CASE REPORT

Xanthogranulomatous pyelonephritis presenting as a cystic mass: a rare case report

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Abstract

Xanthogranulomatous pyelonephritis may, rarely, occur as a renal cystic mass. We report a case report of a 50-year-old with a history of medically treated renal lithiasis, who consults for left low back pain. Imaging findings concluded to a Bosniak type-3 hemorrhagic cystic mass of the left kidney. The diagnosis of xanthogranulomatous pyelonephritis on its focal form was made histologically. The diagnosis of xanthogranulomatous pyelonephritis is often difficult even with surgical findings and frequently a histological surprise. This points out the importance of identifying it in pre-operative staging; the diagnosis may be suggested by the association of chronic pyelonephritis, renal stones and hypovascular renal tumor syndrome without specificity at sonography and CT.

INTRODUCTION

Xanthogranulomatous pyelonephritis (XGP) is a rare form of chronic infection of the renal parenchyma which is histologically defined as a combination of chronic pyelonephritis lesions and xanthogranulomatous spume cells. Its pre-operative diagnosis is difficult due to the lack of evidence of specificity [1, 2]. There are two aspects in which PXG presents, as a diffuse one, the most frequent, corresponding in fact to pyonephrosis and another pseudo-tumor focal form posing the problem of differential diagnosis with a renal tumor [1].

We report a case of pseudo tumoral xanthogranulomatous pyelonephritis whose preoperative diagnosis was in favor of a cystic tumor, pointing out the pre-operative diagnostic difficulties of this affection.

CASE REPORT

This is a 50-year-old patient with a history of medically treated renal lithiasis, who consults for left low back pain. The patient was apyretic and reported no urinary symptoms. The clinical examination was without any particularities. There was no organomegaly or lumbar contact on bimanual palpation. Bio logically, there were no abnormalities, including no biological inflammatory syndrome, and renal function was preserved. The urine culture was sterile. Renal ultrasound revealed a 3-cm left cortical renal mass with moderate vascularization. Abdominal CT scan confirmed the presence of a heterogeneous Bosniak type 3 cystic mass having a thickened wall (Fig. 1). Abdominal MRI showed a left polar cyst having an exophytic development and a thickened wall with spontaneous T2 hypointensity and...
Renal calculi, frequently staghorn stones, may be seen in up to 100% of the published cases [4]. Altered immune response and intrinsic disturbance of leukocyte function have been reported to be possible risk factors [5, 6]. XGP is frequently unilateral and bilateral cases of XGP are extremely rare. Shah et al. [7] reported one bilateral XGP child case managed non-surgically.

Radiologically, the pre-operative diagnosis of XGP is only made in about half of cases from CT data. In the localized form of XGP, CT often reveals a cortical, hypodense and heterogeneous mass with calcifications in some cases. After contrast injection, the mass does not usually increase in density; however, an intense peripheral enhancement corresponding to compressed healthy renal tissue and/or inflammatory tissue is however, an intense peripheral enhancement corresponding to compressed healthy renal tissue and/or inflammatory tissue is shown [8, 9]. The CT appearance of XGP can mimic clear cell carcinoma, cystic, necrotic or infected kidney tumors, or even some forms of lymphoma [8]. Ichaoui et al. [10] reported that a cystic mass of the kidney was suspected in 10% of cases in their series of 42 patients but the histological examination confirmed the diagnosis of PXG. MRI is usually performed as part of a kidney tumor work-up. In fact, MRI seems to establish the diagnosis of focal XGP with better specificity due to its good characterization of adipose tissue [11, 12].

XGP induces a variable and non-specific clinical and radiologic picture. Moreover, there is no pathognomonic clinical or radiologic sign of this condition as it resembles other inflammatory or neoplastic renal pathologies. The diagnosis is usually made on histological examination after surgical treatment.

The histological examination usually shows a dense inflammatory infiltrate of all interstitial tissue with presence of lymphocytes, plasmocytes and neutrophils. We notice a replacement of adipose tissue [11, 12].

The treatment of focal XGP is both medical and surgical [1, 8]. Although the effectiveness of medical treatment based on antibiotic therapy alone has been reported in some cases of focal XGP like Fitouri et al. [13] who reported an XGP case confirmed by percutaneous biopsy. And successfully treated with 8 weeks’ antibiotic therapy.
antibiotic therapy. Most series recommend a conservative surgical treatment consisting of partial nephrectomy or limited resection of the lesion after an empiric or adapted antibiotic therapy. In our case, our patient did not receive an antibiotic therapy because the diagnosis XGP in its focal form was never suspected, and urine culture was negative.

CONCLUSION

XGP in its focal form is a rare benign disease of the kidney. Its treatment should be conservative based on partial nephrectomy or tumorectomy with antibiotic therapy. Lack of knowledge of this disease and the absence of clinic or radiologic specific signs may explain the high rate of misdiagnosis.

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no competing interests.

CONSENT

Authors declared that they received written consent from the patient to publish this case report.

REFERENCES

1. Loffroy R, Varbéadian O, Guiu B, Delgal A, Michel F, Cercueil JP, et al. La pyélonéphrite xanthogranulomateuse: principaux aspects en imagerie [Xanthogranulomatous pyelonephritis: main imaging features]. Prog Urol 2008;18:266–74 French.
2. Chlif M, Chakroun M, Ben Rhouma S, Ben Chehida MA, Sellami A, Gargouri MM, et al. Xanthogranulomatous pyelonephritis presenting as a pseudotumour. Can Urol Assoc J 2016;10:E36–40.
3. Schlagenhauer F. Uber eigentumliche staphylomykosen der niercn und des pararenalen bindewebes. Frankf Z Pathol 1916;19:139–48.
4. Schlagenhauer F. Uber eigentumliche staphylomykosen der niercn und des pararenalen bindewebes. Frankf Z Pathol 1916;19:139–48.
5. Li L, Farwani AV. Xanthogranulomatous pyelonephritis. Arch Pathol Lab Med 2011;135:671–4.
6. Çalışkan S, Özsoy E, Kaba S, Koca O, Öztiürk Mİ. Xanthogranulomatous pyelonephritis. Arch Iran Med 2016;19:712–4.
7. Shah K, Parikh M, Pal B, Modi P. Bilateral focal xanthogranulomatous pyelonephritis in a child presenting as complex cystic renal mass: a report on non-surgical treatment. Eur J Pediatr Surg 2011;21:207–8.
8. Kuo CC, Wu CF, Huang CC, Lee YJ, Lin WC, Tsai CW, et al. Xanthogranulomatous pyelonephritis: critical analysis of 30 patients. Int Urol Nephrol 2011;43:15–22.
9. Rachidi SA, Zerioeu A. Tumeur rénale ou pyélonéphrite xanthogranulomateuse pseudotumorale [Renal tumor or pseudotumoral xanthogranulomatous pyelonephritis]. Pan Afr Med J 2018;29:67 French.
10. Ichaoui H, Saadi A, Chakroun M, Ayed H, Bouzouita A, Cherif M, et al. Xanthogranulomatous pyelonephritis in adults: clinical, biological, radiological and therapeutic main findings in diffuse and focal forms. About 42 cases. Tunis Med 2018;96:495–500.
11. Udare A, Abreu-Gomez J, Krishna S, McInnes M, Siegelman E, Schieda N. Imaging manifestations of acute and chronic renal infection that mimics malignancy: how to make the diagnosis using computed tomography and magnetic resonance imaging. Can Assoc Radiol J 2019;70:424–33.
12. Verswijvel G, Oyen R, Van Poppel H, Roskams T. Xanthogranulomatous pyelonephritis: MRI findings in the diffuse and focal type. Eur Radiol 2000;10:543.
13. Fitouri Z, Nouira Y, Nouira K, Sallami S, Hmidi M, El Fekih N, et al. Focal xanthogranulomatous pyelonephritis: success of conservative treatment. A case report. Tunis Med 2008;86:912–5.