CASE REPORT

Metachronous splenic metastasis from renal cell carcinoma: a case report

Rahoui Moez*, Boulma Rami and Khouni Hassen

Departement of Urology, FSI Hospital, La Marsa, Tunisia

*Correspondence address. Departement of Urology, FSI Hospital, La Marsa, Tunisia. E-mail: rmoez099@gmail.com

Abstract

The causes of isolated solid splenic lesions are wide and varied, and as such can present a diagnostic challenge. Splenic metastases were previously considered exceptionally rare. We report a case of a patient who had isolated splenic metastases with a previous history of left nephrectomy due to a renal cell carcinoma 3 years before. This report represents the first case reported in our country and wants to add to literature one more case of splenic metastasis from renal cell carcinoma.

INTRODUCTION

Renal cell carcinoma (RCC) accounts for 3% of all cancers [1]. It is the third urologic cancer after prostate and bladder cancers. The preferred sites of metastasis are the lungs, bones, liver and brain [2]; however, splenic metastasis from RCC in extremely rare and up to now only few cases has been described in the available literature. We report the case of a men who presented with a splenic lesion 3 years after radical nephrectomy.

CASE REPORT

We report the case of 47-year-old men, with a chronic renal failure, who had been operated on 3 years previously for a total left radical nephrectomy for clear cell renal cancer of stage pT3cN0M0. During the follow-up of the patient, a routine cancer screening with ultrasound revealed a mass in the spleen of about 4 cm of diameter. Laboratory investigations were normal apart from known chronic kidney disease and allergy to Iodinated contrast media, an abdominal magnetic resonance imaging (MRI) confirmed the presence of a splenic lesion (Fig. 1). Based on these radiological findings, the splenic mass was diagnosed as a suspicious metastatic lesion. An open splenectomy was performed. The patient recovered uneventfully and was discharged 5 days after surgery. He received pneumococcal, meningococcal and Haemophilus influenzae vaccine. Histologic analysis of the lesion confirmed the presence of clear cell renal cancer metastasis (Fig. 2). The patient was referred to the oncology department for adjuvant treatment with sunitinib. His follow up consisted on abdominal ultrason (US) every 3 months and MRI at 6 and 12 months from surgery. After 36 months, the patient is doing well with no signs of tumor recurrence.

DISCUSSION

Excluding hematological diseases, primary and metastatic tumors to the spleen are uncommon. The reported incidence of metastatic tumors in spleen varies from 0.3% to 7.3%, but it is generally linked to hematological malignancies [2]. Metastasis to the spleen is infrequent. The most common primary cancers are lung cancer, skin malignant melanoma and breast cancer [3]. About 30% of the patients with renal cell carcinoma already have distant metastasis at the time of diagnosis. Splenic metastasis from RCC in extremely rare and up to now only few cases has been described in the available literature [4] (Table 2). The incidence of isolated splenic metastasis from any given primary
### Table 1. Laboratory investigations

| Biochemical and hematological parameters | Value |
|-----------------------------------------|-------|
| Hemoglobin (g/dl)                       | 12.4  |
| White blood cells                       | 8700  |
| Platelets                               | 278 000 |
| Serum creatinine (umol/L)               | 175   |
| Calcium (mmol/L)                        | 2.3   |
| Albumin (g/L)                           | 37    |

### Table 2. Summary of cases of isolated splenic metastasis found in the literature

| Authors              | Age/sex | Metastasizing time | Primary | Outcome            |
|----------------------|---------|--------------------|---------|--------------------|
| Strum                | 59 y/M  | 22 y               | Right   | Dead (5 mo)        |
| Ishida et al.        | 50 y/M  | 7 y                | Left    | Alive (6 y)        |
| Nabi et al.          | 50 y/f  | (Synchronous)      | Left    | Alive (6 mo)       |
| Kugel et al.         | 72 y/M  | 2 y                | Left    | Dead (1 y)         |
| McGregor et al.      | 65 y/M  | (Synchronous)      | Left    | ND                 |
| Shuck-Bello et al.   | 74 y/M  | 15 y               | Right   | ND                 |
| Ielpo et al.         | 82 y/M  | 14 y               | Left    | Alive (1 y 3 mo)   |
| Moir et al.          | 70 y/f  | 11 mo              | Left    | Alive (2y)         |
| Nunes et al.         | 60 y/f  | 5 y                | Left    | Alive (6 mo)       |
| Hardikar             | 29 y/M  | (Synchronous)      | Left    | Alive (2 y)        |
| Zhang et al.         | 67 y/M  | 2 y                | Left    | Alive (5 mo)       |
| Grewal et al.        | 53 y/m  | 2 mo               | Left    | ND                 |
| Liu et al.           | 75 y/M  | (Synchronous)      | Right   | Alive (1 y 4 mo)   |
| Ramao et al.         | 48 y/M  | 11 y               | Left    | Alive (2 mo)       |
| Rahoui et al.        | 47 y/M  | 3 y                | Left    | Alive (3 y)        |

ND: not described.

CONCLUSION

Splenic metastasis from RCC in extremely rare. They are often asymptomatic and generally discovered on surveillance imaging. The optimal treatment is based on splenectomy to avoid any complications. The adjuvant treatment should not be considered a standard of care outside from clinical trials.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The approval of the current study has been granted by the medical committee of research ethics of FSI hospital. Written informed consent was obtained from the patient for publication of this study. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

CONSENT FOR PUBLICATION

Written informed consent was obtained from the patient for publication of this study. A copy of the written consent is available for review by the Editor on request.

FUNDING

No funding was received.

COMPETING INTERESTS

The authors declare that they have no competing interests.

REFERENCES

1. Coulange C, Rambeaud JJ. Cancer du rein de l’adulte. Chapitre 3 – Epidémiologie. Prog Urol 1997;7:755–62.
2. Ielpo B, Mazzetti C, Venditti D, Buonomo O, Petrella G. A case of metachronous splenic metastasis from renal cell carcinoma after 14 years. Int J Surg 2010;8:353–5.
3. Schön CA, Görg C, Ramaswamy A, Barth Pj. Splenic metastases in a large unselected autopsy series. Pathol Res Pract 2006;202:351–6.
4. Romao DS, Horvat N, Gonçalves MC, Abe ES, Dumarcio RB, Viana PCC, et al. Isolated splenic metastases from renal cell carcinoma 11 years after surgery. Case Rep Med 2019;2019:7480479.
5. Caraway NP, Fanning CV. Use of fine-needle aspiration biopsy in the evaluation of splenic lesions in a cancer center. Diagn Cytopathol 1997;16:312–6.
6. Metser U, Miller E, Kessler A, Lerman H, Lievshitz G, Oren R. Solid splenic masses: evaluation with 18F-FDG ET/CT. *J Nucl Med* 2005;46:52–9.

7. McGregor HD, Wu Y, Weston AP, McAnaw MP, Bromfield C, Bhattatiry MM. Metastatic renal cell carcinoma of spleen diagnosed by fine-needle aspiration. *Am J Med Sci* 2003;326:51–4.

8. Lee SS, Morgenstern L, Phillips EH, Hiatt JR, Margulies DR. Splenectomy for splenic metastases: a changing clinical spectrum. *Am Surg* 2000;66:837–40.

9. Chin W, Cao L, Liu X, et al. Metastatic renal cell carcinoma to the pancreas and subcutaneous tissue 10 years after radical nephrectomy: a case report. *J Med Case Rep* 2020;14:36.