

### A Diabetic Gentleman with Fever and Abdominal pain

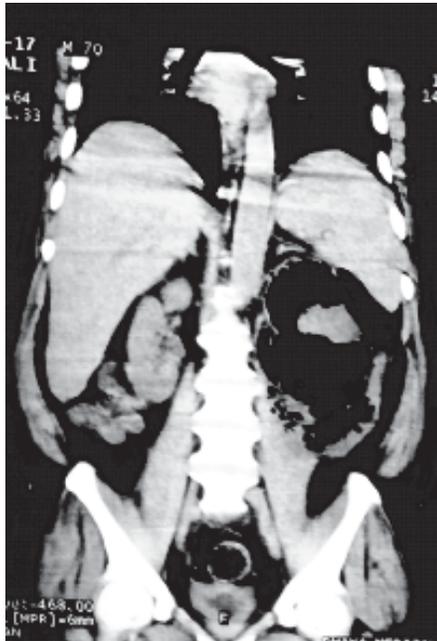
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A 65-year-old male admitted in Dhaka Medical College Hospital with the complains of pain in left flanks for 5 days and fever for 3 days. Pain was constant, severe, cramping in nature associated with nausea and vomiting. He also complained of dysuria for last 8 days. Fever was intermittent in nature comes with chills and rigor subsided with sweating. Maximum rise of temperature was 102°F (38.9°C). Following 4<sup>th</sup> day of admission he developed soft tissue swelling over his left flanks. He was diabetic for last 5 years was on oral

hypoglycemic drugs but stopped drugs for last 6 months.

The vital signs showed blood pressure of 100/60 mm Hg at presentation, pulse rate of 106 beats/min, respiratory rate of 25 breaths/min, breathing was uraemic and temperature of 103°F (39.4°C) was recorded. On examination, the patient was conscious, but mildly disoriented, and there was tenderness in the left renal angle, soft tissue pitting oedema localized to left flanks, but all the other systems were normal.



*CT SCAN abdomen : Emphysematous pyelonephritis ( EPN)- class IIIa with left psoas muscle inflammatory changes.*

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**Investigations are given below**


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1. CBC	
Hb	11.4gm/dl
WBC	25,000/cmm
Neutrophils	87%
Platelete count	24,000/cmm
ESR	32mm in 1 <sup>st</sup> hour
2. Urine RME	
Sugar	+++
Albumin	+
Pus cell	plenty
RBC	plenty
3. Urine C/S- growth of klebsiella	
4. Blood C/ S – No growth	
4.S. Cratinine	4.09 mg/dl
5. FDP	20.17Ug/ml
6. D-dimer	>4.0Ug/ml
7. Blood sugar Fasting- 10mmol/L	2 hour after breakfast- 16 mmol/L
8. Plain Xray KUB region- Gas shadow present in left renal area.	
9. USG Whole abdomen: Huge intra-abdominal gas with non-visualized left kidney.	

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The patient was diagnosed as a case of emphysematous pyelonephritis with Septicemia with acute renal failure. His blood sugar controlled with insulin. Antibiotic inj. Meropenem and inj. Ceftazidime started according to culture of urine (klebsiella). He responded well with medical management and become afebrile in 1<sup>st</sup> week. His WBC count reduced to 11,100/cmm after 3 weeks and renal function improved to 1.2mg/dl after 2 weeks. Due to absence of any complications or features of sepsis after 4 weeks of injectable antibiotics the patient was discharged on oral antibiotics for a further 2 weeks.

**Discussion:**

Emphysematous pyelonephritis is a well-known condition which mainly affects the diabetic population (90%) and seen in patients with chronic diabetes characterized by formation of gas in renal parenchyma. It has a strong female preponderance with female to-male ratio of 5:1, mean age of occurrence is around the fifth decade, and most often it involves left kidney in

almost 60% of cases <sup>1</sup>. Patient usually present with abdominal pain, fever and tenderness in renal angle.

TABLE- I. Emphysematous pyelonephritis (EPN) classification by Huang and Tseng <sup>2</sup>

**Class Description**

Class I :Gas in collecting system only

Class II: Parenchymal gas only

Class IIIa: Extension of gas into perinephric space

Class IIIb: Extension of gas into pararenal space

Class IV: EPN in solitary kidney, or bilateral disease

Management is now based on CT scan based classification by Huang and Tseng. Class I and II EPN can be managed by medical therapy alone or combined with percutaneous drainage, have a success rate of 66%, while the mortality rate for treatment with antibiotics alone ranges from 40% to 90%. For classes III and IV, antibiotic therapy and PCD may be attempted but ultimately nephrectomy may be necessary.

A recent case series describes eight cases of EPN with medical management alone. Of these eight cases, four were class IV EPN, five cases required haemodialysis, whereas four needed percutaneous drainage. The authors successfully used injections of imipenem for 10 days in five patients, cefoperazone + sulbactam for 14 days in two patients, and piperacillin + tazobactam for 14 days in one patient.<sup>3</sup> Recent update recommended more conservative management, there are case reports of successful treatment with percutaneous drainage and antibiotics<sup>3-5</sup>.

Our patient recovered well with conservative management without percutaneous drainage and surgery. Conservative management could be done with close monitoring and follow up the patient. But nephrectomy is the best way to treat advanced disease.

#### References:

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