



Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.casereports.com

Unusual presentations of urogenital tuberculosis

Rayen Lahouar*, Badreddine Ben Khalifa, Najib Ebbey Baba, Wael Gazzah, Sahbi Naouar, Salem Braiek, Rafik El Kamel

Urology Department, Surgical Unit "Aghlabides" of Ibn Jassar Hospital, Rue Hassan Ibn Nouaman, 3100, Kairouan, Tunisia

ARTICLE INFO

Article history:

Received 31 October 2020
 Received in revised form
 14 November 2020
 Accepted 14 November 2020
 Available online 25 November 2020

Keywords:

Tuberculosis
 Unusual presentations
 Urogenital tract

ABSTRACT

Urogenital tuberculosis is a rare and severe disease since it causes serious consequences. Often, diagnosis may be delayed because of its multiple presentation forms and clinical features. Usually, the recognition is easy to hold, but in certain cases the presentation form can be misleading which can exclude the diagnosis.

We present two cases of unusual form of urogenital tuberculosis from which clinical features were taken for a malignant cancer at the beginning.

The first case is about a young woman with renal lesions then proceeding to radical nephrectomy. The second case is about a 48 years old patient who had a radical cystectomy to treat an urothelial carcinoma (classified as pT1G3) along with squamous metaplasia (25 %).

In both cases, the histologic investigation revealed the presence of a granulomatous reaction with giant cells and caseous necrosis which confirms the diagnosis of tuberculosis.

Through the study of these two cases and literature review, we mark the different diagnosis and treatment difficulties handling these unusual presentation forms.

© 2020 Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

Tuberculosis is a major public health problem especially in the developing countries. Worldwide, we estimate that 8–10 million people have tuberculosis and around 2 million people die of it each year [1]. Its growth in the USA and in West Europe is depending mainly on 3 factors: the immunodeficiency related to the AIDS, the emergence of resistant strains to classic anti-TB drugs and the flow of immigrants living in community [2].

The most frequent form of this disease is lung tuberculosis. However, the extra-pulmonary localization of tuberculosis can relate to almost all the body [3].

The urogenital tuberculosis has the characteristic of having multiples and various lesions, which can affect the renal parenchyma and the urinary tract and cause various clinical features. Furthermore, urogenital tuberculosis presents a non-specific and highly misleading clinical symptomatology [3]. These two characteristics of the disease lead to diagnostic and patient management delay and, subsequently, a worse prognosis [4].

In our paper we are reporting two cases with a misleading presentation of urogenital tuberculosis. Through the study of these two

cases and literature review, we mark the different diagnosis and treatment difficulties handling these unusual presentation forms.

This procedure was performed by a junior resident with 5 years of specialised training and it has been reported in line with the SCARE 2018 criteria [5].

2. Presentation of cases

2.1. 1st case

The patient is a 44-year-old woman with no medical nor familiar nor surgical history. She was referred by family physician for an isolated right back pain during 5 months with no fever nor haematuria nor a deterioration of his general condition. Physical examination revealed no abnormalities. The cytobacteriological examination of the urine (CBEU) showed leukocyturia = 200/m with a negative culture test and no biological inflammatory syndrome.

An abdominal CT-Scan (Fig. 1A) revealed two cystic lesions in the upper part of the right kidney, each one of them measures 2 cm, which become heterogeneous and intensely enhanced after injection of a contrast agent.

To better characterize these lesions, a magnetic resonance imaging (MRI) (Fig. 1B) was performed and revealed the presence of 2 masses in the upper pole of the right kidney enhanced only at the periphery after Gadolinium injection associated with a dilation of the ureter, renal pelvis and calyces with no obstacle detected.

* Corresponding author.

E-mail addresses: Rayen.lahouar@gmail.com (R. Lahouar), bkbadr@yahoo.fr (B. Ben Khalifa), babaebbey@gmail.com (N.E. Baba), waelgazzah@gmail.com (W. Gazzah), snaouar@laposte.net (S. Naouar), salembraiek@hotmail.fr (S. Braiek), rafik.elkamel@rns.tn (R. El Kamel).

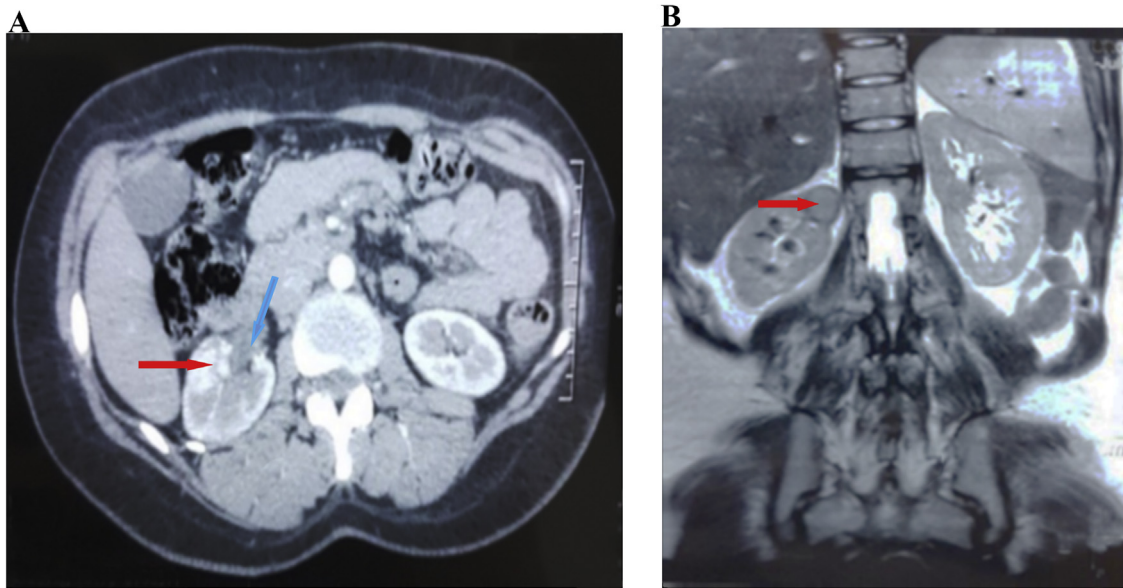


Fig. 1. (A) Computed Tomographic Urogram with Intravenous Contrast Enhancement and dilation of the renal pelvis (blue arrow), (B) MRI images showing right upper polar renal mass (red arrow).

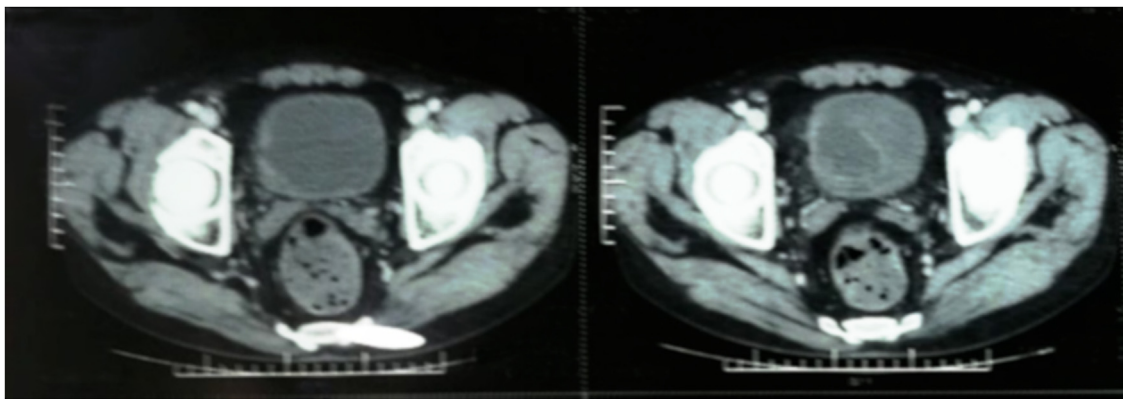


Fig. 2. Thoraco-abdomino-pelvic computed tomography scan cross-sectional view showing a bladder mass.

According to the above suspected radiologic criteria, the absence of genetic diseases and family history of renal cancer, the multifocal lesions and the little age of the patient, the malignancy of the 2 renal lesions was suggested.

A radical laparoscopic trans-peritoneal nephrectomy was performed, the intervention was well tolerated. No complication was noticed and the post-operative procedures were simple.

Histologic investigation of the excised tissues revealed a BCG-induced granulomatous and necrosis inflammation of the renal parenchyma.

No contraindications were established in the pre-treatment assessment and the patient received the anti-Tuberculosis therapy, a quadruple therapy consisting of 4 tablets of HRZE: Isoniazide (H) (75 mg) + Rifampicine (R) (150 mg) + Pyrazinamide (Z) (400 mg) + Ethambutol (E) (275 mg) for 2 months, followed by a dual therapy based on 4 tablets of HR: Isoniazide (H) (75 mg) + Rifampicine (R) (150 mg) for 6 months. The dose was adjusted according to the patient's weight. The tablets were taken once a day at a fixed time and in the morning with an empty stomach. The outcome was satisfying with a good tolerability and with no side effects.

The patient showed clinical, biological improvement and the radiological control CT scan showed no further tuberculosis associated lesions.

2.2. 2nd case

A 48-year-old male, with smoking behaviour and no past medical nor surgical history, complaining of burning micturition and paroxysmal terminal haematuria evolving since last year. He showed no lower back pain and no deterioration of the general status. Tests are normal with Hb = 13 g/l serum; creatinine = 90 μ mol/l and a CBEU showing leukocyturia = 50/ml with a negative culture.

A renal ultrasonography was made and showed a burgeoning lesion of 3 cm at the base on the left side of the bladder. The patient had a transurethral vesical tumor resection.

The histology concluded a papillary urothelial carcinoma high grade classified pT1G3 with Squamous differentiation to 25% and glandular to 5%.

As part of the staging assessment, thoraco-abdomino-pelvic computed tomography scan (Fig. 2) and bone scintigraphy did not show secondary locations.

With the presented assessments, we practiced a radical cystectomy with urinary incontinent derivation of Bricker. The post-operative outcome was simple and the patient has been released on the seventh postoperative day.

Histology of the removed part did not show any tumoral hearth, but objectified a macrophagic and gigantocellular granulomatous

reaction containing caseous necrosis on the posterolateral wall of the bladder confirming the diagnosis of tuberculosis. The patient took his anti-TB drugs -according to the protocol- 2 months of HRZE then 6 months of HR by adapting the amounts according to his weight. The outcome was satisfying with a good tolerability and with no side effects.

3. Discussion

Tuberculosis is still an emerging threat worldwide and especially in low- middle-income countries even its decreasing frequency during the last three years [3]. The primary infection is always pulmonary, but extra-pulmonary tuberculosis can exist.

The urogenital location stands for 8–10% of the extra pulmonary TBC. It is the result of a hematogenic dissemination of the *Mycobacterium tuberculosis* starting from a pulmonary hearth of the primary infection [2]. It is characterized by its stenosing and retractile capacity, and it is often bilateral but asymmetrical [6].

The diagnosis is based mainly on a mixture of clinical, biological, radiological and especially histological arguments. The clinical and morphological presentation is often polymorphic.

The unstable features, the nonspecific signs and the great polymorphism of the disease explain the delayed diagnosis [3]. Ammani and al. bring back a delayed time of diagnosis average to 2 years. The diagnostic confirmation depends on the body sites of the tubercular attack [7].

The CT Scan gives more anatomical details concerning tuberculosis than the other techniques of imagery (intravenous urography and ultrasounds), but neither the CT, nor the other techniques seem to bring a satisfactory result in the differential diagnosis. Only the histological confirmation is able to rectify the diagnosis by a biopsy ultrasound or CT Scan guided [8].

In the 1st case, the imagery proved to be insufficient to make the difference between kidney cancer and urogenital tuberculosis. The existence of a hard-cystic mass strongly enhancing in the CT Scan made us evoke in first place the diagnosis of kidney cancer.

In its pseudo-tumoral form, it can mimic a kidney cancer requiring often a useless surgical treatment whereas one would have had simply founded an antituberculosis treatment [2,9]. According to Fillion and al, the good compliance to a simple, classic antituberculosis treatment appears to be more effective than normal surgery [10].

In the second case, the diagnosis was confirmed by the histology after cystectomy. We mistreated the patient, making him undergo a difficult surgery rather than a simple medical care.

Urinary tuberculosis almost always begins in the upper urinary system and the bladder usually involved secondarily. In the chronic phase of the infection, diffuse bladder wall thickening and mucosal contrast enhancement due to ongoing chronic inflammation may be seen. As bladder tumors may sometimes present with diffuse wall thickening and decreased bladder capacity, differential diagnosis may require biopsy [11].

Due to the nonspecific clinical and imaging features of the disease, the correct diagnosis may be quite difficult. For this reason, bladder Tuberculosis should be considered especially in patients that present with a long-standing storage symptoms and sterile pyuria and/or haematuria in which no other cause is identified, to prevent major sequelae as seen in our second case [11,12].

The originality of these 2 cases shows the diagnostic difficulty and great variability of clinical and radiological presentation of this disease that may lead us to unnecessary and even harmful aggressive treatments, the diagnosis of urogenital tuberculosis should be evoked especially in developing countries, in young people with a history of tuberculosis contagion and in the absence of any genetic disease.

4. Conclusion

These 2 observations clarify the need for clinicians to evoke the diagnosis of tuberculosis while being based on a grid of demographical, clinical, biological, radiological and especially histological arguments in order to find an adequate treatment on time making it possible to avoid an unsuited aggressive treatment and to avoid any further complications.

That's why we should use more sophisticated and therefore more reliable means of diagnosis instead of imaging such as QuantiFERON test to refined the diagnosis and a polymerase chain reaction (PCR) to look for the tubercular *Bacillus* gene.

Declaration of Competing Interest

The authors report no declarations of interest.

Sources of funding

We have no sources of funding for our research.

Ethical approval

This study is exempt from ethnical approval in our institution.

Consent

We have obtained a written and signed consent to publish this case reports from the 2 patients prior to submission.

Author contribution

None.

Registration of research studies

Not applicable.

Guarantor

Professor El Kamel Rafik

Provenance and peer review

Not commissioned, externally peer-reviewed.

References

- [1] A. Saadi, H. Ayed, A. Bouzouita, W. Kerkeni, M. Cherif, R.M. Ben Slama, et al., Discovery of renal tuberculosis in a partial nephrectomy specimen done for renal tumor, *Urol. Case Rep.* 3 (3) (2015) 68–69, mai.
- [2] Y. Cao, Y. Fan, Y. Chen, Z. Zhao, Y. Song, C. Shen, et al., Gross hematuria is more common in male and older patients with renal tuberculosis in China: a single-center 15-year clinical experience, *Urol. Int.* 99 (3) (2017) 290–296.
- [3] R. Rabii, K. Moufid, A. Joul, A. Maani, S. Bennani, M.E. Mrini, *Forme pseudotumorale d'une tuberculose urinaire*, *Prog. En. Urol.* 4 (2002).
- [4] S.-F. Hung, S.-D. Chung, S.-M. Wang, H.-J. Yu, H.-S. Huang, Chronic kidney disease affects the stone-free rate after extracorporeal shock wave lithotripsy for proximal ureteric stones, *BJU Int.* 105 (8) (2010) 1162–1167.
- [5] R.A. Agha, M.R. Borrelli, R. Farwana, K. Koshy, A.J. Fowler, D.P. Orgill, et al., The SCARE 2018 statement: updating consensus Surgical CAse REport (SCARE) guidelines, *Int. J. Surg.* 60 (2018) 132–136.
- [6] S. Toccaceli, L.P. Stella, M. Diana, A. Taccone, G. Giuliani, L. De Paola, et al., Renal tuberculosis: a case report, *Il G. Chir.* 36 (2) (2015) 76–78, 27 mai.
- [7] A. Ammani, A. Janane, J. Sossa, M. Ghadouane, A. Ameer, M. Abbar, *La Tuberculose Urogenitale: Article Experience De L'hospital Militaire De Rabat Original*, 2007, pp. 7.
- [8] Sataa Sallami, Rayfa Ghariani, Amin Hichri, Olfa Zrayer, Imaging findings of urinary tuberculosis on computerized tomography versus excretory urography: through 46 confirmed cases, *Tunis. Med.* 92 (12) (2014) 743–747.

- [9] M.R. Altıparmak, S. Trabulus, I.I. Balkan, S.F. Yalin, N. Denizli, G. Aslan, et al., Urinary tuberculosis: a cohort of 79 adult cases, *Ren. Fail.* 37 (7) (2015) 1157–1163, 9 août.
- [10] A. Fillion, N. Koutlidis, A. Froissart, B. Fantin, Prise en charge diagnostique et thérapeutique de la tuberculose urogénitale, *Rev. Méd. Int.* 35 (12) (2014) 808–814, déc.
- [11] A.D. Karaosmanoglu, A. Uysal, M. Karcaaltincaba, D. Akata, M.N. Ozmen, J. Kraeft, et al., Imaging findings of infectious and inflammatory diseases of the urinary system mimicking neoplastic diseases, *Abdom. Radiol.* 45 (4) (2020) 1110–1121, avr.
- [12] J.A. Silverman, K. Patel, M. Hotston, Tuberculosis, a rare cause of haematuria, *BMJ Case Rep.* 2016 (2016), 20 juill.

Open Access

This article is published Open Access at [sciencedirect.com](https://www.sciencedirect.com). It is distributed under the [IJSCR Supplemental terms and conditions](#), which permits unrestricted non commercial use, distribution, and reproduction in any medium, provided the original authors and source are credited.