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CASE PRESENTATION

Renal carcinoma: about a case

Carcinoma renal: a propósito de un caso

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ABSTRACT

Introduction: renal carcinomas represent between 2 and 3 % of malignant tumors in adults, seventh in men and ninth in women. In the latter, they often go unnoticed, with up to 50 % occurring incidentally and in asymptomatic patients.

Objective: to present the case of a patient with right renal carcinoma.

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Case presentation: the case of a 57-year-old male patient is presented, who came to the hospital with long-standing pain in the right lumbar fossa, now of renal colic type, hematuria, and with a palpable abdominal mass. In the clinical and complementary examinations carried out, the presence of a right renal carcinoma was confirmed, which required surgical treatment (right nephrectomy).

Conclusions: the adequate application of the clinical method, with a correct interrogation, added to the findings in the physical examination, the imaging study and the exclusion of differential diagnoses, constitute fundamental pillars for the diagnosis of renal carcinoma, since it can manifest itself variable form and the classic signs are frequently absent, making it essential to have a high index of suspicion.

Keywords: Renal carcinoma; Renal colic; Hematuria; Nephrectomy

RESUMEN

Introducción: los carcinomas renales representan entre el 2 y el 3 % de los tumores malignos en adultos, el séptimo lugar en el sexo masculino y el noveno en las mujeres. En estas a menudo pasan desapercibidos, presentándose hasta en un 50 % de forma incidental y en pacientes asintomáticos.

Objetivo: presentar el caso de un paciente con carcinoma renal derecho.

Presentación del caso: se presenta el caso de un paciente masculino de 57 años, que acude al hospital con dolor de tiempo de evolución en fosa lumbar derecha, ahora de tipo cólico renal hematuria y con masa abdominal palpable. En el examen clínico y los complementarios realizados se constata la presencia de un carcinoma renal derecho, que requirió tratamiento quirúrgico (nefrectomía derecha).

Conclusiones: la adecuada aplicación del método clínico, con un correcto interrogatorio, sumada a los hallazgos en la exploración física, el estudio por imágenes y la exclusión de diagnósticos diferenciales, constituyen pilares fundamentales para el diagnóstico del carcinoma renal, pues este se puede manifestar de forma variable y los signos clásicos están con frecuencia ausentes, por lo que resulta imprescindible tener un alto índice de sospecha.

Palabras clave: Carcinoma renal; Cólico renal; Hematuria, Nefrectomía

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INTRODUCTION

Genitourinary cancers in men include a large group of different types of tumors located mainly in the kidney, bladder, prostate, testicle and penis. Within these locations, renal cell cancer (RCC) is the tumor that is diagnosed in more than 273 000 people worldwide each year. CRC is the most common form of kidney cancer, especially in adults. It is the tenth most common neoplasm in men and the fourteenth in women. It represents 2 % of malignant neoplasms and is twice as common in men as in women. (1)

The average age at diagnosis is 64 years, with most patients diagnosed between the ages of 65 and 74. Kidney cancer is rarely found in people younger than 45 years. It is more common in blacks and Native Americans. Worldwide, an estimated 431 288 people were diagnosed with kidney cancer in 2020. (2)

The number of new cases of kidney cancer has been increasing for several decades, although it has slowed in recent years. Between 2009 and 2018, rates rose by about 1 % each year. Part of the increase is due to an increase in the use of imaging tests, in general. Imaging tests can detect small kidney tumors unexpectedly when they are done for another reason unrelated to cancer. (3)

Between 2015 and 2019, deaths from kidney cancer decreased by 2,5 % per year. In 2020, an estimated 179 368 people died from kidney cancer worldwide. The 5-year survival rate for people with kidney cancer is 76 %. However, survival rates depend on several factors, including the type of cancer and cell type, as well as its stage when it is first diagnosed. (4)

This study describes a case of renal carcinoma in a 57-year-old patient, diagnosed at the Abel Santamaría Cuadrado General Teaching Hospital in Pinar del Río.

CASE PRESENTATION

A 57-year-old married white male patient had a history of lower back pain three years ago. He was diagnosed with a herniated disc and underwent surgery. One year after surgery, he began to have colic-type right lower back

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pain of mild to moderate intensity, which improved with analgesics and anti-inflammatories, without being accompanied by any other symptoms.

He was admitted on January 30, 2023 to the Urology service of the Abel Santamaría Cuadrado Hospital, in Pinar del Río, due to lower back pain and hematuria. Three days before admission, he began to present frank hematuria accompanied by dull and constant colic pain - of varying intensity - in the right lumbar fossa, with no other accompanying symptoms. When he went to the emergency room, an abdominal and renal ultrasound was performed. It was decided to admit him for further study and treatment.

Physical exam:

The right kidney was palpable, pinchable and bouncing. Painful anterior and posterior right pyelorenal ureteral points and positive fist percussion maneuver in the right lumbar fossa.

Based on the description of the clinical characteristics, as well as the data obtained from the physical examination, it is suspected that the patient has a tumor of the right kidney and laboratory and imaging tests are indicated to corroborate the diagnosis.

Laboratory exams:

Hemoglobin: 121 g/l; Hematocrit: 0.37 l/l; Erythrocyte sedimentation rate: 32 mm/h; Glucose: 4.56 mol/l; Total protein: 71.7 g/l; Albumin: 45.7 g/l; ALT: 14 U/I; ASAT: 20 U/I; Alkaline phosphatase: 117 U/l; Creatinine: 103 mmol/l; and Uric acid: 224 mmol/l.

Imaging tests:

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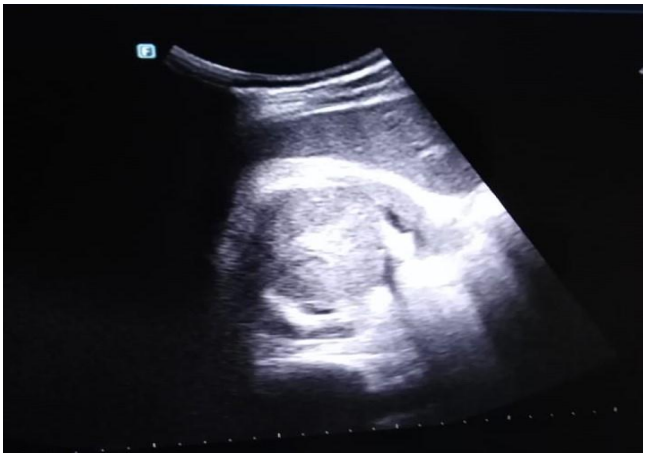

Fig. 1. Abdominal ultrasound showing a well-defined complex image of predominantly solid tissue, growing into the renal sinus with the appearance of a renal tumor that dilates the excretory system.

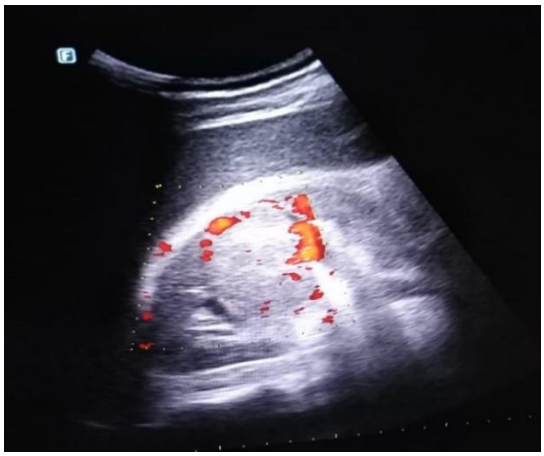

Fig. 2. Doppler ultrasound showing vascularization of the tumor image.

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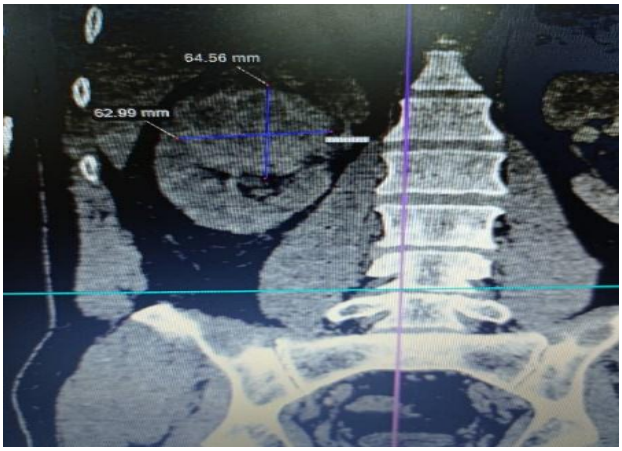

Fig. 3. High-resolution computed tomography showing a complex, heterogeneous image that captures contrast, grows towards the renal sinus and compresses the calyces without infiltrating them. Normal renal fat.

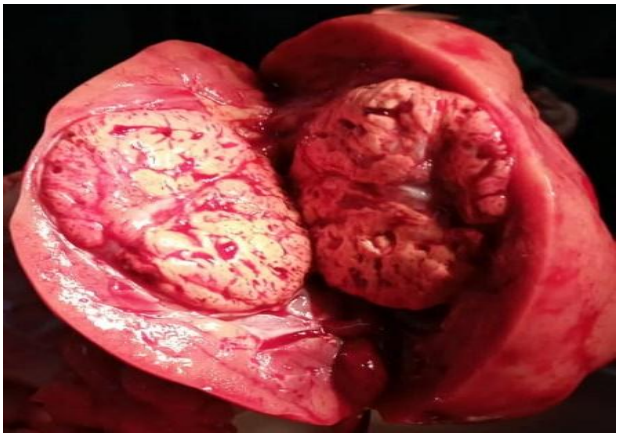

Fig. 4. Surgical specimen showing the space-occupying lesion, with biopsy showing clear cell renal carcinoma without infiltration into the renal fat or vessels.

The patient had a favorable clinical and surgical evolution, and was discharged five days later. He received adjuvant treatment with chemotherapy and is currently being monitored by Oncology.

DISCUSSION

This clinical case is presented due to the importance of the timely and accurate diagnosis of this nosological entity that often goes unnoticed, presenting incidentally and in asymptomatic patients in up to 50 % of cases. Recognizing its symptoms and signs immediately, as well as acting accordingly with the

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treatment of renal cancer contributes directly to the life expectancy of those who suffer from it, hence its diagnostic importance and its management.

The demographic characteristics of patients with renal cancer reported in the reviewed literature have points of agreement and disagreement with the results of this study.

Regarding age, this case coincides with the ages reported by other authors such as Springer Pérez et al., [5] who found a predominance of renal cancer in patients aged between 55-64 years (31,8 %), followed by patients between 45-54 years (22,7 %). This was rare in patients under 45 years of age (13,6 %).

For their part, Otunctemur A et al., [6] report a mean age at diagnosis of 60,7 years, with a standard deviation of ± 13,1. The male sex is also consistent with several studies such as that of Rossi SH et al., [7], who reported that 63,97 % of the total patients treated were male. Yohannan B et al., [8] report that renal cell carcinomas predominated in men (59,1 %) compared to women (40,9 %).

About two-thirds of people are diagnosed with kidney cancer when the cancer is found only in the kidney. For this group, the 5-year survival rate is 93 %. If kidney cancer has spread to surrounding tissues or organs or regional lymph nodes, the 5-year survival rate is 71 %. If the cancer has spread to a distant part of the body, the 5-year survival rate is 14 %. [9]

The patient presented in this study, diagnosed with clear cell renal carcinoma without infiltration of renal fat or vessels, shows a behavior similar to the results found by Wang Y et al., [10] who reported that local tumor invasion with infiltration of the renal capsule occurred in 20 % of patients, as well as the low frequency of thrombi in the renal vein, which may be due to the low frequency of patients who debut in stage IV and with metastasis.

Currently, due to the serious increase in the use of imaging techniques at the thoracic and abdominal level, the diagnosis of renal mass, whether benign or malignant, is raised in up to 50 % incidentally and in asymptomatic patients. In patients with hematuria (56 % of patients with renal cancer), flank pain (38 %), weight loss (27 %) and other symptoms related to the natural history of renal cancer, specific imaging studies are indicated. Most renal tumors are discovered incidentally thanks to the modern application of ultrasound and computed axial tomography; the patient is then asymptomatic. [11]

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Given the clinical picture of this case, it was necessary to rule out other diseases that could be causing the data obtained in the physical examination and the symptoms and signs present, among which were excluded:

1-) Renal lymphoma: It usually affects adults aged 60 years (middle age), with a slight predominance in men. They are often unilateral, as bilateral lymphoma is very rare. It is ruled out because the patient has no history of lymphoma as a systemic disease, nor factors such as chronic inflammatory processes and chronic pyelonephritis, Sjögren's syndrome, systemic lupus erythematosus or Epstein-Barr virus infection. In addition, although the clinical manifestations are similar to those of other renal tumors (with pain as the most frequent symptom), it may present with proteinuria, nephrotic syndrome or progressive renal failure with oliguria or anuria when it affects both kidneys. The physical examination may also reveal lymphadenopathy, which the patient does not present.

2-) Renal lithiasis: the main symptom is colic-type pain in the lumbar region, of acute onset and very intense, which can radiate to the abdomen and genitals. In addition, it is accompanied by urinary symptoms, dysuria, pollakiuria and, sometimes, hematuria and vegetative symptoms (sweating, nausea and vomiting). It does not subside with rest and is also recognized by the intensity of the pain and its intermittent-oscillating characteristics.

3-) Perinephritic abscess: this is a disease that presents with lumbar pain and sometimes with a palpable lumbar mass. It is ruled out because the clinical picture is usually abrupt, with symptoms evolving in two stages: in the first or parenchymal phase, lumbar pain, fever and chills appear, with no urinary symptoms; while in the perinephritic phase, lumbar muscle contracture, skin edema and sometimes a palpable mass appear. Pleuropulmonary symptoms such as chest pain or pleural effusion may exist.

4-) Polycystic kidney: this is a condition that presents with palpable kidneys and pain in the flanks. It is ruled out because the patient has no history of nephrolithiasis, nor family members who suffer from polycystic kidney disease. In addition, the patient does not have high blood pressure or symptoms of urinary infection. The pain and the rest of the symptoms usually improve or disappear if the cysts are decompressed.

Costabel et al. [12] found that the diagnosis was incidental in 79,7 % of patients and in symptomatic cases the main symptom was macrohematuria (56,6 %).

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For their part, Sirohi D et al. [13] reported that no patient in their study sample presented the classic triad of symptoms (pain, hematuria and palpable tumor mass), results that do not correspond to the clinical case of this study.

The study of renal masses includes imaging of the primary tumor, generally with a CT scan or a multi-stage contrast-enhanced MRI, as well as the study of metastases by means of imaging of the abdomen, retroperitoneum and thorax. However, increased detection and treatment of these tumors at earlier stages has not had an impact on the increasing mortality rate. Most publications describe populations from Saxon countries and it is not always possible to extrapolate the data to our population. [14]

CONCLUSIONS

The proper application of the clinical method, with a correct interview, added to the findings in the physical examination, the imaging study and the exclusion of differential diagnoses, constitute fundamental pillars for the diagnosis of renal carcinoma, since it can manifest itself in a variable way and the classic signs are frequently absent, so it is essential to have a high index of suspicion. Surgical resection is the accepted treatment —and, often, curative— for patients with clear cell renal cancer. Resection can be simple or radical, and the latter includes the removal of the kidney, the adrenal gland, the perirenal fat and Gerota's fascia, with or without dissection of the regional lymph nodes.

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STATEMENT OF AUTHORSHIP

GAHH: Conceptualization, investigation, methodology, project administration, validation, writing of the original draft, review, editing.

ZGG: methodology, research, writing of the original draft and editing.

GLHM: methodology, research, writing of the original draft and editing.

APP: methodology, research, writing of the original draft and editing.

CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest.

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