A RARE CASE OF EMPHYSEMATOUS PYELONEPHRITIS IN RENAL ALLOGRAFT

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ABSTRACT

Complications in Renal allograft are a well known fact, but Emphysematous Pyelonephritis is a rare complication. We hereby report a case of 26 year old male patient who underwent renal transplant and presented with this rare complication. Only few cases with this complication have been reported in literature so far.[1]

Keywords: Renal Transplant, Emphysematous Pyelonephritis, Citrobacter freundii

Introduction

Kidney transplant is the organ transplant of a kidney into patient with end stage renal disease. Common diseases leading to end stage renal disease are diabetes mellitus, infections, polycystic kidney disease, malignant hypertension, inborn errors of metabolism & auto immune conditions.

Complications after renal transplant include- transplant rejection, sepsis, infections, metabolic imbalance, lymphoproliferative disorders. Acute rejection[2] is the major immunologic risk factor for developing allograft dysfunction, which may be due to infiltration of allograft by lymphocytes & antibody mediated rejection. Common organisms causing acute rejection include Staphylococcus, Enterococcous & gram negative enteric organisms.[3]

Case Report

A 26 yr old male patient , a known case of chronic glomerulonehritis with end stage renal failure on haemodialysis had following laboratory parameters; VDRL, HIV, CMV, HBsAg, HCV negative, Pre transplant serum BUN- 59.7 mg/dL, serum creatinine-7.36 mg/dl, FBS-72mg/dl, PPBS-115mg/dl, urine routine-normal, Hb-9.0 gm%, TLC- 7800 cells/mm^3, Platelets-3.13 lakh per µl

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Patient underwent renal transplant on 08/09/10, the donor was patients wife. Surgery went uneventful and the patient was afebrile with good urinary output. On 8th post operative day, patient had a spike of fever (100°F), following which patient was referred to the Department of Radiodiagnosis to look for any local or intra-abdominal collection. On ultrasound examination no obvious collection was noted. Erect abdomen radiograph was inconclusive. (Fig.1)

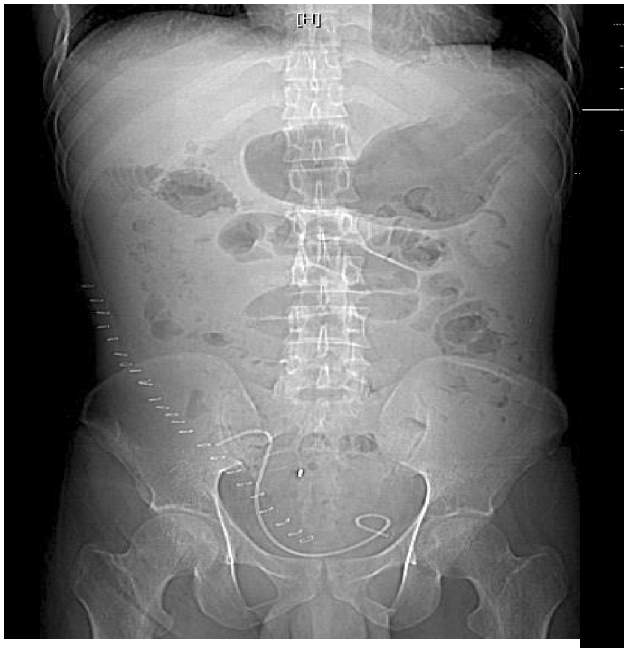

Figure 1: An erect x-ray abdomen showing surgical clips in right lower abdomen with no evidence of any gas shadow in right lower quadrant.

On 16th post operative day his serum BUN was 92.7 mg/dl and serum Creatinine was 7.7 mg/dl. Further on colour Doppler imaging transplant kidney showed minimal vascularity along with multiple air specks within the kidney (Fig.2) suggesting possibility of emphysematous pyelonephritis. The findings were confirmed on NCCT KUB. (Fig.3)

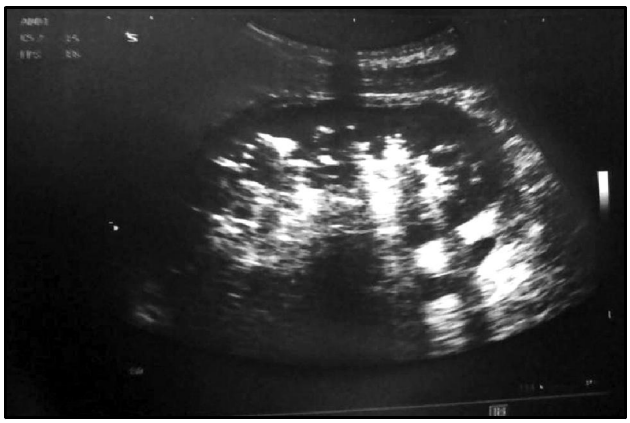

Figure 2: Ultrasound image of the transplant kidney showing air specks within it.

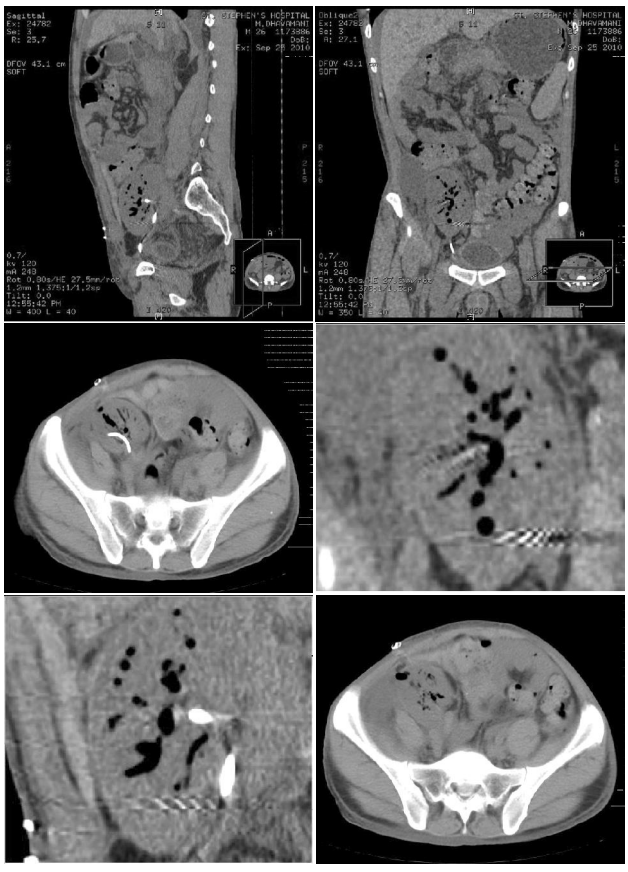

Figure 3: CT axial and coronal reformatted images showing multiple air pockets within the transplanted kidney with drain insitu.

Patient underwent a urine culture examination. Citrobacter freudnii complex was reported in the report which was resistant to all antibiotics except Gatifloxacin. Patient was referred for renal function scan (DTPA) which showed non functioning renal parenchyma. (Fig.4)

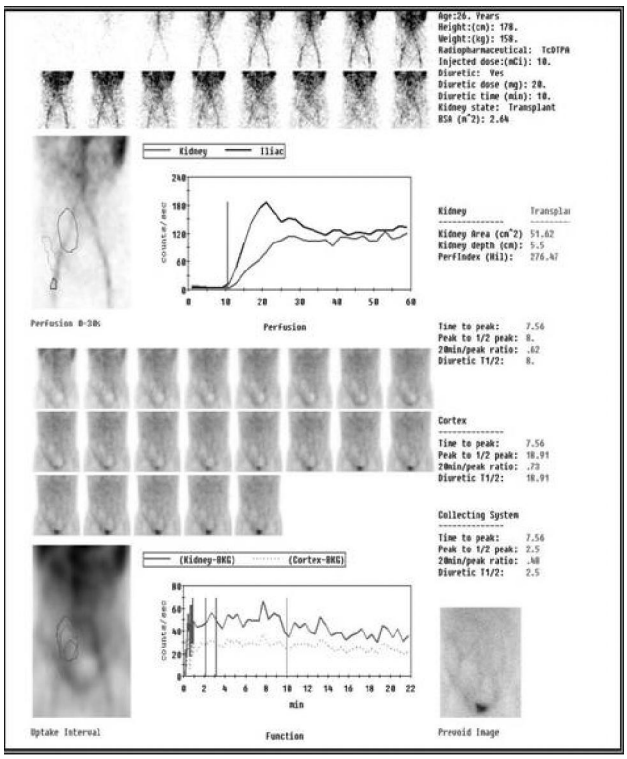

Figure 4: DTPA scan of the transplanted kidney showing nonfuctioning parenchyma.

Later USG guided renal biopsy was done from upper pole of allograft & sample was sent for histopathology & culture sensitivity which showed Tubular necrosis with Infarction.(Fig.5)

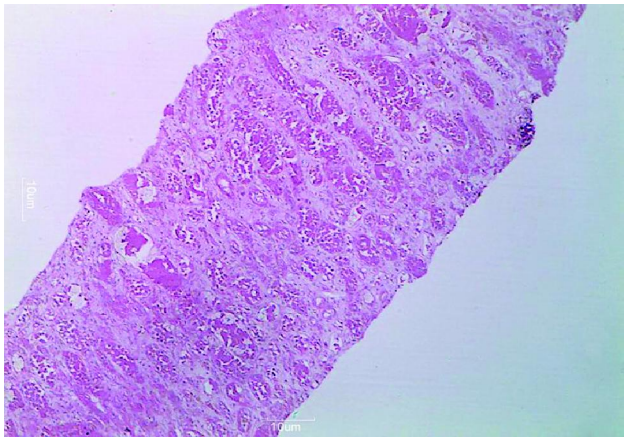

Figure 5: Sections showing linear fragments of renal tissue with no viable glomeruli with areas of infarction and tubular necrosis.

A review ultrasound examination was done on the 20th POD which showed focal areas of necrosis in upper pole with perinephric collection.

Discussion

We hereby report a rare case of Emphysematous pyelonephritis in a post transplant kidney due to infection with Citrobacter freudnii complex which is a distinct group of gram-negative bacilli belonging to the family *Enterobacteriaceae.* They are found in soil, water, food, and the intestinal tracts of animals and humans. *Citrobacter* species were initially considered as harmless contaminants but are now being increasingly recognized as human pathogens.[4]

References

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