The infrequent association of synchronous renal and colonic malignancies


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Introduction

Although cancers of colon and kidney are common malignancies, the occurrence of primary synchronous neoplasms of these organs has been reported rarely. This association has been observed in isolated cases1 as well as in autoptic2 and epidemiologic studies3.

Genetic conditions may underlie the coexistence of these two malignancies, but not always this has been demonstrated. The relationship between these two events remains unclear, probably because of the rarity of the association.

In this report, we describe the case of an elderly woman with pulmonary metastases from kidney cancer associated with a primary colonic malignancy.

Abstract. – The coexistence of both kidney and colon primary malignancies is a rare condition. We report the case of a 75-year-old woman who presented with bilateral pulmonary nodules at chest X-ray and stratigraphy. Total-body CT scan showed multiple, apparently metastatic, bilateral pulmonary lesions, a diffusely dysomogeneous neof ormation in the lower pole of the right kidney and a gross neoformation in the ascending colon. A right nephrectomy and a right hemicolectomy were performed and histology showed two primary neoplasms: clear cell renal carcinoma and undifferentiated adenocarcinoma of the colon.

Key Words: Clear cell renal carcinoma, Colon adenocarcinoma, Pulmonary metastases.

Case Report

A 75-year-old woman was admitted to our Department in April 1998. Her family history was unremarkable.

In March 1998, because of the onset of febricula she underwent chest X-ray and stratigraphy which evidenced a right subclavicular radiopaque nodule (13 mm) and two similar lesions in the right upper-mid (9 mm) and left mid (5 mm) lung fields.

On admission, physical examination did not show relevant abnormalities except for pallor and liver enlargement.

Laboratory determinations gave the following results: haemoglobin 7.2 g/dl, red blood cells 3,670,000/mm, MCV 68 fL, white blood cells 6,270/mm, with a normal differential count, platelets 447,000/mm; Westergren erythrocyte sedimentation rate 120 mm/h; sideraemia 8 mcg/ml, ferritin 246 ng/dl. Blood urea nitrogen, serum creatinine and liver function tests were within normal limits. Urinalysis showed no abnormalities.

Renal echography evidenced an hypervascularized neoformation (8.8 × 5.5 cm) in the right mid third. Echographic examination of liver and spleen showed only an aspecific enlargement of the liver without focal lesions and the presence of gallbladder stones.

Total-body CT scan showed multiple, apparently metastatic, bilateral pulmonary lesions, a diffusely dysomogeneous neoformation (maximum diameter 10 cm) in the lower pole of the right kidney, thrombosis of the renal vein and a gross neoformation (diameter 5 cm) in the ascending colon (Figure 1).

Skeletal scintiscan showed no abnormalities.
In May 1998 patient underwent surgery. After laparotomy, a large (12 × 10 × 9 cm) and firm neoplastic bulk involving the right kidney and a large mass-lesion on the posterior aspect of the ascending colon were found. No lesions involving other organs were observed. The intra-operatory ultrasound of liver, using a 7.5 MHz probe, did not show any metastases.

A right hemicolectomy and a right nephrectomy were performed, both with standard lymphectomy; in addition, a neoplastic thrombus was removed from the right renal vein. After the resection, the gross appearance of the pathologic tissue resembled that of a renal cell carcinoma (spherical and capsulated mass composed of bright yellow tissue), apparently infiltrating the perinephric fat. The colonic lesion was a polypoid fungating mass (7 cm), with a large base, infiltrating the organ wall. Histology showed two prima-

Figure 1. Contrast CT scan of the abdomen demonstrating a diffusely dysomogeneous neoformation (maximum diameter 10 cm) in the lower pole of the right kidney (a) and a gross neoformation (diameter 5 cm) in the ascending colon (b).
ry neoplasms: undifferentiated adenocarcinoma of the colon infiltrating the serosa (pT3, pN0, pMx, stage IIB) and clear cell renal carcinoma with a 25% of oxyphil cells, invading renal capsule and perinephric fat (pT3b, pNx, pMx, stage III).

Postoperatively, chest X-ray showed an increased number and dimension of pulmonary lesions.

A biopsy under CT-scan of a pulmonary nodule revealed metastasis of clear cell renal carcinoma. Patient did not consent to interferon treatment.

In September 1998 patient was admitted again to our Department because of bilateral ischialgia with impaired ambulation.

Skeletal scintiscan was consistent with secondary lesions in L1, in the right iliac bone and the posterior arch of the fifth right rib.

Abdominal ecography showed multiple liver metasases and a neoformation in right perinefric fat (4.1 cm).

Patient general conditions gradually worsened; after recurrent intestinal haemorragies, she succumbed in November 1998.

Discussion

Colon and kidney cancers are frequently encountered neoplasms. Both in USA and in Europe, colon cancer accounts for about the 15% of the diagnoses of malignancies, and is the second cause of death4, while kidney cancer represents the 2-3% of the tumors and is the 12th cause of death in men and the 13th in women5.

The association of both kidney and colon primary malignancies has been described in the literature. Hajdu and Thomas2 in 100 cases of renal cell carcinoma (RCC) out of 15,370 autopsy records reported the association of second primaries in 30% of the cases. In this study colon malignancies occurred with an incidence of 4% among patients with renal cancer. Later, Hajdu and Hajdu6 on the basis of a review of 3,321 necropsy cases demonstrated another primary in 29% of the patients with renal carcinoma and in 9% with colon cancer. The incidence of synchronous colon and renal tumors in this study was 0.1%. Lee et al7 reported that the incidence of simultaneous colon and renal primaries among patients with cancer of the colon was 0.9%. Recently an increased incidence of RCC has been observed, mostly metachronous or synchronous to other solid tumors8.

Renal carcinomas may translate into an association with second primary tumors in the elderly cancer patients: it has been demonstrated that asymptomatic and clinically undetected kidney cancers are common findings in elderly patients with multiple malignances9.

Multiple primary neoplasms have been associated with a strong family history of cancer and in some cases the underlying genetic mutations have been identified10. Synchronous colon and renal primary tumors have been described in Lynch II syndrome. The latter is characterized by hereditary nonpolyposis colorectal cancer (HNPC) associated with neoplasms of other organs (endometrium, stomach, ovary, small bowel, pancreas, ureter, breast and kidney). Mutations in one of the four mismatch repair genes MSH2, MLH1, PMS1, PMS2 have been found in about 70% of HNPC kindreds11. In our case, the hypothesis of a Lynch II syndrome was excluded because of the irrelevant family history of the patient. Interestingly, many of the literature cases of associated colon and renal cancer did not show family history of malignancies12.

We have presented a case of primary synchronous malignancies of kidney and colon. Our patient because of multiple, apparently metastatic, bilateral pulmonary lesions, underwent a thorough clinical and radiographic work-up which showed a diffusely dysomogeneous neoformation in the lower pole of the right kidney as well as a gross neoformation in the ascending colon. Although primary kidney malignancies metastasizing to the colon13, as well as renal metastases from colon cancer have been described14, this is an unusual event. In the case we report the hypothesis that one of the neoplasms was secondary to the other was ruled out both by surgical intervention and histology.

Spontaneous regression of lung metastases from kidney cancer has been reported following nephrectomy15. Nonetheless, in our case pulmonary lesions rapidly evolved after surgery, secondary bone and hepatic lesions developed and the kidney cancer showed a local relapse.
Silent slow-growing RCC is often diagnosed during ascertainment for another cancer; in addition increased incidence of second primary RCC has been reported in patients with colon cancer\textsuperscript{16}. Therefore, we recommend serial assessments of the kidney with ultrasonography and urine cytology in elderly patients affected by primary colon cancer.

References