



Primary Chronic Pyelonephritis: A Case Report

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Abstract

A 69-year-old woman with renal insufficiency and hypertension was misdiagnosed for 25 years. She was hospitalized for worsening renal function, fever and anemia. Kidney MRI showed enlargement of renal pelvis and distortion of calyces and scarring of the overlying of two kidneys. Primary chronic pyelonephritis was diagnosed and renal function recovered partially after antibiotics treatment.

Introduction

Primary chronic pyelonephritis is rare, may progress to an advanced stage in the absence of any recognizable episode of urinary tract infection and go unrecognized for long periods. Our case is extremely valuable for clinical recognition of chronic pyelonephritis.

Case Description

A 69-year-old woman with 25-year history of renal insufficiency with hypertension was hospitalized for worsening renal function, back pain and fever on September 21, 2017. Her past history included extracorporeal shock wave lithotripsy for left renal stone and percutaneous nephrolithotomy for right ureteral stone. In addition, 5 years earlier she had been admitted to our department for anemia, high level of serum creatinine. At that time, serum creatinine was 160 $\mu\text{mol/l}$, hemoglobin was 80 g/l, 24-h proteinuria 0.65 g, Urine leukocytes were 2-3 per high power field and urine culture was negative. Kidney ultrasonic showed right kidney was smaller than the left. The patient was discharged with the diagnosis of chronic renal insufficiency and hypertensive nephropathy. At the time of this admission, the blood pressure 129/77 mmHg, temperature 38.5°C, physical examination was unremarkable. Laboratory data revealed ESR 98 mm/h, CRP 51 mg/l, urine osmotic pressure 388 mosm/kg, Hb 74 g/l, serum creatinine 410 $\mu\text{mol/l}$, Urine leukocytes 2-3/HP and urine culture was negative. Kidney MRI showed enlargement of renal pelvis and distortion of calyces and scarring of the overlying of two kidneys (Figure 1). On the basis of clinical history and kidney MRI, we diagnosed primary chronic pyelonephritis with active episode. Antibiotics and support treatment were administered. The temperate went back to normal and serum creatinine decreased to 314 $\mu\text{mol/L}$.

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Discussion

This case was misdiagnosed for long periods because of no irritation sign of bladder, no leukocyturia and no urinary tract obstruction. Chronic pyelonephritis usually occurs in patients with major anatomic abnormalities. In our case, the patient without comorbidities of urinary tract obstruction and vesicoureteral reflux was diagnosed as primary chronic pyelonephritis based on the typical manifestation of renal MRI. Primary chronic pyelonephritis may develop hypertension and renal impairment despite apparent healing of urinary tract infection and the diagnosis is especially difficult [1,2]. Identification of chronic pyelonephritis would be of value for the reason that an acute

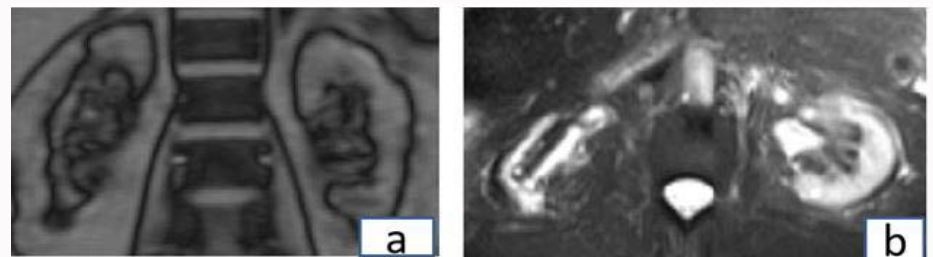


Figure 1: Overall renal asymmetry, scarring of the overlying of two kidneys (a) Atrophy and cortical thinning; (b) Renal capsule thickening, Dilatation of renal pelvis.

episode might be recognized and treated completely before it reached an irreversible and progressive stage. The imaging picture is more important than histological details. A diagnosis on renal biopsies is therefore not warranted [3]. Intravenous pyelography is the most common method used to visualize abnormalities of the urinary system, but the contrast agent may cause deterioration of renal function, especially for patients with renal insufficiency. Renal MRI is a safe and valuable test for looking at kidney structures in these patients.

In conclusion, primary chronic pyelonephritis is rare and easily misdiagnosed. Renal MRI may be of value for the diagnosis. The treatment of acute episode could retard the progression of renal function.

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