (1) clear cell (75%) that originate from proximal tubule. Cells have clear cytoplasm, deletion of chromosome 3p typical. (2) Papillary (15%), originate from proximal tubule but are pathologically and genetically distinct. Frequently multifocal, classified into two subtypes, with different genetic and prognostic inferences. (3) Chromophobic (5%), originate from intercalated cells. Lack the lipids content of clear cell tumours and appear darker macroscopically. Chromosome 3p intact. (4) Oncocytic (<5%), originate from cells of the collecting duct. Oncocytes are recognized as well–differentiated cells with eosinophilic, mitochondria-rich cytoplasm. Generally, behave in benign manner. (5) Collecting duct (<1%), seen in younger age groups, aggressive tumour with some similarities to urothelial cancer, often presents with haematuria (6) Medullary carcinoma(<1%), variant of collecting duct carcinoma and associated with sickle cell traits.[9]Tissue biopsy was not considered in this patient due to severity of her illness.

Wide medical trials including chemotherapy, radiotherapy, hormone therapy and immunotherapy are going on in various countries, but interleukin 2 has shown good clinical response by the tumour cells.[10,11]Tumour excision or nephrectomy is curative when the tumour has not spread outside the renal capsule.

Our patient was referred to our centre at the early stage of the illness when surgery would have been rewarding but opted for alternative care. Four years later the tumour became inoperable with possible metastasis to the liver and obviously poor prognosis. Thus, delay in presentation or commencement of intervention should be discouraged.

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