
**CONSERVATIVE SURGERY IN SYNCHRONIC BILATERAL RENAL CARCINOMA. CASE REPORT**

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**Summary.-** OBJECTIVE: To describe a case of staged conservative treatment of a synchronous bilateral renal tumor, a real surgical challenge.

METHODS: 46 year old obese female who consulted for fever; bilateral solid masses >70 mm were detected and surgical treatment was offered.

RESULTS: Staged conservative treatment consisting in selective embolization of both lesions and subsequent surgery was performed. Right partial nephrectomy with ipsilateral adrenalectomy was done first, and 90 days later...
left partial nephrectomy. Pathology revealed, clear cell carcinomas with negative surgical margins in both cases in addition to a right adrenal adenoma. After 48 months of follow up, the patient remains free of local or systemic disease with normal renal function.

CONCLUSIONES: The objective for these patients is a complete resection of the tumors and preservation of as much renal tissue as possible. Conservative surgery has proven to be an effective therapy to achieve both goals in cases of bilateral synchronous renal tumors.


Resumen.- OBJETIVO: Describir un caso de tratamiento conservador de tumor renal sincrónico bilateral, un verdadero desafío quirúrgico.

MÉTODOS: Mujer de 46 años que consultó por fiebre; se detectaron lesiones renales bilaterales mayores a 70 mm y una masa adrenal derecha. Se propuso tratamiento quirúrgico.

RESULTADO: Se decidió tratamiento en dos tiempos, previa embolización arterial selectiva. Primero se realizó nefrectomía parcial derecha con adrenalectomía y 90 días más tarde nefrectomía parcial izquierda, siendo ambos carcinomas de células renales con márgenes quirúrgicos negativos y adenoma suprarrenal derecho. Tras 48 meses de seguimiento, la paciente se encuentra libre de enfermedad y con función renal normal.

CONCLUSIONES: Los objetivos a cumplir deben ser la resección completa del tumor y el mantenimiento de todo el tejido renal que sea posible. La cirugía conservadora ha demostrado ser una terapia efectiva que respeta ambos objetivos en casos de lesiones bilaterales.

Palabras clave: Carcinoma renal bilateral. Tumor sincrónico. Cirugía conservadora. Tratamiento en dos tiempos.

INTRODUCTION

Bilateral renal tumors represent 0.4 to 6% of renal tumors (1,2). An increasing incidence of synchronous lesions is seen today due to the development and improvements in imaging studies (2). For urological surgeons, bilaterality and particularly synchronicity imply a special challenge. Facing these tumors, surgical options vary according to number, location, size and patient’s comorbidities. A bilateral radical surgery can be performed, with postoperative dialysis, or radical nephrectomy on one side and partial contralateral resection or bilateral conservative approach (2). In selected cases of low-stage low-grade tumors, renal transplantation can be offered following bilateral radical surgery, after prolonged and careful follow-up (3).

Most patients in the reported series underwent bilateral surgery performed at the same time (1,4,5), although it can also be done in a staged manner, waiting 4 to 6 weeks for the second surgery (6).

This two-step approach is particularly useful for technically demanding cases that can lead to temporary unilateral renal insufficiency.

Conservative surgery is a good therapeutic option for synchronous bilateral tumors, since it has better functional outcome and similar oncologic results, compared to radical surgery (5).

CASE REPORT

A 46 year-old obese and hypertensive woman without hereditary history of renal cancer, consulted for fever. Among several studies performed, an abdominal ultrasound showed bilateral solid renal masses. Magnetic resonance and tomography confirmed a 71 mm right tumor and a 76 mm left sided tumor, plus a right adrenal non-functioning mass of 40 mm.

A staged procedure was performed, with previous selective arterial embolization of both tumors. Due to the patient’s co-morbidities, bilateral conservative approach was chosen, despite of the size of the lesion. A right partial nephrectomy with adrenalectomy was performed in the first surgery through an abdominal approach, without relevant complications. After 3 months and having reduced the size of the left tumor with embolization, a left partial nephrectomy was performed, prolonging the abdominal incision, with good postoperative evolution. In both cases, arterial clamping was done, with warm ischemia time less than 20 minutes for each case.

Histopathology revealed a renal cell carcinoma, clear cell type, Fuhrmann grade III, with negative surgical margins for the right side, in addition to an adrenal adenoma. On the left side, it demonstrated the same type of tumor, with Fuhrmann grade II, completely resected. The patient was followed up for 48 months without evidence of local or systemic relapse, and with normal renal function.

DISCUSSION

Bilateral renal tumors are found in 0.4 to 6% of cases (1-2) according to different series. Bilateral kidney cancer can be hereditary or sporadic, this last type...
being more frequent. A sporadic or non-familial type is defined as a case without family history of renal malignancy (6). Bilateral tumors can be synchronous or asynchronous, the first ones being detected within the same year and the asynchronous ones after that period (6). Some authors believe synchronous lesions have a more favourable prognosis than metachronous or unilateral tumors (1), proposing that the first ones behave as two simultaneous primary tumors, and metachronics behave biologically more like a metastasis, which justifies a shorter survival. Comparative series of both types of bilateral masses report a shorter survival for metachronous lesions (1) and notice that the risk of death from cancer is inverse to the time of appearance of the second tumor (4). However, other papers report similar results in terms of cancer specific and overall survival, although they acknowledge that these results may be attributable to the analysis applied to their series. These authors state that it is more frequent to find contralateral benign lesions with synchronous than with metachronous tumors, and for this reason asynchronous ones have a greater rate of malignancy (4). In favor of metachronous tumors is the fact that as they are detected in a patient who is already under close follow-up and for this reason the lesions tend to be smaller and mostly asymptomatic or incidental findings (6).

Complete surgical resection with negative surgical margins, with radical or partial surgery, is the only effective treatment with curative intention for localized renal tumors (1,6). Robson, in 1963, established radical nephrectomy as the treatment of choice for renal cancer (8). However, the good functional and oncologic outcomes achieved with partial resection make it the best alternative for bilateral renal tumor properly selected (1,7,8), avoiding the risk of bilateral total resection, dialysis and the consequent risks of immunosuppression and cancer progression (1).

Conservative renal surgery is the elective therapy for cases with contralateral normal kidney, but becomes an absolute indication for single kidneys, bilateral lesions, systemic diseases that pose a risk of renal compromise or familial renal cancers with high risk of recurrence (1).

Surgical treatment of bilateral masses can be done simultaneously (as in most cases reported) or staged, beginning with the smaller lesion if a contralateral radical surgery is planned (9). Other authors think otherwise and begin with radical nephrectomy, except in cases of technically demanding conservative resection that have the risk of temporary unilateral renal insufficiency (6).

The main disadvantage of partial resection is the greater risk of local recurrence, due to tumor multifocality, incomplete surgery or both. The incidence of local recurrence is low, from 0 to 3%, but this occurs in cases of elective indication and small low-grade tumors. In series of absolute indication for partial resection, this rate increases to 32% at 10 years. The relationship between local recurrence and tumor size is recognized, as well as tumor size and grade.
Anyway, in series of conservative surgeries for bilateral lesions, it is much more frequent to find systemic dissemination (21%) than local recurrence (5%) (7).

In bilateral big central renal tumors, the last alternative before leaving the patient anephric is an extracorporeal procedure (“bench surgery”) in the kidney with the smaller tumor or the more resectable one, but that is complex enough not to perform the surgery “in situ”. After that, an autotransplantation is done. This procedure should be performed by a multidisciplinary team in a high-complexity institution, but it is being done more often due to the lack of cadaveric donors, to the fact that oncologic patients in dialysis are not priority to receive a graft and because of the high costs and morbidity of patients in chronic hemodialysis (10).

In selected anephric patients following bilateral surgery and after a proper period of time, a renal transplant can be considered in early stage low grade tumors (3). In Argentina, the law determines between two and five years of disease-free survival before considering receiving a graft. It is proven that further time between surgery and transplantation decreases local recurrence (10).

Arterial selective embolization is a useful tool in renal cancer which are hypervascularized lesions. It can be used as the only treatment in inoperable cases (for high surgical risk or advanced symptomatic cancer) (11) or as a neoadjuvant procedure prior to surgery (11) or radiofrequency (19,20). In the case described here, it was used previous to surgery and devascularized and diminished the lesions.

Prognosis of bilateral non-familial renal tumors depends on complete resection and preservation of the renal function, being the tumor of higher grade the one that defines survival (6).

**CONCLUSION**

The widespread use of conservative surgery, although still underutilized, provides benefits in terms of renal function and outcomes comparable to those of radical procedures, making it the best alternative when facing synchronous bilateral tumors. Minutious analysis of each case and careful selection of surgical techniques and steps are the key to achieving good results.

**REFERENCES AND RECOMMENDED READINGS**

(*of special interest, **of outstanding interest)