Case Report

Pyelonephritis

Successful Conservative Treatment of Emphysematous Pyelonephritis in a Diabetic Patient

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ABSTRACT

Emphysematous pyelonephritis is an uncommon condition, with severe potentially fatal necrotizing pyelonephritis due to gas producing organisms (generally gram negative bacilli, esp. E. coli, proteus, pseudomonas, enterobacter and klebsiella).It occurs usually in elderly diabetics with poor glycemic control and frequently associated with ureteric obstruction. Though most of the patients still require nephrectomy albeit improvement in medical treatment, we present a case of successful conservative treatment of emphysematous pyelonephritis in a diabetic patient.

Key Words: Emphysematous pyelonephritis, nephrectomy.

INTRODUCTION

Emphysematous pyelonephritis is a rare condition in which gas develops inside the kidney, perinephric space and/or urinary collecting system. Computed tomogram is gold standard for diagnosis. The Hallmarks of the disease are high grade fever, leukocytosis, renal parenchymal necrosis with exudative material ,accumulation of fermentation gases within the dilated renal collecting system. Till mid 1980s the standard treatment was nephrectomy because preserving the kidney led to mortality of 60-80%.This situation improved over the last few decades with early CT diagnosis and advances in multi disciplinary care of sepsis and multiorgan dysfunction with mortality of 20-25%. Renal emphysema may also be caused by iatrogenic causes (catheterization, retrograde pyelography etc.) or fistulous communication to the skin or a gas-containing viscous. Although there are reports of improved renal functions after medical therapy combined with relief of obstruction by uretero pelvic stenting of drainage of pent-up collections, but most of the patients still require nephrectomy.[1,2,3]

CASE REPORT

A 38 years old male presented with left lumber pain, low grade fever, dysuria and shortness of breath. On physical examination blood pressure was 145/85mmHg, pulse 100/min, respiratory rate 20/min, and temperature 101F.

On auscultation there were decreased breath sounds on left side. CVS was unremarkable. Laboratory investigations showed hemoglobin 12.6gram/dl, leucocytes 11.1x10^9/L, neutrophils 90%, lymphocytes 20%, eosinophil's 2%, monocytes 3%, PLT 80x10^9/L, serum urea 13.8mmol/L, serum creatinine 140umol/L. Urine microscopy and biochemistry showed albumin 1+, sugar 1+, and numerous pus cells. X ray plain abdomen showed radiolucent streaks overlying the renal fossa (Figure 1).

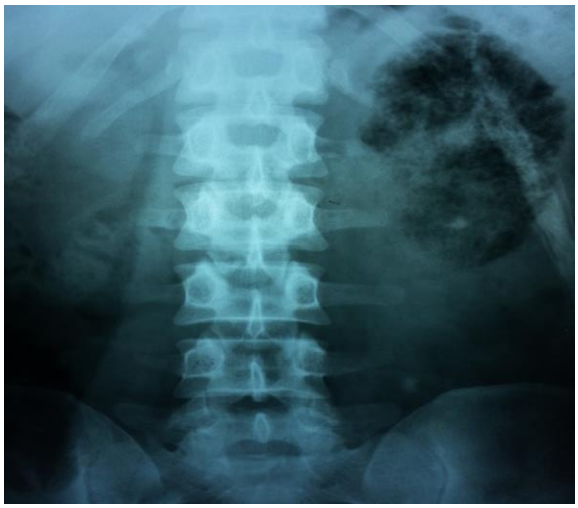

Figure No.1: X ray plain abdomen showed radiolucent streaks overlying the renal fossa with radio opaque calculus in lower pole of kidney and ureteric line (left)

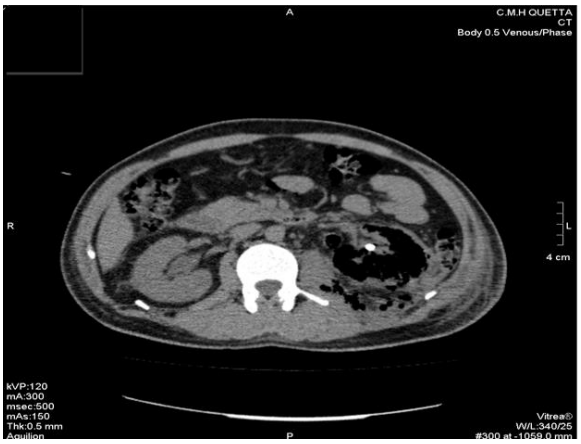

Figure No.2: CT scan KUB showed acute emphysematous pyelonephritis (type 1) on left side with renal calculus

Left kidney could not be visualized on ultrasound abdomen. CT scan KUB showed acute emphysematous pyelonephritis (type 1) on left side with extension of air lucencies into retro peritoneum, left proximal ureter and

left renal vein (Figure 2). Patient was kept on conservative treatment because he was stable and improved with the medical treatment successfully.

DISCUSSION

Empysematous pyelonephritis is a life threatening necrotising pyelonephritis with variable clinical presentation, ranging from mild abdominal pain to septic shock. The majority of cases occur in diabetics with poor glycemic control while a small percentage is due to urinary tract obstruction.[4]

It is mostly reported in elderly patients but our patient is young. Gaither K et al[2] reported 37 years old female with 7 year history of nephrolithiasis and pyelonephritis. She was diagnosed with EPN. She was also six weeks pregnant. Drainage of left pyonephrosis and stenting was done later. Patient was discharged on 8th post operative day but she never returned for follow up.

On ultrasonography we could not visualize left kidney initially and also not on repeat sonogram. Rauf AA[5] et al reported a case with unremarkable renal sonogram but two days later visualized right kidney could not be seen. EPN was confirmed on CT and repeat Xray.

The majority of cases of EPN reported occur in diabetics and urinary tract obstruction. Dubey IB et al[6] reported EPN in non diabetic patient with non obstructed kidney.

Jaisuresh K[7] had a successful conservative treatment of bilateral EPN patient with autosomal dominant polycystic kidney disease. Percutaneous needle aspiration of infected cyst was done and antibiotics were given.

Morioka H et al[8] reported a case with bilateral EPN who also had a splenic abscess.

EPN is a life threatening condition. Over years nephrectomy had been treatment of choice but due to advances in medical care and multidisciplinary approach, conservative treatment saves the kidneys and so do the patient.

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