

# EMPHYSEMATOUS PYELONEPHRITIS PRESENTING WITH NECROTISING FASCITIS OF THIGH- UNDERSTANDING OF PATHOLOGICAL ANATOMY , IMPLICATION & TREATMENT

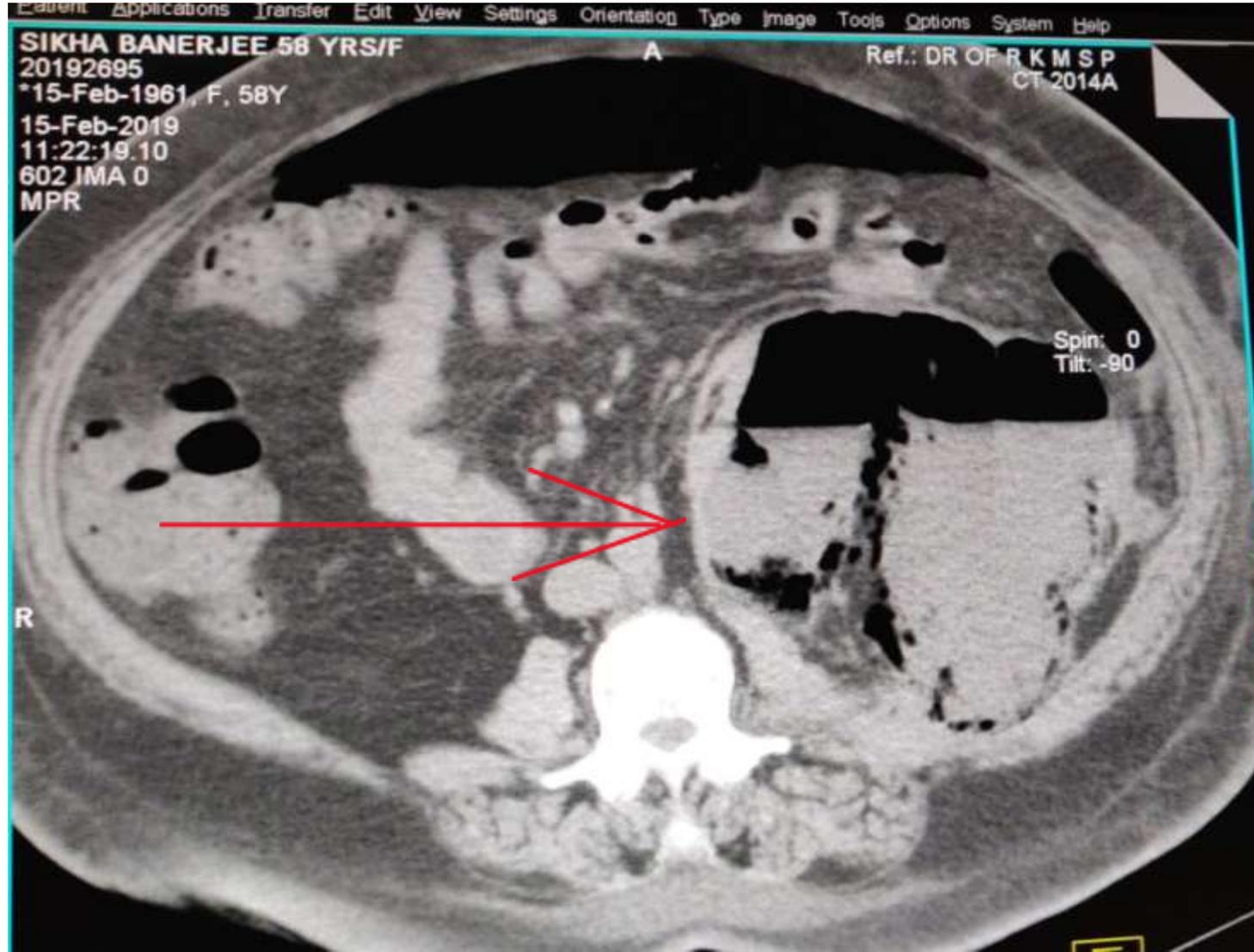
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# CASE PRESENTATION

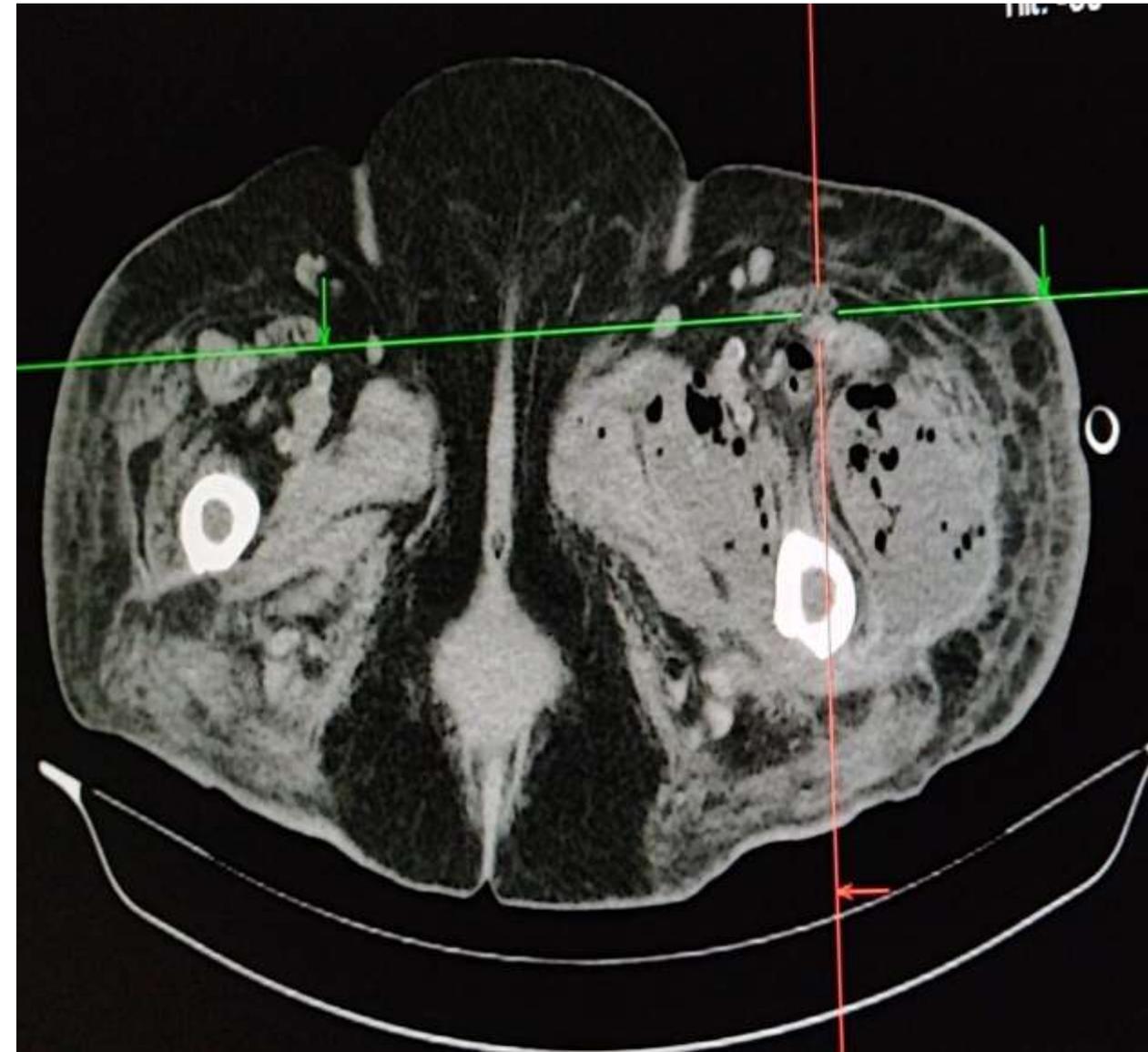
- A 58 year old obese female patient with uncontrolled diabetic presented with complaints of pain in left flank pain, fever with chills, generalised weakness and left lower Limb oedema , pain and inability to walk for two weeks.
- On physical examination she had left flank tenderness with left thigh pitting oedema and she was completely bed ridden.
- Patient was admitted in medicine ward and on evaluation raised total count (19000) , CRP (158) ,Cr (2.6) , HbA1c (13) and urine showed plenty pus cell , sugar +++ with growth of E.coli sensitive to amikacin, cefoperazone, meropenam and colistin.
- NCCT KUB showed enlarged left kidney with destroyed parenchyma with collection and gas fluid level within it suggestive of emphysematous pyelonephritis.

# NCCT KUB SHOWING GAS IN LEFT RENAL PARENCHYMA AND PERIRENAL TISSUE



- She was put on higher dose of insulin with antibiotics ; fever was subsided and she managed with left side percutaneous drainage of pus and urine output through PCN was 500-700ml/day.
- Still her left lower limb oedema was not subsided so she investigated with CT of thigh which showed gas in anterior and medial compartment.
- She underwent left thigh fasciotomy (500 ml pus drained ) with left DJ stenting.
- Subsequently patient underwent removal of left PCN after gradual decreased urine output through it and secondary suturing of left thigh wound.
- Patient discharge with left DJ stent in situ and fully mobile state with Creatinine 1.2mg/dl.
- On follow up CT scan , no contrast uptake in left kidney and DTPA showed non functioning left kidney.

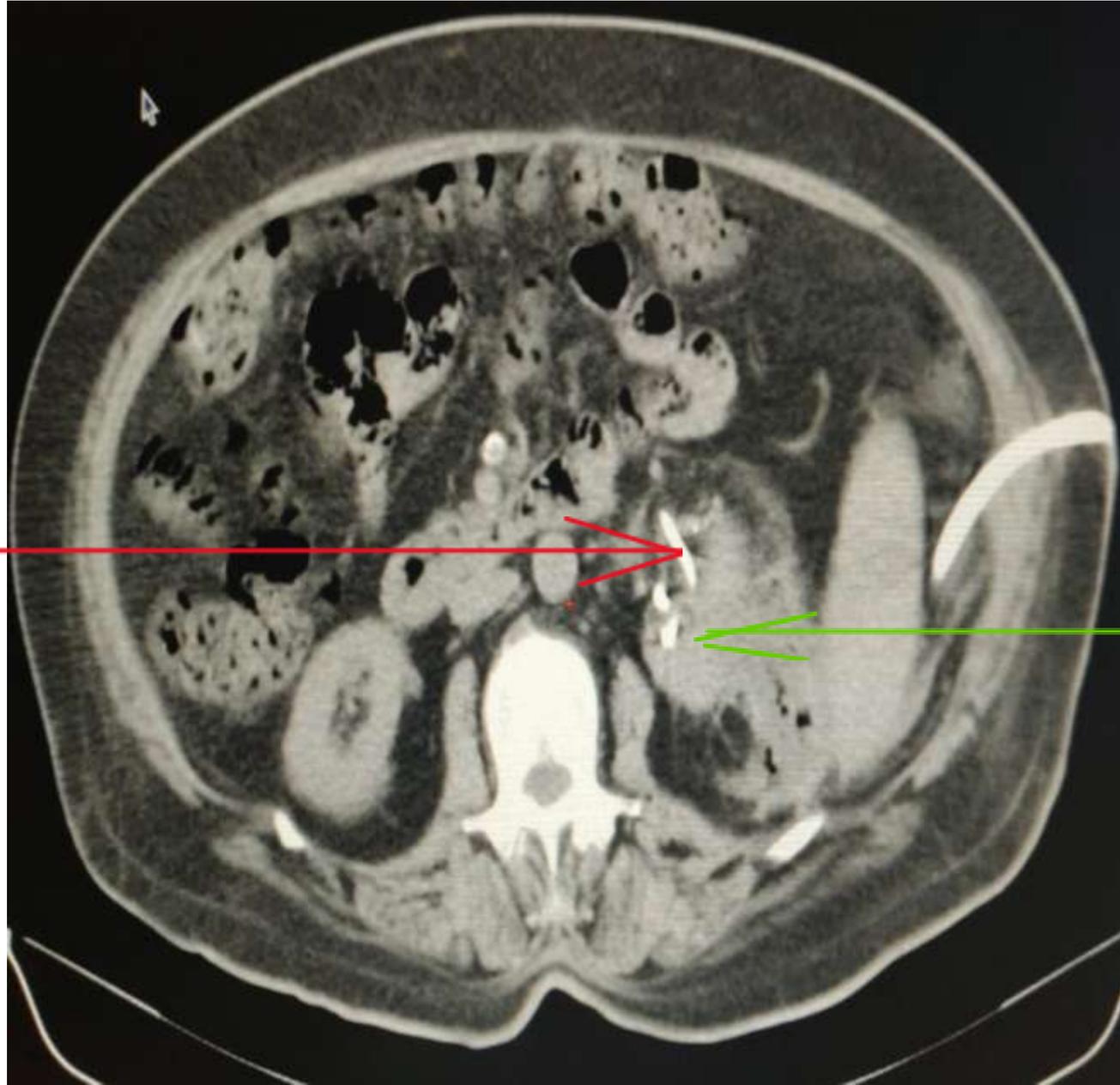
# CT SCAN SHOWING GAS EXTENSION TO IPSI LATERAL THIGH



**INTRA OPERATIVE PICTURE SHOWING PUS  
DRAINAGE FROM THIGH**



*POST OP CT IMAGE*



# POST OPERATIVE WOUND IMAGES



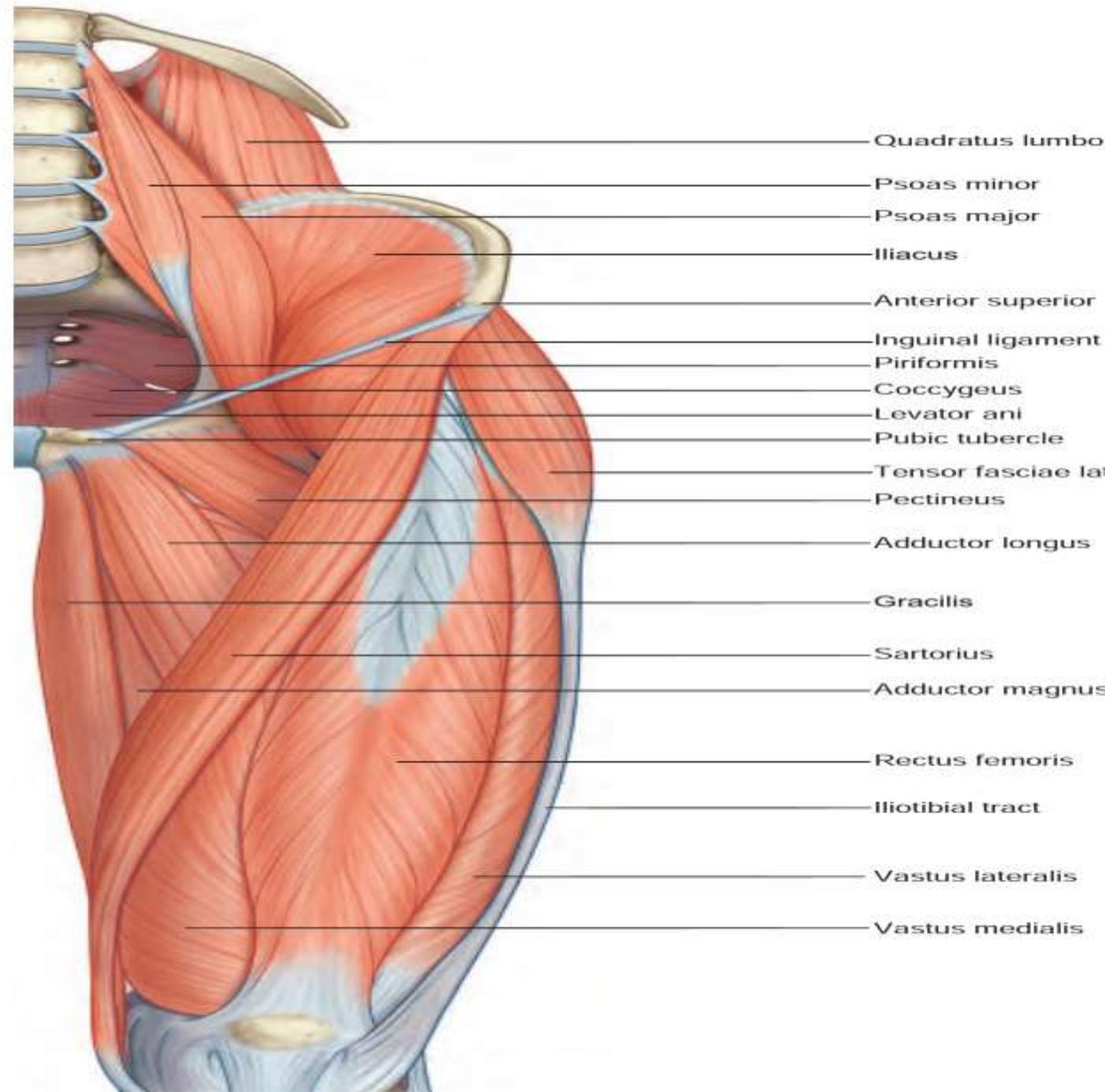
# ***DISCUSSION***

- Emphysematous pyelonephritis is a life-threatening severe form of pyelonephritis usually occurring in patients with diabetes mellitus with or without obstructive uropathy in whom there is necrotizing infection leading to gas production of unclear mechanism involving the renal parenchyma and the collecting system.
- The overall mortality rate has been reported to be between 19% and 43% .
- Diabetes mellitus is also a predisposing factor of necrotizing fasciitis which is characterized by necrosis of fascia and fat.

## CT classification of emphysematous pyelonephritis (EPN) by HUANG & TSENG,

- Class 1: gas in the collecting system only
- Class 2: gas in the renal parenchyma without extension to extrarenal space
- Class 3a: extension of gas or abscess to the perinephric space
- Class 3b: extension of gas or abscess to the paranephric space
- Class 4: bilateral EPN or solitary kidney EPN.

Extension of infection occur through spreading of Perinephric space>>Paranephric space>>Anterior to Psoas muscle, leading behind inguinal ligament to thigh >> Deep to fascia lata.



- Emphysematous pyelonephritis and necrotizing fasciitis rarely present simultaneously , both are life threatening condition which required early medical and surgical intervention.
- So far three cases had reported in literature presenting similarly.
- CT scan establishes the diagnosis of necrotizing fasciitis and differentiates gas from fluid, soft tissues, and calcification and also helps in detecting disease extent and severity.
- Early diagnosis and treatment is essential to reduce mortality.

# *CONCLUSION*

- Emphysematous pyelonephritis is a surgical emergency. CT is diagnostic of both necrotizing fasciitis and emphysematous pyelonephritis by detecting the presence of air in fascial planes and subcutaneous fat and presence of air in renal parenchyma and/or pelvicalyceal system, respectively.
- Most patients are septic, and fluid resuscitation and broad-spectrum antimicrobial therapy are essential. If the kidney is functioning, medical therapy can be considered.
- Nephrectomy is recommended for patients who do not improve after a few days of therapy.
- If a kidney is obstructed, catheter drainage must be instituted. If the patient's condition improves, nephrectomy may be deferred pending a complete urologic evaluation.

# **REFERENCES**

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***THANK YOU***

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