

# 11-year survival of a renal cell cancer patient following multiple metastasectomy

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**Case report:** A renal cell cancer patient with late onset of multiorgan metastases showed an unusually long survival following surgical resection. Femoral metastasis appeared 11 years, and contra lateral kidney and adrenal gland metastasis 19 years after the primary nephrectomy, respectively. Following the resection of the femur and implantation of endoprosthesis and removal of adrenal

gland and partial nephrectomy, the patient was disease-free 20 years after the first diagnosis of cancer.

**Conclusion:** The long survival and successful treatment underline the importance and efficiency of radical metastasectomy even in the case of late onset multiorgan metastases of renal cell cancer. The life expectancies are better in the late onset of bone metastasis following the nephrectomy. The very late onset of metastases in this case shows however the importance of lifelong follow up.

**Key Words:** renal cell cancer, metastases, metastasis surgery, survival, nephrectomy,

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## Introduction

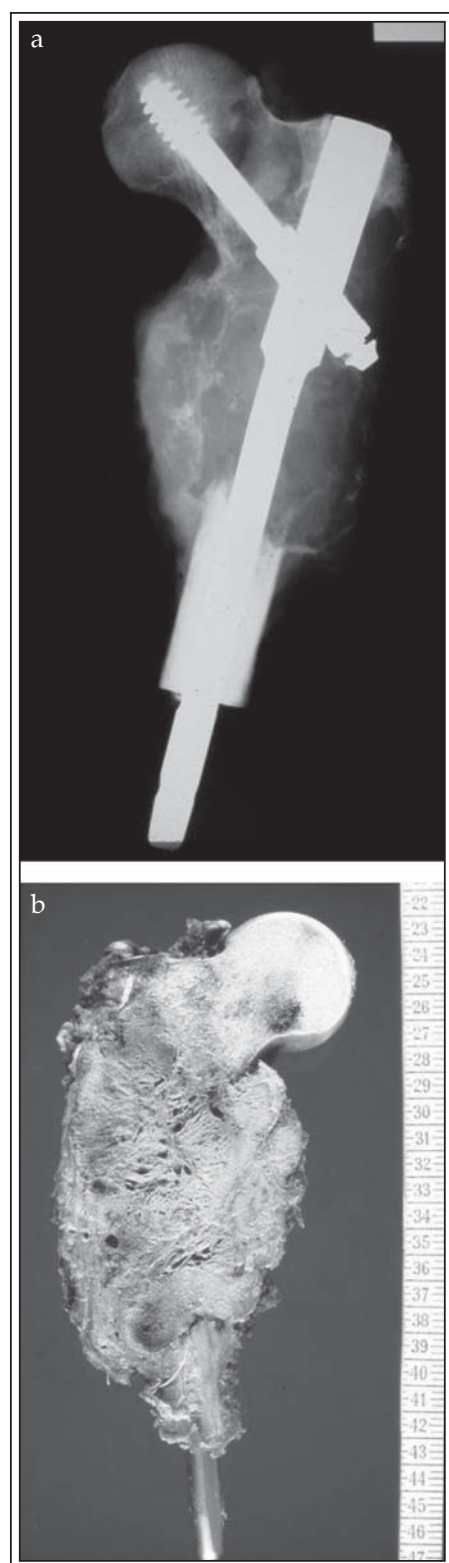
One third of renal cell cancer patients present with metastases at the time of the first diagnosis, while in 30%-40% of the patients, metastases will appear later. Altogether, 60% of the patients, with renal cell carcinomas (RCC) develop metastases during their life.<sup>1</sup> RCC gives metastasis to the skeletal system in 20%-25% of the cases.<sup>1</sup> The first successful surgery of solitary metastasis of the RCC was reported by

Barney in 1939 and after the operation, a 23-year-long disease-free survival was noted.<sup>2</sup> Thereafter, in lack of any efficient treatments (e.g. chemotherapy or radiotherapy), the surgery of bone metastases of RCC is the first choice of treatment options.<sup>1</sup> The occurrence of the bone metastasis is regarded as a bad prognostic factor as the life expectancy of patients is about 12 months in this case, however in some cases there are unexpectedly long survivals.<sup>1</sup> According to our previous analyses of 65 RCC patients with bone metastases the main favorable prognostic factors are the onset time after the first diagnosis, the Fuhrman grade, the number of metastases and the surgical radicalism.<sup>3</sup> In the case of radical surgery for solitary metastases the 5 year survival rate is as high as 35% after the bone surgery.<sup>3</sup>

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**Figure 1.** Radiological appearance of the right femur metastasis (a) and the gross specimen (b). (11 years after nephrectomy).

## Case report

A 55-year-old male patient underwent radical nephrectomy due to clear cell renal carcinoma of the left kidney, stage pT1N0M0. Eight years later, he sustained a subtrochanteric fracture in the right femur due to an adequate trauma, which was fixed by gamma nail. The patient did not show up for follow up for 3 years, at that time he returned with pain of his right hip. The x-ray showed a lytic defect on the operated site, which was thought to be a late metastasis of renal cell cancer. Bone scan and CT scan excluded metastases in other locations. The metastasis was resected with wide surgical margins, Figure 1, and a modular endoprosthesis was implanted. The histopathological examination revealed renal cell cancer consistent with the previous tumor pathology. Once again, the patient did not attend the follow up investigations for 8 years. Eventually he returned to our department 19 years after the nephrectomy. The CT and MRI exams showed a 4 cm mass in the middle third of the solitary right kidney and a 10 cm metastasis in the right adrenal gland, Figure 2. No other metastases could be detected. The kidney tumor was removed with wedge resection, and in one step the adrenal tumor was also resected, the surgical margins were negative. The histopathological examination revealed clear cell adenocarcinoma consistent with the two prior resections. After the second metastasectomy the patient returned regularly for check ups, and he has been disease-free for 2 years.

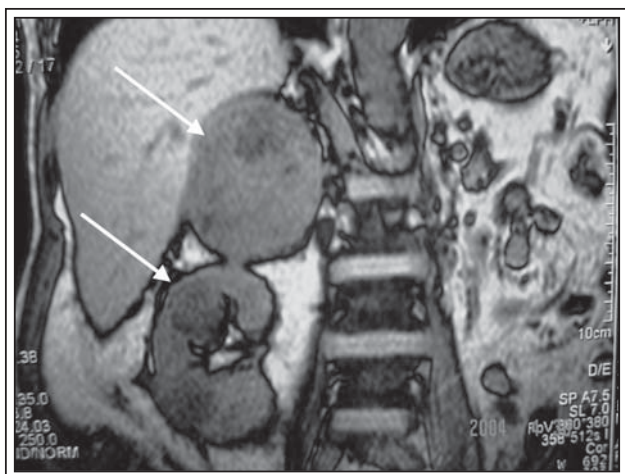
## Discussion

In patients with excision of solitary metastasis from renal cell cancer, the longest tumor-specific survival is reported after surgery pulmonary followed by bone metastasis.<sup>4</sup> Bone metastases of renal cell cancer are solitary only in 5%-15% of the cases. In these cases radical surgery should be performed, but generally the metastases become multiplex within 2 years.<sup>1,5</sup> Good prognostic factors are the late onset time and the low Fuhrman grade of metastasis.<sup>3</sup> The longer the onset time is after the first diagnosis, the better survival could be expected, and the more radical surgery should be performed.

In our case the bone metastasis developed in the same location as the subtrochanteric femur fracture 3 years prior. This raises the possibility that the metastasis could have existed at the time of the fracture, and the metastasis was missed during the gamma nail implantation.

The right-sided renal tumor is thought to be of metastatic origin from the contralateral kidney, however more genetic studies would be required to distinguish between a late onset metastases and a new primary tumor of the right kidney.

On the basis of our experiences it seemed to be essential to follow up the patient carefully and regularly through his life in order to recognize the metastases in early stages, to submit the patient for metastasectomy in case of late onset metastases, as they seem to be less aggressive, than the synchronous metastases. The frequency of follow up depends on the stage, grade of the primary tumor and the follow up time after surgery, but at least in every 6 months lab tests and CT scan should be performed for 5 years, and yearly after that.



**Figure 2.** MRI of right adrenal and renal metastases. (19 years after nephrectomy).

The long survival (more than 20 years) and successful surgical treatment of metastases underline the importance and efficiency of radical surgery even in the case of multiorgan metastases of renal cell cancer. The very late onset of metastases in our case shows the importance of a lifelong follow up. □

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