



## ACUTE PYELONEPHRITIS PRESENTING AS ACUTE ABDOMEN IN DIABETIC PATIENTS: CASE REPORT

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### ABSTRACT

Acute pyelonephritis is a potentially fatal infection which often presents with varied clinical signs and symptoms. Diagnosis is often get delayed as there is no consistent set of signs and symptoms that are both sensitive and specific for the diagnosis. Failure to diagnose these cases may lead to complications especially when patients have other comorbidities like diabetes mellitus. Patients presenting as acute/ surgical abdomen may lose precious time in doing other investigations where a simple urine R/E can reveal masquerading acute pyelonephritis. A high index of clinical suspicion may be lifesaving here. Acute pyelonephritis is frequently got complicated with acute kidney injury due to hypotension and obstruction. However, pyelonephritis itself causing acute kidney injury is quite rare. Here we report two such cases.

**KEYWORDS :** Acute pyelonephritis, acute kidney injury, acute abdomen

### INTRODUCTION-

Acute pyelonephritis is a potentially life-threatening infection that often leads to renal scarring. Acute pyelonephritis results from bacterial invasion of the renal parenchyma. Bacteria usually reach the kidney by ascending from the lower urinary tract. Bacteria may also reach the kidney via the bloodstream. Patients typically present with urinary tract symptoms like dysuria, frequency, urgency, gross hematuria, suprapubic pain, flank pain and back pain, with or without systemic signs and symptoms like fever, chills, abdominal pain, nausea, vomiting, and costovertebral angle tenderness. However, acute pyelonephritis can present as nonspecific symptoms. Timely diagnosis and management of acute pyelonephritis have a significant impact on patient outcomes.

### CASE REPORT-

Here we report two diabetic cases of acute kidney injury (AKI) due to acute pyelonephritis presenting as acute (surgical) abdomen.

#### Case 1-

45 years old lady with a history of diabetes since 1 year and appendectomy 4 years back presented to our emergency department with pain abdomen since 3 days and vomiting since 2 days. She was admitted in surgery department and evaluated further. On physical examination mild diffuse tenderness +, bowel sound +, costovertebral angle tenderness +, BP- 110/80 mmHg. Investigations FBS-135mg/dl, ESR- 130 mm, Hb- 7.2 gm%, TC- 17900/cumm, HbA1c-6.53gm%, total RBC count=2.47 million/cumm, PCV- 19.5%, MCV- 79.0cubic micron, s. ferritin-148microgm/dl, s. amylase- 65 u/l, s. lipase- 14 u/l, s. creatinine- 3.81 mg/dl, urine R/E- 12-15 pus cells / hpf, urine C/S- insignificant growths, ultrasound abdomen- raised cortical echotexture with bulky contour suggestive of pyelonephritis, minimal right pleural effusion. CT scan abdomen- suggestive of acute pyelonephritis. She developed AKI and nephrology consultation was taken, she was managed conservatively with renal supportive medication, IV antibiotic- levofloxacin, insulin, IV fluids, antiemetic, pantoprazole, 2 units of PRBC transfusion. On discharge s. Creatinine was 2.32 mg/dl, she improved and discharged on oral medications including iron supplementation.

#### Case 2-

62 years old male patient with a history of diabetes mellitus, hypertension was referred to our emergency department following 7 days of left loin pain, fever, dysuria, and frequency. Physical examination was a distended abdomen with hypoactive bowel sounds, tenderness was present in left loin, costovertebral angle tenderness+, BP- 130/80 mmHg. Investigations- RBS- 281, s. creatinine- 8.05, s. Na- 121.2, s. k- 4.87, TC-36000, HbA1c- 13.38, s. amylase- 37u/l, s. lipase- 196 u/l, Urine R/E- pus cells 5-8/hpf, glucose-4+, blood- 2+, urine and blood C/S- no growth. Sputum C/S- candida profuse growth.

Chest X-Ray- congested both lung fields and emphysematous right upper and mid lung zone, CT (KUB) - bilateral enlarged kidney with the globular contour (L>R), perinephric fat stranding and adjacent lymphadenopathy, thickness of pararenal fascia suggestive of pyelonephritis with significant disease activity on left side. His abdominal distension improved after passage of stools and flatus following enema, He was managed over 2 cycles of haemodialysis for AKI, IV antibiotics- levofloxacin, antifungal- fluconazole, insulin, IV fluids, pantoprazole, antiemetic and other supportive care. On discharge s. creatinine was 2.83 mg/dl, he improved and discharged on oral medications.

### DISCUSSION-

Diagnosing and managing acute pyelonephritis is not always straightforward. Wide variation exists in the clinical presentation, severity, and disposition of the disease. Presentation of acute pyelonephritis as an acute abdomen is unusual and needs a high index of suspicion and clinical expertise to diagnose from the wide list of differentials. Both cases had atypical features and on top of that developed AKI. Raised creatinine level finally revealed the cause of acute abdomen as acute pyelonephritis.

Rarely, acute pyelonephritis can cause AKI in children, healthy adults, and pregnant women.<sup>1</sup> When this occurs, characteristically, recovery proceeds more slowly than with AKI from other causes. In most instances, other factors are thought to contribute to the AKI. In both the above noted diabetic cases, AKI in the absence of hypotension, nephrotoxic agents, non-steroidal analgesics, immunosuppression, urinary tract obstruction, or other structural anomalies is likely the direct consequence of pyelonephritis. Acute pyelonephritis is an unusual and rarely reported cause of AKI.<sup>2</sup> One such case was reported earlier<sup>3</sup>, but initial presentation as acute abdomen makes our case report unique. Both the cases responded well to renal supportive care.

### CONCLUSION-

Acute pyelonephritis is complex, and there is no consistent set of signs and symptoms that are both sensitive and specific for the diagnosis particularly in diabetic patients as seen in these two cases under report. Therefore, a high index of suspicion is essential to come to early diagnosis and treatment in atypical cases of acute pyelonephritis.

### CONFLICT OF INTEREST-None.

### REFERENCES-

- Basile DP, Anderson MD, Sutton TA. Pathophysiology of Acute Kidney Injury. *Comprehensive Physiology*. 2012; 2(2):1303-1353.
- Molitoris BA, Finn WF. Acute renal failure: a companion to Brenner and Rector's The kidney. Philadelphia: Saunders; 2001. p. xiv, 535 p., 538 p. of plates.
- Husain S, Alroumoh M, Mohan P, et al. *Int Urol Nephrol* (2011) 43: 925.