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Case Report

# Pseudotumor Xanthogranulomatous Pyelonephritis: Dignaostic and Therapeutic Difficulties (Two Cases)

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**Abstract:** ***Introduction:*** Xanthogranulomatous pyelonephritis is a rare and unusual form of chronic pyelonephritis, characterized by the destruction of the renal parenchyma and its replacement by granulomas, abscesses and lipid-laden macrophage collections. Despite clinical and radiological knowledge, it remains a surprise for the surgeon. We are reporting through these two observations the diagnostic difficulties of this condition would lead to an inappropriate treatment as well as to a more severe disease. ***Observations***: Two patients (52 and 57 years old), one of whom is followed fortype 2 diabetes mellitus , were hospitalized for pyonephrosis due to obstructive pyelic and ureteral lithiasis. The pyonephrosis was revealed by a chronic loin pain in a febrile context and confirmed by urogramme showing a destruction of the renal parenchyma, dilated pyelocaliceal cavities with rounded formations of pseudo-tumoral appearance on the lithiasis obstacles. Our initialtreatment consisted of percutaneous nephrostomy under antibiotic covering and secondarily of nephro-ureterectomy without bladder flange performed six weeks later. Histopathology studies showed diffuse xanthogranulomatous pyelonephritis. The postoperative follow up was simple in both cases. ***Conclusion*:** Xantogranulomatous pyelonephritis is a rare, severe and chronic form of pyelonephritis whose diagnosis is always histological. Its clinical picture is no specific, hence the problem is that it poses achalleng of differential diagnosis with renal tumors and urogenital tuberculosis. Its treatment is based on nephrectomy.

**Keywords:** Xanthogranulomatous pyelonephritis, chronic pyelonephritis, diagnosis, percutaneous nephrostomy.



## INTRODUCTION

Xantho-granulomatous pyelonephritis is a rare and unusual histological form of chronic pyelonephritis [1], characterized by the destruction of the renal parenchyma and its replacement by granulomas, abscesses and lipid-laden macrophagic collections [2]. Despite clinical and radiological knowledge, it remains a surprise for the surgeon because of the problem of differential diagnosis with renal tumors and urogenital tuberculosis. We are reporting through these two observations the diagnostic difficulties of this condition leading to an inappropriate treatment and worsen the condition to a more severe disease.

## PATIENTS AND METHODS

### Case 1

This is about about a 52-year-old patient followed for hypertension on amlodipine 5mg for 5 years and on antidepressants for manic depression, who was presenting 18 months ago with bilateral renalrenal colic for 18 months before the consultation , the pain was predominantly on the right, for which the patient had been derived by double J stenting and then lost sight , the current history goes back to one month with left lumbar pain associated with burning mictional , diurnal and nocturnal pollakiuria without fever. The examination revealed anon febrile patient at 36, 7°c with slight alteration of the general status with a WHO status of 1. A large mass on the flank extending to the right hypochondrium which is dully barred in front by

the colonic sound realizing a lumbar contact was found at the palpation and percussion, the pelvic examinations (PR andR) were normal. White blood cells at 8200/mm3 with CRP at188mg/L, normal hemoglobin at 14g/dl and hyperglycemia at 4.71g/l. Renal function was normal 15mg/L. Echreichia coli was isolated on uroculturing. Uinary tract without preparationX-rayshowed: two double J ureteral stents in place but the left one was calcified at its distal end, a large watery tone opacity in the presumed right renal area within which there were calcium tone opacities and left calial lithiasis (Figure 1).

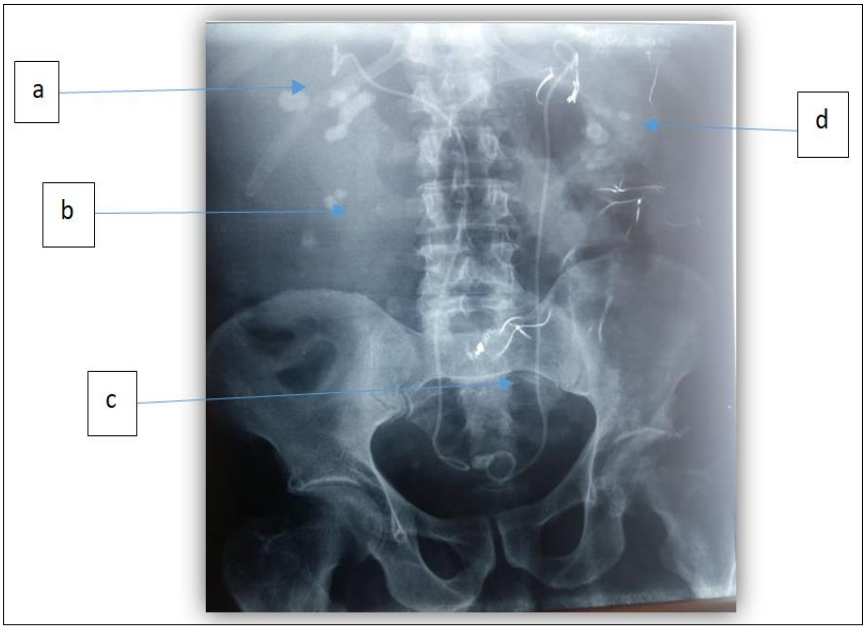


**Figure 1**: **Urnary tract x-ray objectifying (a) Right calcium tone opacity, (b) Voluminous watery tone opacity, (c) Double Jstent in place with distal left calcified loop and (d) Calcium tone opacity in the left renal**

The renal ultrasound showed a hydronephrosis with multiple lithiasis, completed by a uroscanner which showed a pyelic lithiasis complicated by pyelocalciceal dilatation with a destruction of the renal parenchyma with a macro- lithiasis of the bladder (figures 2, 3). The therapeutic management consisted of a percutaneous nephrostomy.

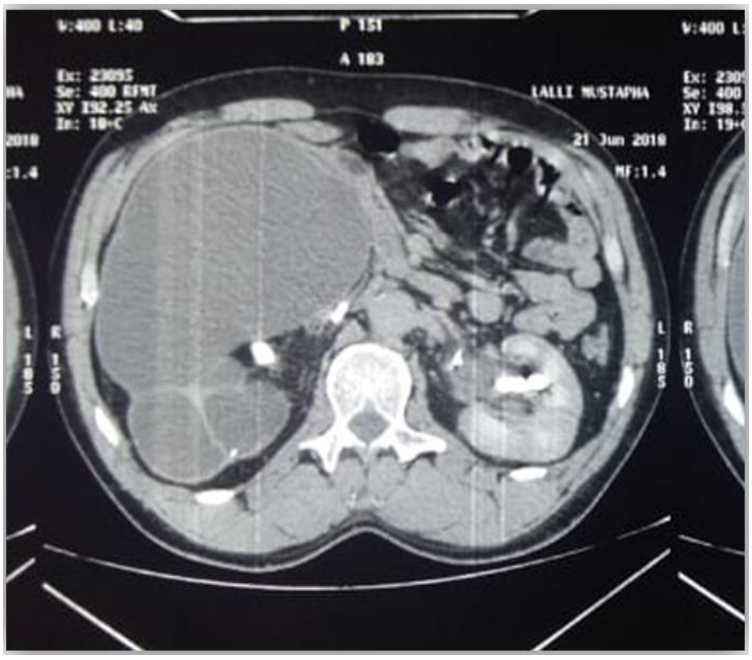


**Figure 2: Pyelic lithiasis complicating pyelocalciceal dilatation with destruction of the renal parenchyma creating a bear paw image**

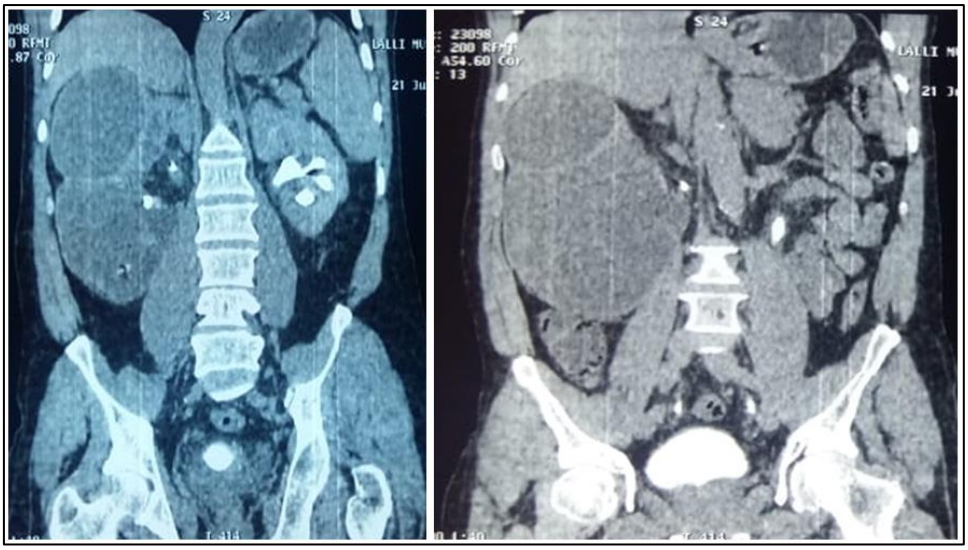

**Figure 3**: **Absence of renal excretion at the late stage with a bladder macro-lithiasis and a mass of liquid density laminating the cortex (image of the bear paw)**

A right nephrectomy with removal of the right double Jstent was performed one week later during the same hospitalization under tri-antibiotic therapy. The evolution was favourable; the patient was discharged at D6 under per- oral bi-antibiotic therapy. histopathologicalstudy: diffuse xantho-granulomatosis

**Case 2**

This is about a 71-year-old diabetic patient on insulin, whowas complaining of right lower back pain for two years, associating with fever and burning micturationfor 10 days before the admision . The clinical examination revealed: a fever of 38.5°C, slight alteration of the general condition. A large dully mass in the right flank andthehypochondria giving lumbar contact. Pelvic examinations (PRand PV) were normal. Hyper leukocytosis at 118700/mm3 with CRP at 188mg/L, microcytic hypochromic anemia 09g/dl and hyperglycemia at 5.71g/l, acetonuria negative. Renal function was normal 10mg/L. Klebsiela pneumoniae was isolated onthe urineculture. The renal ultrasound showed a major hydronephrosis with destruction of the right renal parenchyma that was completed by a uro-scanner which showed: a major right uretero-hydronephrosis laminating the renal cortex on a staghorn lithiasis of 39mm*28mm of 1482UH and a left inferior caliciceal lithiasis of 15mm*10mm 2300UH (figure 4 and 5).

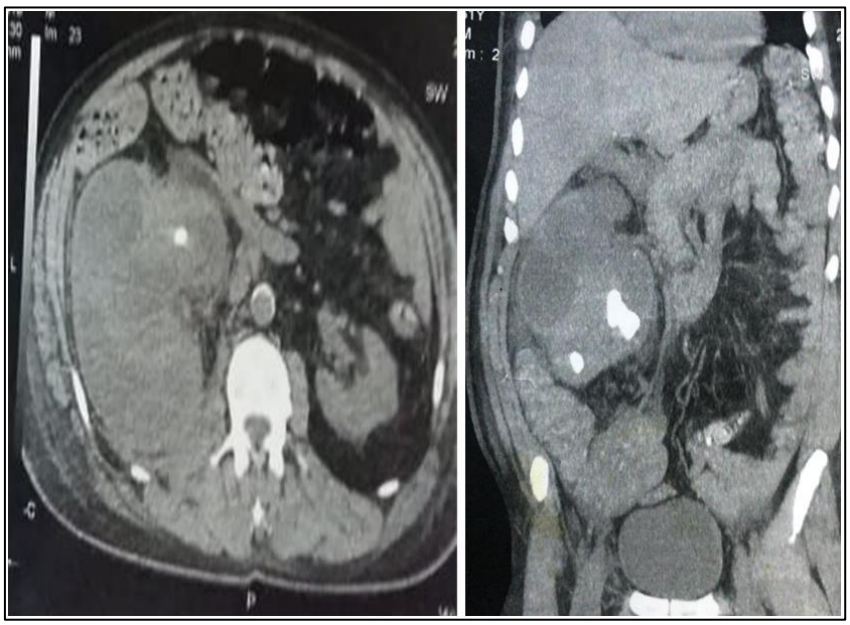

**Figure 4**: **staghorn stone and inferior caliceal lithiasis complicating pyelocaliceal dilation with deformation of the abdomen in frontal section (a) and (b) bear pate image**

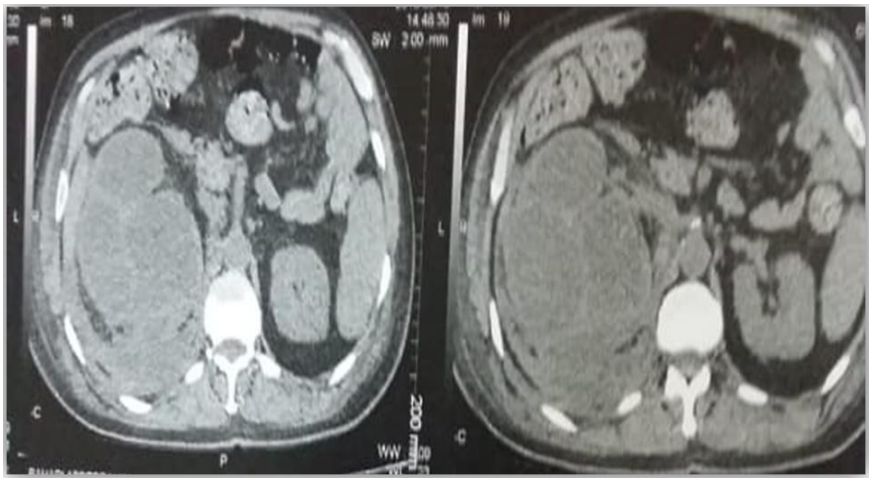

**Figure 5**: **Important nephromegaly with pyelocaliceal dilatation laminating the cortex with densification of the perirenal fat realizing the bear paw image**

The course of action: glycemic control with a basal bolus regimen, antibiotic therapy, rightpercutaneous nephrostomy and then a right nephro-ureterectomy was performed six weeks later. The evolution was favorable, the patient was discharged at day 5 with per-oral bi-antibiotic therapy. histopathological study: diffuse xantho- granulomatosis pyelonephritis. Renal function test one month later is 13 mg.

## DISCUSSION

Xanthogranulomatous pyelonephritis (XGP) is a form of chronic renal suppuration [3, 4] occurring at any age, after 40 years, it affects more frequently three women for one man [5] but paradoxically men were concerned. Its etio- pathogenesis is not well known but the obstruction of the excretory tract (lithiasis, stenosis, tumor), recurrent urinary tract infection and immune deficiencies are the etiological factors [6, 7]. The obstructive lithiasis of the urinary tree was the cause of PXG in the two observations associated with an immune deficiency in the second case, The literature describes three anatomical forms [8] of PXG are recognized: the form, diffuse: The clinical presentation is non-specific and classically variable, with low back pain, recurrent fever, altered general condition and sometimes urinary signs [9]. The clinical examination finds a lumbar mass in half as in our observations where the lumbar contact was very obvious. It can be revealed exceptionally following abscessation and fistulization towards the subcutaneous tissue of the lumbar fossa [10]. This was not the case in our observations. The biological abnormalities observed during PXG can be summarized as an inflammatory syndrome. Ultrasound may show intra sinus anechoic areas with posterior enhancement corresponding to dilated calyceal cavities [11, 12] abdominal CT may show pyelo-caliceal dilation or focal areas of destruction of the renal parenchyma filled with pus and debris realizing the bear paw sign [13, 14]. In our two observations, the CT scan showed the typical images of PYONEPHROSIS as described in the literature. Despite the progress in medical imaging, the diagnosis of PXG often remains unrecognized; its differential diagnosis is made with renal tumors and tuberculosis). Mekki M *et al.*, on a series of 03 cases were surprised to have a nephroblastoma of the kidney on histology [8], in our observations the diagnosis of a squamous cell carcinoma had been evoked before: the moderate alteration of the general state and especially the presence of lithiasis considered as a carcinogenic risk factor of the squamous cell carcinoma of the excretory tract but the fever, However, the fever, the infectious syndrome and the typical image of the bear's paw of the pyonephrosis in both cases make the positive diagnosis difficult, which is why some authors think that an exhaustive exploration followed by a percutaneous biopsy could be carried out in order to make the diagnosis of xantho-granulomatous pyelonephritis, especially in the focal forms, before any surgical procedure [15]. Histology of the specimen confirms the diagnosis [17].

## CONCLUSION

Xantogranulomatous pyelonephritis is a rare, severe and chronic form of pyelonephritis whose diagnosis is always histological. Its clinical picture is non-specific, hence starts the problem of differential diagnosis with renal tumors and urogenital tuberculosis. Its treatment is based on nephrectomy.

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