DUBIOUS APPENDICITIS TO BE ACCOMPANIED BY RIGHT XANTHOGRANULOMATOUS PYELONEPHRITIS: A CASE REPORT

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Abstract

Xanthogranulomatous pyelonephritis (XGP) is a rare chronic kidney infection that can cause a progressive decline in kidney function and lead to kidney removal or death. Symptoms of right flank pain due to XGP, sometimes radiating to the lower abdomen were difficult to assess and distinguish from urinary tract diseases alone or accompanied by the involvement of other organs like appendicitis. We report a fifty-year-old woman was referred because of a suspected mass in the right kidney based on ultrasound, but the results of the Ct-Scan with contrast showed stones and chronic parenchymal kidney with a tendency to right pyelonephritis. There were no post-contrast enhancing masses in both kidneys. Then, decided to perform a nephroureterectomy and found inflammation in her appendices. Histopathology showed xanthogranulomatous pyelonephritis and chronic appendicitis. The patient was diagnosed with Chronic pyelonephritis based on CT-Scan, but the previous ultrasound showed no appendicitis, there was a mass in the right kidney. During nephroureterectomy, there were chronic appendicitis and Xanthogranulomatous Pyelonephritis after histopathology examination. This report describes uncommon pyelonephritis and confirms the difficulty of differentiating right XGP from appendicitis, even though it occurred in a large city. Moreover, it can be a lesson for general practitioners to be more thorough in diagnosing right abdominal or flank pain.

Keywords: Appendicitis; Chronic Pyelonephritis; Xanthogranulomatous.

A. INTRODUCTION

Xanthogranulomatous pyelonephritis (XGP) is a rare chronic kidney infection that can cause a progressive decline in kidney function and lead to kidney removal or death (Donny et al., 2022). It has undergone a suppurative condition. Occurred in less than 1% of all cases of chronic pyelonephritis and is characterized by the destruction of the renal parenchyma and then replaced by granulomatous tissue containing xanthomatous cells (ichaoui et al., 2018; Alexandera et al., 2015).

The most frequent XGP symptoms in several studies were sub-febrile temperature, flank pain, weight loss, and weakness (Alexandera et al., 2015; Abelnabi et al., 2023). The symptoms of right flank pain radiating to the lower right abdomen are very difficult to distinguish from appendicitis and could be life-threatening complications (Manglik et al., 2022).

Several studies show the diagnosis of right chronic pyelonephritis with flank pain which is sometimes considered not appendicitis or even vice versa. In the following case, the patient was initially diagnosed with chronic pyelonephritis, and no investigations said there was appendicitis (Li et al., 2011; Loffroy et al., 2007; Chandrasekaran, 2021). It was discovered that the patient had chronic appendicitis and pyelonephritis after a nephroureterectomy.
B. METHOD

A 52-year-old woman was referred for suspicion of a mass in the right kidney based on an ultrasound imaging examination at a previous hospital and had obtained lithotripsy of bladder stone with bilaterally JJ Stent insertion. The patient had experienced right low back pain since a year ago, accompanied by pain in the lower abdomen every time she urinated. She had no fever but chills.

The patient went to a clinic near her house because afraid of appendicitis and said that it was not appendicitis, only lower back muscle pain, so she received analgetic. After a few months, the patient did not have any complaints. However, it recurred about eight months later, accompanied by vomiting, chills, and several reddish urination, then suddenly could not urinate and was referred to the hospital. History of similar diseases and family history of diseases were denied. There was no history of chronic diseases.

At that time, abdominal ultrasound imaging showed multiple stones in the bladder and right kidney with a mass in the right kidney (Figure 1,2).

Figure 1. RK: Ultrasound imaging of the kidneys showed the both kidney appeared enlarged, the pelviocalyceal system was widened, multiple hyperechoic lesions with acoustic shadows (0.95 cm and 2.05 cm), homogeneous hypoechoic lesions at the lower pole (7.93 x 6.85 cm) in the right kidney.

Figure 2. VU: hyperechoic lesions with acoustic shadows (1.84cm).

Therefore, a lithotripsy of bladder stones procedure and bilaterally JJ Stent insertion was performed due to ureteral stricture and hydronephrosis.

After the lithotripsy of bladder stones had been done. The patient was referred to our hospital to get an advanced examination. A physical examination showed no palpable mass on the right flank, but the right flank pain was positive. Then, examined for an abdominal-pelvic CT scan with contrast and renogram with the following results.

CT-scan showed multiple stones appearing in the inferior calyx of the right kidney, in the proximal right ureter, in the right mid ureter, and in the right distal ureter (Figure 3).
Figure 3. Post-contrast coronal CT intravenous pyelogram in the nephrographic phase. The appearance of inferior calyx stones in the right kidney. Dilatation of the pelvicalyceal system of the right kidney. There was gloom in the right perirenal fat (inferior side of the right kidney). Dilatation of the pelvicalyceal system of the left kidney was seen. There were no post-contrast enhancing masses in both kidneys.

The patient underwent a right nephroureterectomy for indications that the right kidney was not functioning. She also got an electrolyte imbalance, mild anemia, and infection. She got antibiotic treatment cefoperazone 1g/12 hours intravenous, and electrolyte correction for hypokalemia and hypomagnesemia. After a nephroureterectomy, the JJ stent in the left kidney remains in place.

After surgery, her condition was better. She was allowed to get outpatient care. One week later, the patient was in control. She had no complaints. The biopsy suggested a Xanthogranulomatous Pyelonephritis and the appendix tissue suggested a chronic appendicitis. For the next therapy, planning to perform a cystoscopy and left JJ stent removal.

On the renogram, there was a decreased function of both kidneys, especially the right kidney, accompanied by a partial obstruction of the left kidney (Figure 4).

Figure 4. Relative uptake of left kidney: right kidney = 87.8 %:12.2%. On the renogram of the left kidney, after the initial phase, the curve continued to rise and then fell gently after administration of the diuretic furosemide. On the renogram of the right kidney, after the initial phase, the curve appears to be flat.

C. RESULT AND DISCUSSION

XGP is characterized by the destruction of the renal parenchyma and then replaced by granulomatous tissue containing xanthomatous cells (Donny et al., 2022; Zhunan et al., 2021; Timothy et al., 2023). Most cases of XGP are unilateral and frequently associated with urinary tract obstruction, infection, nephrolithiasis, diabetes, and immune disorders (Alexandera et al., 2015; Zhunan et al., 2021).

Cases of Xanthogranulomatous Pyelonephritis occur in approximately 1% of adults with pyelonephritis and 16% of nephrectomy cases in pediatrics and most often occur in
women with a ratio of 3:1 to men. However, its true epidemiology and etiology are still unknown (Zhunan et al., 2021; Akhtar et al., 2017; Pais et al., 2022).

In several case reports, chronic pyelonephritis generally has symptoms like fever with flank pain. Mostly, it is experienced by appendicitis patients who have experienced pain accompanied by fever and tenderness in the right iliac fossa. However, other clinical conditions may have similar features and should be excluded (Manglik et al., 2022; Kundu et al., 2019; Rathi et al., 2015).

We reported a 52-year-old female patient with a history of right flank pain accompanied by lower right abdominal pain that occurs when urinating followed by reddish urination accompanied by chills but no fever. The patient went to the nearest clinic for fear of appendicitis and only obtained a diagnosis; of myalgia on the flank area and received analgesic drugs. It relapse again eight months later with more severe complaints. Suddenly, she could not be able to urinate.

Ayant Manglik et al reported a similar case of ectopic kidney initially suspected as acute appendicitis in a middle-aged man who complained of right lower quadrant abdominal pain and high fever for one week. Clinical suspicion and initial abdominal ultrasonography (USG) supported the diagnosis of acute appendicitis. Initially, he obtained conservative management. Further, Non-Contrast Computed Tomography (NCCT) scan was performed. It showed a right ectopic kidney with acute pyelonephritis. The appendix was within normal limits on the NCCT scan (Manglik et al., 2022; Gri et al., 2021; Sethi et al., 2021). Similar to a case report from Alexander Friedl about a 74-year-old woman with XGP and multiple abscesses in the upper pole of the right kidney with obstructing kidney stones in the mid-calycyces developed severe colitis and gangrenous appendix during therapy. Both case reports show that it is not easy to diagnose pyelonephritis or appendicitis even with adequate radiology equipment.

In this case, the patient had the previous ultrasound imaging done with results of multiple stones bladder and in the right renal accompanied by a mass in the right kidney. There is no appendicitis written (Figure 1,2). But, Ct-scan with the contrast of the abdomen-pelvis showed that multiple stones appear in the inferior calyx of the right kidney, in the proximal right ureter, in the right mid ureter, and the right distal ureter with bilateral hydronephrosis. Renal's parenchymal with a tendency to right pyelonephritis chronic. There were no post-contrast enhancing masses in both kidneys (Figure 3).

Although, Ultrasound imaging and CT scans are important tools in differential diagnosis (Mark et al., 2021). Ultrasound imaging is frequently performed but is less sensitive and specific than CT, often unable to differentiate XGP from a renal abscess or malignancy. Ultrasound imaging is greatly operator dependent, while CT-scan provides excellent diagnostic accuracy (Manglik et al., 2022; Federica et al., 2021; Mark et al., 2021). A definitive diagnosis of XGP is diagnosed based on histological examination (Venyo, 2019; Jain et al., 2022; Oostergo et al., 2013).

D. CONCLUSION

This report describes uncommon pyelonephritis and confirms the difficulty of differentiating right XGP from appendicitis, even though it occurred in a large city even with adequate radiology equipment. Moreover, it can be a lesson for general practitioners to be more thorough in diagnosing right abdominal or flank pain.

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REFERENCES


