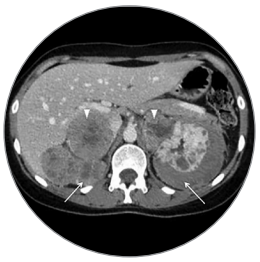

Bilateral Hypernephroma. A Case Report

Hipernefroma bilateral. Presentación de un caso

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Summary

Hypernephroma is a common kidney cancer that has a higher frequency in men. When it is bilateral and hereditary it has a different behavior and treatment. In this case we present a 24 year old female patients who was diagnosed with bilateral hypernephroma one year ago, by means of computed tomography (CT) and magnetic resonance imaging (MRI) with hereditary components and metastasis. Considering the family's background and the use of radiological studies, the diagnosis and treatment was performed without complications. The patient is being followed up.

Resumen

El hipernefroma es un tumor renal común, más frecuente en hombres. Cuando es bilateral y hereditario tiene una conducta y manejo diferentes. En este caso se presenta una paciente femenina de 24 años diagnosticada hace un año con hipernefroma bilateral, mediante tomografía computarizada (TC) e imagen por resonancia magnética (RM), con componente hereditario y metástasis. Considerando los antecedentes familiares y con los resultados de los estudios radiológicos se realizó tratamiento sin complicaciones. La paciente se encuentra en seguimiento.

Key words (MeSH)

Carcinoma renal cell
Kidney neoplasms
Magnetic resonance imaging

Palabras clave (DeCS)

Carcinoma de células renales
Neoplasias renales
Imagen por resonancia magnética

Introduction

Renal cell carcinoma (RCC) is the most common renal tumor, with an incidence of about 3% of all malignant tumors in adults (1, 2). Among them, the histological variety of clear cells is the most frequent (between 80-90%) (3). The treatment of choice is surgery, with exeresis of the tumor or the kidney, although in hereditary cases, particular attention should be paid to try to maximize the conservation of renal parenchyma without neglecting the risk of recurrence. Computerized axial tomography (CT) is essential in the diagnosis, although it can be useful to perform multidetector computerized tomography (MDCT) with angioCT technique to evaluate the vascularization of the kidney when renal parenchymal conservative surgery is considered as an option (4). In a high proportion of cases it takes place unilaterally; approximately 5% occur in both kidneys (5). The present work presents and discusses a case diagnosed as bilateral hypernephroma.

Case presentation

24-year-old female patient, smoker. With pathological history of diagnosed hypothyroidism a year ago and treatment with levothyroxine. Refers father who died of chronic renal failure and bilateral hypernephroma, at the age of 29.

Patient who initiated sexual relations at age 15, use of oral contraceptives, she came in a year ago for amenorrhea of two months of evolution. The tests laboratory ruled out pregnancy and diagnosed hypothyroidism, continued with amenorrhea during last 12 months. Three months ago he went to the service of ophthalmology by diminishing visual acuity, marked by the left eye. In resonance imaging (MRI), a presumptive diagnosis was established of pituitary macroadenomas, with which we intervened surgically. The histopathological analysis of the piece was negative for pituitary adenoma, which is led to the suspicion of secondary etiology injuries. He was in intensive care for 29 days in recovery. He later went to the hospital for generalized abdominal pain irradiated to the back.

Physical examination: weight 70 kg, height 1.73 cm, BMI 23.3 kg/m^2.

Laboratory tests were performed: hemoglobin 6 g/dL, for which 2 units of packed red blood cells were transfused.

Chest and abdomen angioCT was performed, which showed expansive lesions in both kidneys, predominantly in the right side, with evidence of moderate perirenal hematomas, associated to heterogeneous lesions in the suprarenal glands of possible secondary etiology and subcapsular or peripheral neoplastic vessels, findings that are indicative of renal cell carcinoma of clear cell variety (Figure 1).

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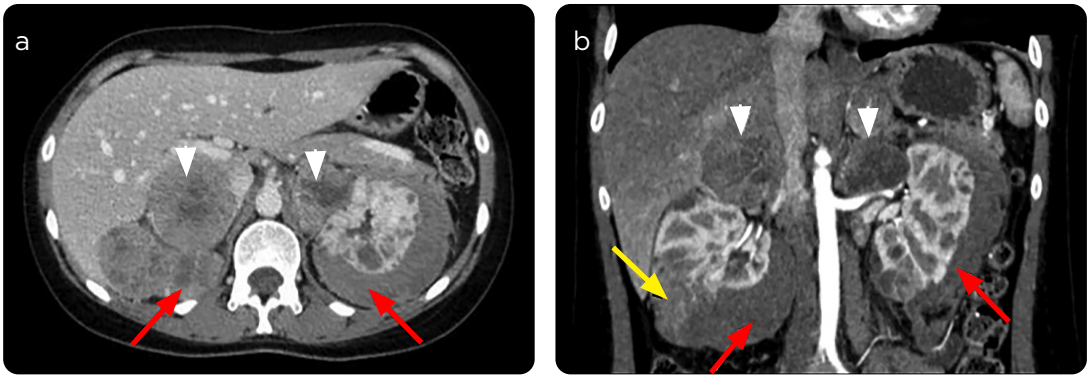

Figure 1. a and b) Abdominal Angiotomography. Axial section and coronal reconstruction with maximum intensity projection (MIP). Vascular expansive lesion raised in the lower pole of the right kidney (yellow arrow). Bilateral renal subcapsular hematoma (red arrows). Both adrenal glands of metastatic aspect (arrow heads).

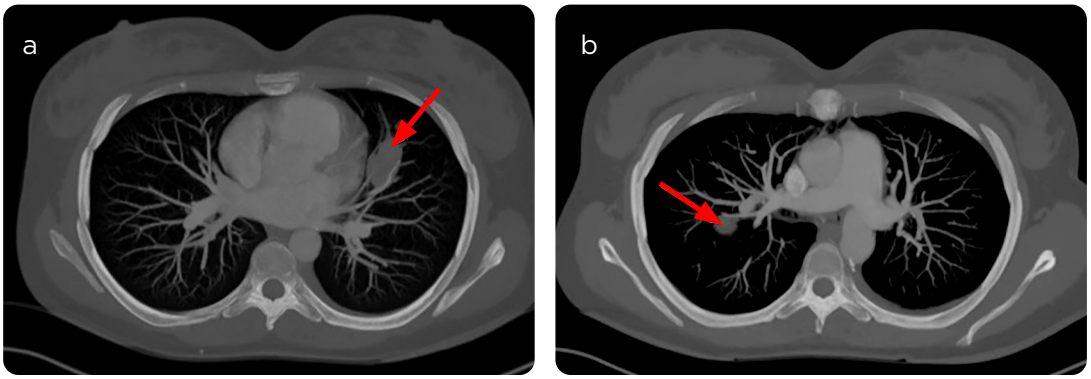

Figure 2. a and b) Chest angiotomography. Axial slices with maximum intensity projection (MIP). Nodular images of metastatic type secondary to the identified RCC (red arrows). Confirmed by lung biopsy.

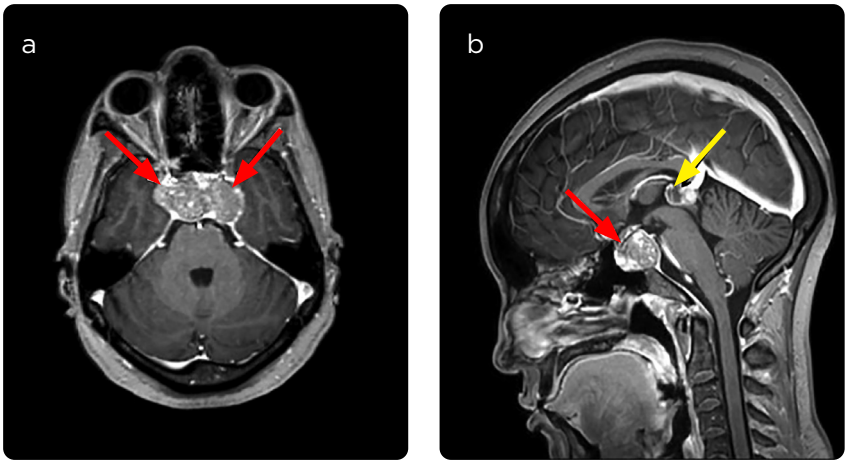

Figure 3. a and b) Magnetic resonance imaging of the skull, axial and sagittal sequences enhanced in T1 with gadolinium. Vascularized tumor in the selar region (red arrows) and in the pineal region below the splenius of the corpus callosum (yellow arrow).

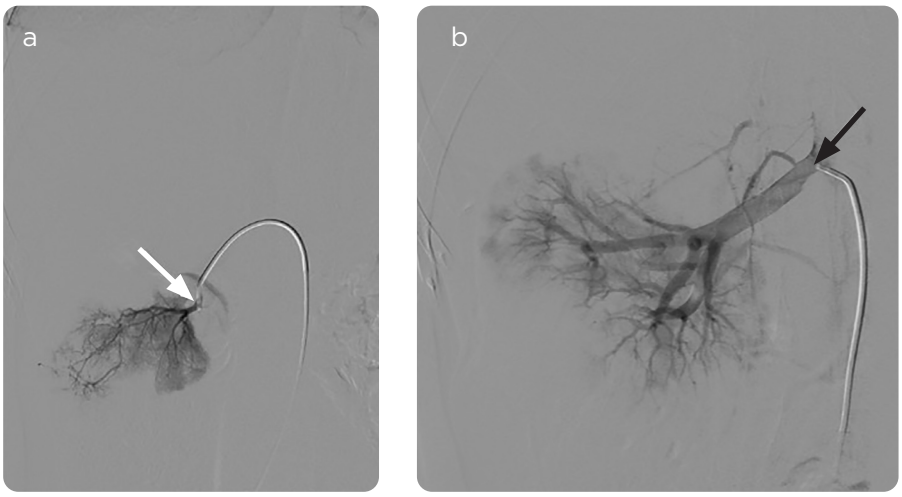

Figure 4. A) Super selective catheterization of the branch afferent to the inferior pole in frontal plane of the right kidney (white arrow) where distal microvascularization can be seen with tortuous vessels that form fine capillary network, with multiple intercommunications, which are projected in the most caudal and lateral portion of the own inferior pole of the organ, adopting nodular configuration. b) Proximal injection from an angiographic catheter located in the ostium of the right kidney artery (late arterial phase) (black arrow) where it is evident the total absence of the nodular tumor neovascularization observed before, towards the most caudal and lateral portion of the lower pole of the organ after the release of 300 microns emboospheres.

Nodular-looking lesions were also evident in both lung fields of the chest (figure 2).

Two days later, MRI imaging of the brain was performed, sequences with T1, T2 and T1 information with gadolinium, in which it was observed poly-lobed tumor mass in selar region, which destroys the back seal, as well as the anterior and posterior clinoids with growth suprasellar and to the left, where it compresses and displaces the lobe temporary ipsilateral and to the right. In its previous growth it compresses the optical chiasm, breaking the floor of the Turkish chair and with extension to sphenoidal sinus. In the pineal region another lesion of similar characteristics (figure 3).

The following week the hypernephroma was embolized of the lower pole of the right kidney without complications (Figure 4).

Discussion

The incidence of bilateral synchronous hypernephroma is approximately 2% of individuals with RCC ranging from 1%-4% (6). Bilateral RCC is more common in patients with a family history of RCC, in whom a specific genetic mutation has been identified (7).

Hypernephroma is most often reported in men at a ratio of 3:1 and most commonly between the ages of 50-70 years. Its cause is unknown, although some risk factors have been identified, such as smoking and family history (4). The case presented is a 24-year-old woman, who is not in the range of what is considered to be the most common. However, it corresponds to the age at which hereditary hypernephromas occur, which is the largest group when the tumor is bilateral.

Patients with RCC generally remain asymptomatic, until advanced stages of the disease. Between 25-30% are diagnosed with symptoms associated with metastases (4). There is a great diversity of clinical manifestations among which are the painful lumbar and abdominal form and the anemic form, both of which are present in this case.

In addition to conventional angiography, CT with three-dimensional reconstruction and MDCT with angioCT technique allow detailed vascular evaluation and eventual programming of conservative treatment or embolization. The case presented was diagnosed using CT angiography and MRI, and tumor mass was confirmed in both kidneys, in addition to lesions in adrenal glands, nodular lesions in both lung fields, and secondary aspect brain lesions.

In patients with unilateral kidney tumors, the goal of therapy is cure, with maximization of kidney function, for which surgery may be sufficient. In hereditary bilateral cases, the goal of therapy is to prevent the spread of the cancer by preserving as much as possible the renal function and limiting the number of surgeries (6). It is suggested that partial nephrectomy be considered if it potentially decreases the risk of dialysis. In the case presented, partial nephrectomy was decided on the side of greater complexity and size.

In a series of 128 cases (8) with bilateral surgery, 68% needed new kidney surgery. The overall survival was 88% at 16 years and the specific RCC survival was 97%. This work suggests a minimum follow-up time of 10 years after the initial surgery.

Conclusions

Bilateral hypernephroma is relatively rare and difficult to manage, due to aggravating cardiovascular morbidity and mortality and the risk of dialysis, as well as renal malignancy. Radiological techniques are of vital importance in the diagnosis and prior to surgery, in order to prevent complications through the study of vascular anatomy.

In the case presented, the radiological examinations conclude the diagnosis and adoption of partial nephrectomy behavior.

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