

CASE REPORTS

Open Access



Pseudo-tumor renal tuberculosis: a case report

Abdelaziz El Gdaoui*  and Imad Ziouziou

Abstract

Background: Renal lesion is a very frequent location of tuberculosis disease, the diagnosis of which is often difficult and delayed due to its atypical clinical presentations, especially in its pseudo-tumoral form.

Case presentation: Patient of 54 year old was referred after a kidney mass was found on an abdominal ultrasound. In addition, the patient reported the notion of minimal intermittent low back pain with weight loss. On computed tomography, it was a nodular lesion of the superior pole of the right kidney, and it has a heterogeneous density and a suspicious appearance. A total nephrectomy was performed by subcostal incision. Pathological examination of the specimen revealed the presence of diffuse gigantocellular granulomas with caseous necrosis suggestive of renal tuberculosis.

Conclusion: Despite the rarity of this form, renal tuberculosis should always be thought in order to avoid radical treatment.

Keywords: Renal tuberculosis, Pseudo-tumor, Nephrectomy

1 Background

Tuberculosis is a public health problem, especially in endemic countries. In Morocco, the incidence rate is 88 cases/100,000 or nearly 30,000 cases each year [1]. It can affect several organs (lung, lymph node, kidney, etc.) and present in different forms, the pseudo-tumor appearance of which remains exceptional. Different locations of these tuberculous pseudo-tumors have been reported in the literature: ocular, renal, etc. [2–4].

In our work, we report a rare clinical case of renal tuberculous pseudo-tumor which hinted at malignant neoplastic involvement.

2 Case presentation

2.1 Patients information

Mrs. K.H.F, 54 years old, had as antecedents: non-insulin-dependent diabetes, arterial hypertension with end-stage chronic kidney disease (CKD).

2.2 Clinical findings

She was referred after a kidney tumor was found on an abdominal ultrasound. In addition, the patient reported the notion of minimal intermittent low back pain with weight loss amounting to ten kg in 3 months, without other associated signs, in particular no hematuria, or lower urinary tract symptoms. The clinical examination was unremarkable.

2.3 Diagnostic assessment

On computed tomography, it was a nodular lesion of the superior pole of the right kidney, with heterogeneous density, and suspicious appearance; there was no abnormality of the rest of the parenchyma and the upper excretory urinary tract (Fig. 1).

*Correspondence: drazelgdaoui@gmail.com

Department of Urology, Faculty of Medicine and Pharmacy, Agadir University Hospital, Ibn Zohr University, Agadir, Morocco

Laboratory investigations revealed hemoglobin of 7.5 g/dl, total leukocyte count 8500/mm³, and protein C-reactive (CRP) rate of 10 mg that why we didn't check erythrocyte sedimentation rate.

A chest CT was done and did not show any metastasis.

2.4 Therapeutic intervention

Considering the clinical presentation as well as radiological investigations, we did not find any interest in doing a biopsy or a partial nephrectomy because the diagnosis of renal tumor was quite obvious given the patient's risk factors, the radiological appearance and her renal function which is already impaired. So a radical nephrectomy was performed by subcostal incision.

In the intraoperative, the lesion occupied the superior pole of the kidney without adherence to neighboring structures and without palpable or visible any lymph nodes.

Pathological examination of the specimen revealed the presence of diffuse epithelioid cell granuloma with caseating necrosis suggestive of renal tuberculosis (Fig. 2).

A tuberculosis treatment was started and continued for 6 months.

2.5 Follow-up and outcomes

The patient had a simple postoperative course and respond well to tuberculosis treatment.

2.6 Patient perspective

The patient was informed of about the all procedure, complication and outcome, and he was agree about it.

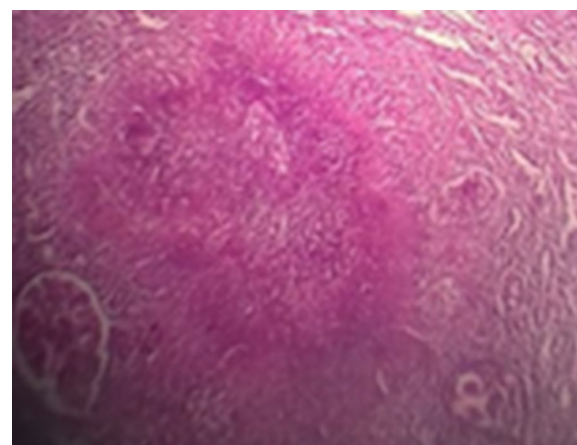


Fig. 2 Pathological examination of the specimen revealed a epithelioid cell granuloma with caseating necrosis. (Standard coloring HES. Magnification × 10)

2.7 Informed consent

A written informed consent to permit publish of the patient case was signed by the patient.

3 Discussion

Tuberculosis is a serious disease secondary to infection with a bacterium of the genus mycobacterium, the most common species of which is mycobacterium tuberculosis [2], more and more frequent especially due to human immunodeficiency virus (HIV) infection and the increase in organ transplants [5]. According to the World Health Organization, around nine million new cases occur worldwide each year [5]. Most often it is a pulmonary form; among non-pulmonary lesions, the urogenital

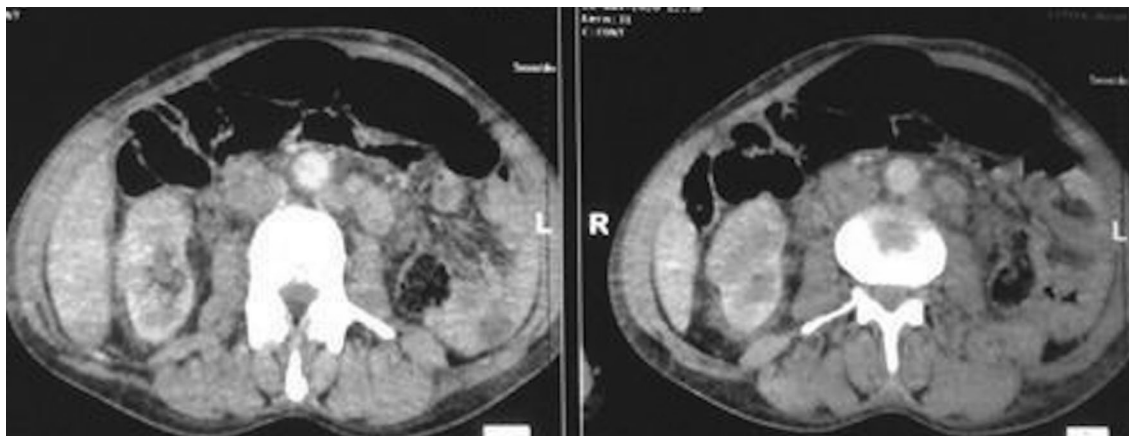


Fig. 1 Abdominal CT scan with injection of contrast product showing a right polar renal lesion of heterogeneous density very suspicious of malignancy

location is quite common [6], responsible for 14–41% of lesions. It occupies the third place in extrapulmonary sites after pleural and lymph node tuberculosis [7], with a male predominance, especially in the 30–50 year age group [8]. Generally, renal involvement is the consequence of local reactivation following hematogenous dissemination of *Mycobacterium tuberculosis* to the renal cortex during a primary pulmonary infection [3].

Diagnosis of renal tuberculosis is difficult and often delayed [8], as it usually manifests with nonspecific symptoms, such as pyuria, dysuria, fever, weight loss and flank pain, as it can be revealed by a mass, usually due to hydronephrosis of the kidney involved, whereas the pseudo-tumor presentation of renal tuberculosis is an extremely rare entity [3, 9] which poses a differential diagnostic problem with kidney cancer and pseudo-tumor xantho-granulomatous pyelonephritis [10].

The radiological presentations of renal tuberculosis depend on the stage of infection [11]. In the absence of renal destruction, the radiological appearance of tuberculous kidneys is normal in the majority of cases. In less than a third of cases, pseudo-tumor nodules and/or calcifications are visible on ultrasound or computed tomography [12]. The nodules most often correspond to tuberculomas or pyocalices which often take on the radiological characteristics of a tissue tumor [12]. Magnetic resonance imaging (MRI) is also very important and can be very useful for the characterization of cystic masses and atypical solids remained undetermined on CT scan, especially in renal failure with contraindication to injection of contrast product [13].

Only histological confirmation is capable of confirming the diagnosis by an ultrasound or computed tomography-guided biopsy, especially in the event of uncertainty regarding the imaging: lymphoma, sarcoma, “pseudo-tumor” of the kidney, renal metastasis [13], or by the anatomopathological study of an operative part [9].

The treatment of urogenital tuberculosis is similar to that of extrapulmonary tuberculosis at other sites. The initial regimen consists of four drugs (isoniazid, rifampin, pyrazinamide and ethambutol) for 2 months, followed by two drugs (isoniazid and rifampin) for 4 months [3].

In this case, computed tomography imaging was insufficient to differentiate between neoplasia and renal tuberculosis. The diagnosis of cancer seemed very obvious given the absence of clinical signs pointing to tuberculosis, and the presence of risk factors for a renal tumor (end-stage chronic renal failure, arterial hypertension), even if the field of immunosuppression linked to CRD could have been considered as a risk factor for tuberculosis, hence the interest of performing renal biopsies, especially in doubtful cases to avoid these histological surprises on the nephrectomy part.

4 Conclusions

Renal tuberculosis with pseudo-tumoral form remains a rare entity often found histologically. However, it should always be thought about, especially in endemic countries. Computed tomography is insufficient to differentiate it from kidney cancer. Only the biopsy of these doubtful masses would allow an early diagnosis and avoid unexpected postoperative pathological results.

Abbreviations

HES: Hematoxyline–eosine–safran; HIV: Human immunodeficiency virus; MRI: Magnetic resonance imaging; CT: Computed tomography; CKD: Chronic kidney disease; CRP: Protein C-reactive.

Acknowledgements

None.

Author contributions

AE has contributed significantly to this work, by preparing the study and writing the manuscript. IZ has contributed significantly to this work, by reading, correcting and following the workflow. All authors have read and approve the final manuscript.

Funding

None.

Availability of data and materials

All data pertaining to study are available with the author and would be provided on request.

Declarations

Ethics approval and consent to participate

Written informed consent to participate was obtained from all participants. All patients provided written informed consent along with guarantees of confidentiality.

Consent for publication

Written informed consent for publishing of study was obtained from all participants.

Competing interests

Prof Imad Ziouziou is a co-author of this study and Associate Editor of the journal. He declares a competing interest for this submission. He has not handled this manuscript. The rest of the authors have no conflict of interest to declare.

Received: 27 October 2021 Accepted: 13 May 2022

Published online: 26 May 2022

References

1. Ministère de la santé marocaine, direction de l'épidémiologie et de lutte contre les maladies. Bull Epidémiol (2015)
2. Elboukhani I, Siati A, Errachiq I, Mchachi A, Benhmidoune L, Rachid R, Elbelhadji M (2020) Forme pseudotumorale de tuberculose oculaire: à propos de 2 cas [Pseudotumoral ocular tuberculosis: about 2 cases]. Pan Afr Med J 2(36):147
3. Chaker K, Chakroun M, Gharbi M, Chebil M (2019) Renal tuberculosis mimicking renal cell carcinoma: a case report. J Med Case Rep 13(1):139
4. Xu H, Zhang J, Wang Y, Yu S, Zhou R, Zhang J (2017) Clinicopathological analysis of renal inflammatory pseudotumors presenting as the unilateral solitary masses. Int J Clin Exp Pathol 10(7):7734–7742
5. Daher Ede F, da Silva GB, Barros EJ Jr (2013) Renal tuberculosis in the modern era. Am J Trop Med Hyg. 88(1):54–64

6. Boulahia Y, Djaballah A, Chiad A, Iftène D (2013) Aspects diagnostiques de la tuberculose rénale. Ser Néphrol Dial Transplant Rén, Hôpital Cent L'armée, Alger, Algérie. <https://doi.org/10.1016/j.nephro.2013.07.115>
7. Murányi M, Kiss Z, Farkas A, Flaskó TA (2016) Nagy imitátor [The great Imitator. Case report]. *Orv Hetil* 157(9):350–6
8. Toccaceli S, Persico Stella L, Diana M, Taccone A, Giuliani G, De Paola L, Valvano M, De Padua C, Di Biasio G, Ranucci C, Orsi E, La Torre F (2015) Renal tuberculosis: a case report. *G Chir* 36(2):76–8
9. Gurski J, Baker KC (2008) An unusual presentation: renal tuberculosis. *ScientificWorldJournal* 23(8):1254–1255
10. Sarf I et al (2001) Tuberculose rénale à forme pseudotumorale. *Ann Urol* 35:34–36
11. Junior SGB, Brito LD, Rabelo ST, Saboia ZM (2016) Chronic kidney disease related to renal tuberculosis: a case report. *Rev Soc Bras Med Trop* 49(3):386–8
12. Peyromaure M, Sèbe P, Darwiche F, Claude V, Ravery V, Boccon-Gibod L (2002) Tuberculose rénale et adénocarcinome du rein: une association trompeuse [Renal tuberculosis and renal adenocarcinoma: a misleading association]. *Prog Urol* 12(1):89–91
13. Bensalah K, Albiges L, Bernhard JC, Bigot P, Bodin T, Boissier R, Correas JM, Gimel P, Hetet JF, Long JA, Nouhaud FX, Ouzaid I, Rioux-Leclercq N, Méjean A (2018) Recommandations françaises du Comité de Cancérologie de l'AFU: actualisation 2018–2020: prise en charge du cancer du rein. *Prog Urol* 28(12S):S3–S31

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Submit your manuscript to a SpringerOpen[®] journal and benefit from:

- Convenient online submission
- Rigorous peer review
- Open access: articles freely available online
- High visibility within the field
- Retaining the copyright to your article

Submit your next manuscript at ► [springeropen.com](https://www.springeropen.com)
