CLINICAL CASE

Retroperitoneal liposarcoma invading the kidney


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Keywords
Retroperitoneal liposarcoma; Kidney invasion

Abstract
Background: Liposarcoma represents 45% of the retroperitoneal sarcomas. Its growth causes infiltration into contiguous organs, the most affected of which is the kidney. Complete resection is the treatment of choice.

Clinical case: A 36-year-old woman suffering from high blood pressure had onset of right renal fossa pain 3 months prior, along with weight loss. Physical examination revealed obesity, hirsutism, and a fixed and palpable tumor in the right hypochondrium. An abdominal tomography scan identified a right, heterogeneous renal tumor measuring 28 x 21 cm, with probable hepatic invasion. Right radical nephrectomy was performed, the tumor weighing 3900 g and measuring 37 x 28 x 8.5 cm. The resection was categorized as incomplete and the histopathologic study reported dedifferentiated retroperitoneal liposarcoma infiltrating the kidney.

Discussion: The kidney is the most affected organ and it is difficult to differentiate through imaging studies whether or not the tumor is a primary renal lesion. Complete resection is the main outcome factor and radiotherapy is the treatment of choice in cases of high-grade tumor, incomplete resections, and unresectable recurrence.

Conclusions: Retroperitoneal liposarcoma is a tumor with a high invasive and metastatic potential. In renal masses that are not associated with hematuria, retroperitoneal sarcomatoid tumors should always be suspected.

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Resumen

Introducción: El liposarcoma representa el 45% de los sarcomas retroperitoneales. Su crecimiento provoca infiltración a órganos contiguos, siendo el riñón el más afectado. El tratamiento de elección es la resección completa.

Caso clínico: Se trata de una mujer de 36 años hipertensa. Comienza con dolor en fosa renal derecha de 3 meses de evolución, además tiene pérdida de peso. En la exploración se observa obesidad, hirsutismo, tumor palpable y fijo en hipocondrio derecho fijo. Tomografía abdominal con tumor renal derecho de 28×21 cm heterogéneo con probable infiltración hepática. Se realiza nefrectomía radical derecha de tumor de 3,900 g de 37×28×8.5 cm. Se categoriza resección como incompleta. Reporte histopatológico: liposarcoma retroperitoneal desdiferenciado que infiltra riñón.

Discusión: El riñón es el órgano más afectado, y por imagen es difícil diferenciar si el tumor es primario o no de riñón. La resección completa es el principal factor pronóstico. La radioterapia es el tratamiento de elección en caso de tumores de alto grado, resecciones incompletas y en la recurrencia irreversible.

Conclusiones: El liposarcoma retroperitoneal es un tumor con alto potencial infiltrativo y metastásico. En las masas renales que no se asocian a hematuria siempre hay que sospechar de tumores sarcomatoides retroperitoneales.

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Introduction

Liposarcoma represents 45% of the retroperitoneal sarcomas. It is a malignant mesenchymal tumor with an adipose component with different grades of atypia. There are 4 types: differentiated (45%), myxoid (35%), pleomorphic (>15%), and dedifferentiated (5%). Clinically, it is asymptomatic until causing a compression effect. The initial paraclinical study of choice is contrast-enhanced computed tomography; however, magnetic resonance has become a better method. The kidney is the main infiltrated organ and definitive diagnosis is histopathologic. Treatment of localized and locally advanced disease is surgical resection, with a minimum margin of 20 mm. In unresectable disease, chemotherapy and/or neoadjuvant radiotherapy are an option for reducing tumor size. The main prognostic factors are complete resection, histologic grade, and tumor integrity upon resection. Non-differentiated tumors have a high recurrence rate and metastatic potential, reducing overall survival.

Case presentation

A 36-year-old woman with high blood pressure, in treatment with enalapril, presented with clinical symptoms of oppressive pain in the right renal fossa of 2-month progression, accompanied by weight loss of 10 kg in that period of time. She did not complain of hematuria or any other urinary symptomatology. Physical examination revealed grade II obesity and hirsutism of the face and neck. At the abdominal level, a right, fixed, painless subcostal tumor of approximately 10 cm in diameter that extended beyond the midline was palpated and there was positive right costovertbral angle percussion. The rest of the examination was unremarkable. A thoracoabdominal tomography scan identified a heterogeneous 28 x 21 cm tumor dependent on the right kidney that was contrast-enhanced, showing apparent hepatic infiltration (figs. 1-3). At the thoracic level, 2 metastatic lesions < 1 cm were observed in the lower lobe of the right lung (fig. 4).

Laboratory tests reported hemoglobin 12.8 g/dl, creatinine 0.72mg/dl, calcium 8.2mg/dl, total bilirubin 0.69mg/dl, alkaline phosphatase 129 U/L, and cortisol 24.5 mg/dl.

Based on diagnostic suspicion, right radical nephrectomy plus ipsilateral adrenalectomy was performed that revealed a right renal tumor adhered to the lumbar muscles, liver, and peritoneum, with vena cava invasion.

Figure 1 Retroperitoneal tumor infiltrating the liver.
Histopathologic report: dedifferentiated liposarcoma with invasion of the lower pole of the kidney, weighing 3,900 g and measuring 37 x 28 x 8.5 cm, and positive surgical margin in a bloody area measuring 14 x 12 cm with 50% necrosis (figs. 5 and 6).

The patient progressed favorably and was released on the third postoperative day. Tumor stage was T2b Nx M1 G3, clinical stage IV, and adjuvant therapy was begun with radiotherapy plus chemotherapy.

Discussion

Retroperitoneal tumors can originate in numerous tissues of different histologic strains and so differential diagnosis requires a high level of suspicion. The majority of these patients are asymptomatic until the tumor causes a compressive effect; the presence of a palpable mass, pain, and weight loss signifies advanced disease in the majority of cases. The absence of hematuria can point to a non-renal origin. The initial approach is carried out through contrast tomography; however, magnetic resonance has become the criterion standard for making the differential diagnosis. Despite this, the diagnoses of some patients are difficult to
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Retroperitoneal liposarcoma has a high invasive and metastatic potential, and therefore initial and multidisciplinary management affects recurrence and overall patient survival.

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Conflict of interest

The authors declare that there is no conflict of interest.

References


Conclusions

Radical nephrectomy is indicated in retroperitoneal tumors of probable renal origin. Nevertheless, sarcomatoid origin should be suspected in those not associated with hematuria.

Retroperitoneal liposarcoma has a high metastatic potential of 13-47%, with recurrence of 18-57%; local recurrence is the most common. Five-year overall survival of these tumors is approximately 50%, in which complete resection (R0) is the main outcome factor. Therefore, in our case, prognosis is poor due to incomplete resection and high-grade metastatic disease.