BILATERAL RENAL CELL CARCINOMA WITH BILATERAL SYNCHRONOUS ADRENAL GLAND METASTASES – A CASE REPORT

J. HADZI-DJOKIC, VLADAN ANDRJEVIC, T. PEJCIC, L. DJURASIC, M. ACIMOVIC, Z. DJAMIC

Serbian Academy of Sciences and Arts, Belgrade, Serbia
Clinical Center of Serbia, Urological Clinic, Belgrade, Serbia
Clinical Center of Serbia, Clinic for Physical Medicine and Rehabilitation, Belgrade, Serbia

The authors reported a case of a 52-year-old patient with bilateral synchronous renal cell carcinoma synchronously disseminated in adrenal glands is presented. The patient underwent surgical treatment: radical nephrectomy on the right side, bilateral adrenalectomy on the right and partial nephrectomy on the left side. Five years after surgery, patient is in complete remission.

Key words: bilateral renal cell carcinoma, bilateral adrenal gland metastases, radical nephrectomy, partial nephrectomy

Renal carcinoma (RC) accounts for 2% of all cancers. In Europe, 40,000 patients are diagnosed with RC each year, and of these, approximately 50% die of the disease. One-third of the patients present locally advanced or disseminated disease at the time of the diagnosis. In addition, 25% of the patients with localized disease subjected to surgery with healing intent develop disease progression in the form of local or distant relapse (1).

Adrenal metastasis from renal tumors is more common to the ipsilateral adrenal gland. The pathological mechanisms for secondary involvement of the contra lateral adrenal gland are unknown. It is thought that the disease spreads via hematogenous route as in case of other organ metastases (2).

Bilateral invasion is extremely rare. In the radical nephrectomy piece, the ipsilateral adrenal gland is seen to be affected in 4.3% of the cases. The predisposing factors are: large tumors, advanced tumor stage, and tumor located in the upper pole region and in the left kidney (3).

Renal cell carcinoma with bilateral synchronous adrenal gland metastases is rare and only 17 cases have been published in the literature to date. In general patients with synchronous bilateral adrenal metastases from renal cell carcinoma have a poor prognosis (4).

Synchronous or metachronous adrenal metastases of renal cell carcinoma are uncommon, at 2-10% (5). No known cases of bilateral renal cell carcinoma with synchronous bilateral adrenal metastases have been reported in literature. A patient is considered to present RC with limited disease spread (RCLS) when at the time of diagnosis (synchronous) or during follow-up (metachronic), one or more metastatic foci are present in one same organ – provided these lesions are resectable from the technical, functional and oncological perspective. However, surgical management is becoming increasingly aggressive, even in cases of multiple metastases (6).

The therapy is usually surgical, with the excision of the primary malignant process and the partial or total nephrectomy (7), bilateral adrenalectomy which can sometimes result in prolonged survival (5). In young patients or subjects in good general condition (ECOG 0-1), the retropertitoneum can be explored via a bilateral Chevron incision or midline laparotomy. This aperture allows direct biopsy of
the contra lateral gland, and improved assessment of the degree of renal infiltration. If possible, a contra lateral adrenalectomy is to be attempted, together with an ipsilateral radical nephrectomy plus retroperitoneal lymphadenectomy. After surgical treatment patients require the administration of supplementary hydrocortisone (8, 9).

CASE REPORT

The case of bilateral renal cell carcinoma with bilateral synchronous adrenal gland metastases is presented. A 52-year-old woman, complained of gross hematuria. The diagnosis was established preoperatively, by abdominal ultrasound, arteriography and computed tomography. On the right kidney tumor was localized in the upper and middle pole. On the left side tumor was localized on the upper pole and was 3 cm in diameter. Size of the tumor in right adrenal gland was 5 cm and in left adrenal gland 3.5 cm in diameter. There were signs of dissemination in both adrenal glands (fig. 1). There were no preoperative signs of retroperitoneal lymphadenopathy. Surgical treatment was performed with midline incision and transperitoneal approach. At the same time it consisted of radical nephrectomy on the right side, bilateral adrenalectomy and partial nephrectomy on the left side. The hilar and retroperitoneal nodes were free from metastasis. Operative time was around 120 minutes and approximated blood loss was around 300 cm³. One dose of blood transfusion was administrated intraoperative. The postoperative course was uneventful, patient was discharged from the hospital and attended regular follow-ups. After the surgery hydrocortisone replacement therapy was administrated.

The pathological findings of the right and left renal tumor showed clear cell carcinoma (G1-G2) and both adrenal tumors showed the same pathology as the renal tumors (fig 2). There was no evidence of recurrence after 5 years and blood levels of urea and creatinin were normal.

DISCUSSION

Concerning adrenal tumors, it is said that 50% to 75% of incidental adrenal tumors in oncology patients are metastases and 30% to 50% are nonfunctional adenomas.

The behavior of RCC is unpredictable; metastasis may be found synchronously with the primary tumor or in various organs many years after treating the primary RCC (10), following routes of spread and patterns that are not yet fully understood. Whereas metastasis of RCC to different sites is not uncommon. In one autopsy study of >400 patients who had undergone nephrectomy for RCC, the contra lateral adrenal gland was the sole site of metastatic involvement in only 2.5% (11).

Bilateral invasion is extremely rare. In the radical nephrectomy piece, the ipsilateral adrenal gland is seen to be affected in 4.3% of the cases. The predisposing factors are: large tumors, advanced tumor stage, and tumor located in the upper pole region and in the left kidney (12).

The possible gland invasion routes are the following: direct from the primary tumor; vascular through the network of vessels of Gerota’s fascia; retrograde venous embolization; and arterial and lymphatic-venous embolization from retroperitoneal neoplastic adenopathies. In most patients with contra lateral adrenal gland metastases, the primary renal tumor is seen to infiltrate the renal vein or cava. There were no differences in survival between patients with synchronous or metachronous appearance of adrenal metastasis, or between those with a uni-, contra- or bilateral metastasis (13). Plawner (14) showed that the 5-year survival of patients operated on for asynchro-

Fig. 1. Angiography of renal blood vessels
Bilateral renal cell carcinoma with bilateral synchronous adrenal gland metastases has been reported with therapeutic success and prolonged survival. The available information on the outcome of the surgical treatment of metastatic RCC to the contra lateral adrenal gland is limited and incomplete (15).

CONCLUSIONS

Patient with bilateral renal cell carcinoma with bilateral synchronous adrenal metastases should be considered to have disseminated metastatic disease. Good performance status (ECOG0-1) and good localization of the tumor can make an urologist to consider surgical treatment, consisting of radical nephrectomy and/or nephron sparing surgery in renal cell carcinoma and bilateral adenalectomy, in patients with metastases in adrenal glands.

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