Unusual Presentation of Acute Bacterial Focal Nephronia

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Bacterial nephronia - a severe form of nephritis is a rare, acute, focal or multifocal infection of the renal parenchyma, which is sometimes referred to as "preabscess state[1]'. We present a case with unusual symptomatology at onset, while the radiological features were suggestive of a mass lesion.

Case Report

A. R., 24 years old male presented with left lumbar pain, hematuria and fever of 15 days duration with intermittent vomiting. He went into acute urinary retention for which a Foley's catheter was retained for 10 days. An intervenous urography was performed and it showed bilaterally normal functioning kidneys with amass lesions on the left which was displacing the pelvicalyceal system medially.

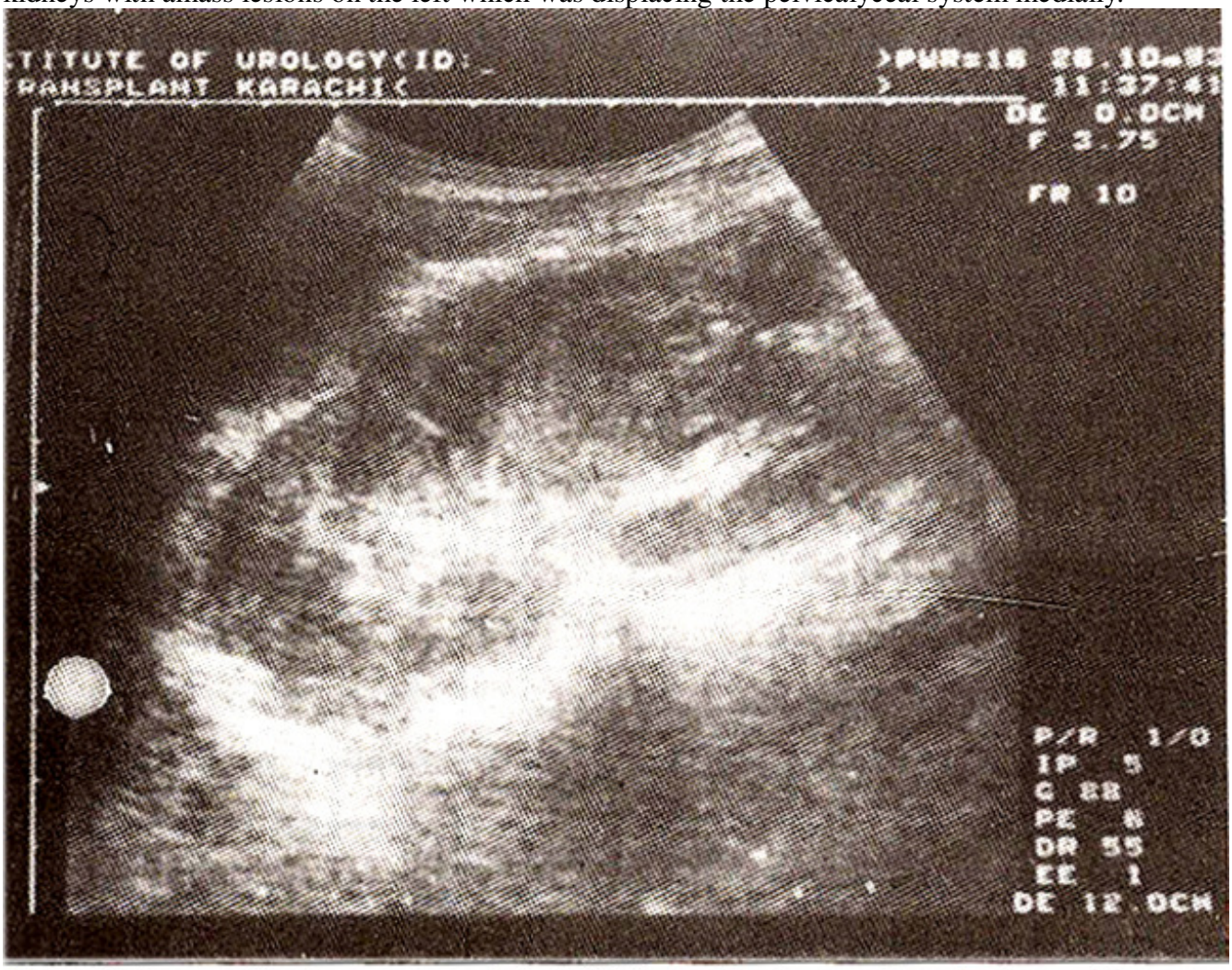

Figure 1. Longitudinal sonogram of the left kidney showing an altered echogenicity mass alongwith the outer margin causing displacement of the central echogenic complex

Ultrasound (Figure 1) performed later on showed a solid mass measuring 34x60 mm with heterogenous

echotexture at the mid outer portion. A pre and post contrast (80 ml 76% urograffin) CT scan (GE-9800) showed

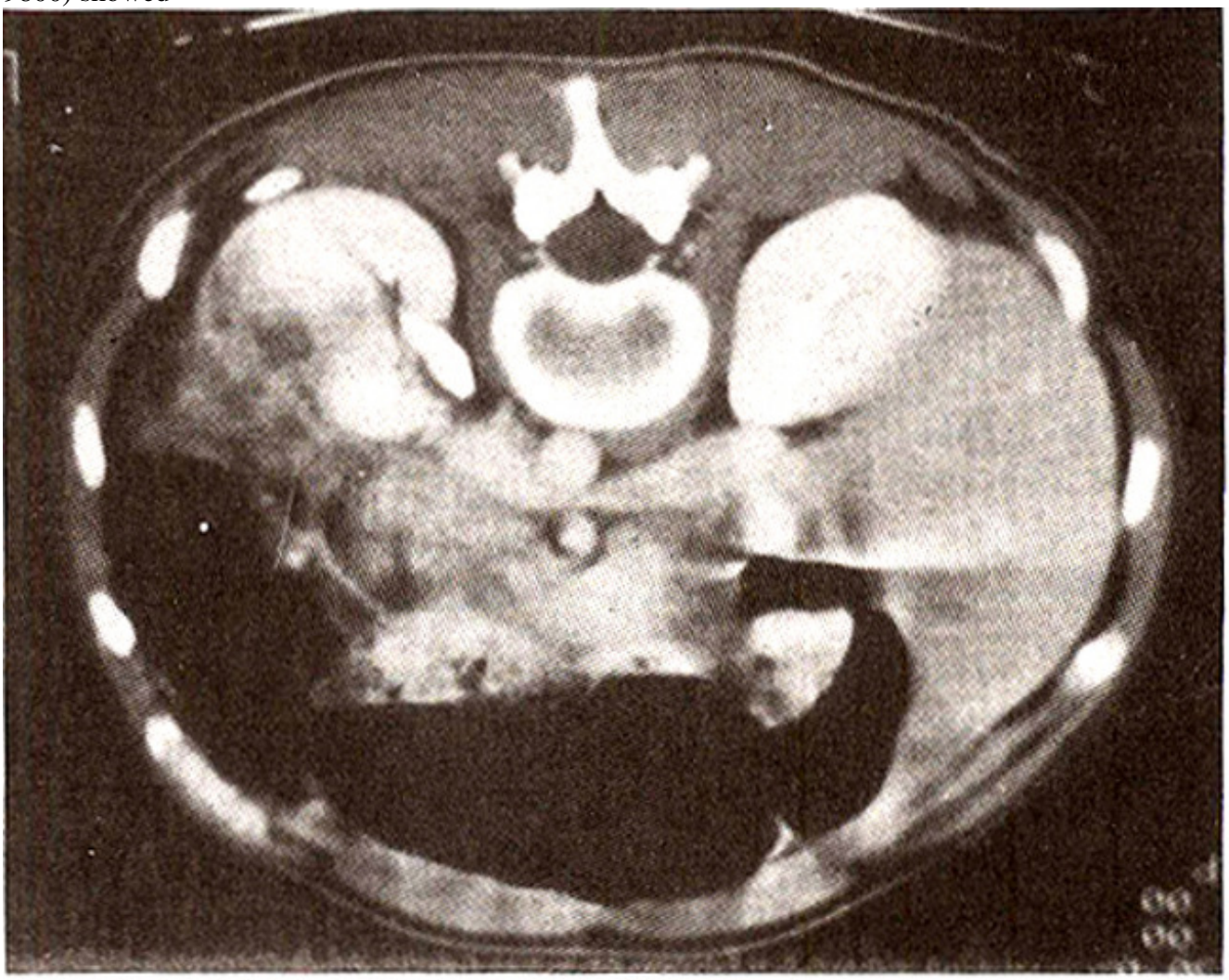

Figure 2. Post contrast enhanced axial section through the kidneys showing a non-enhancing mass along the anterolateral aspect of left kidney causing displacement of the collecting system. There is also peri-renal extension.

(Figure 2) a non-enhancing mass lesion in the left kidney causing displacement of calyceal system. There was some extension of inflammatory process outside the kidney with thickening of lieno-renal ligament. The abscess was aspirated under local anaesthesia with ultrasound guidance, pus obtained grew staphylococcus aureus sensitive to of laxacin. With continuous antibiotic (400 mg bd) therapy serial ultrasound confirmed the clinical impression of resolving abscess. Follow up CT scan after 14 weeks (Figure 3)

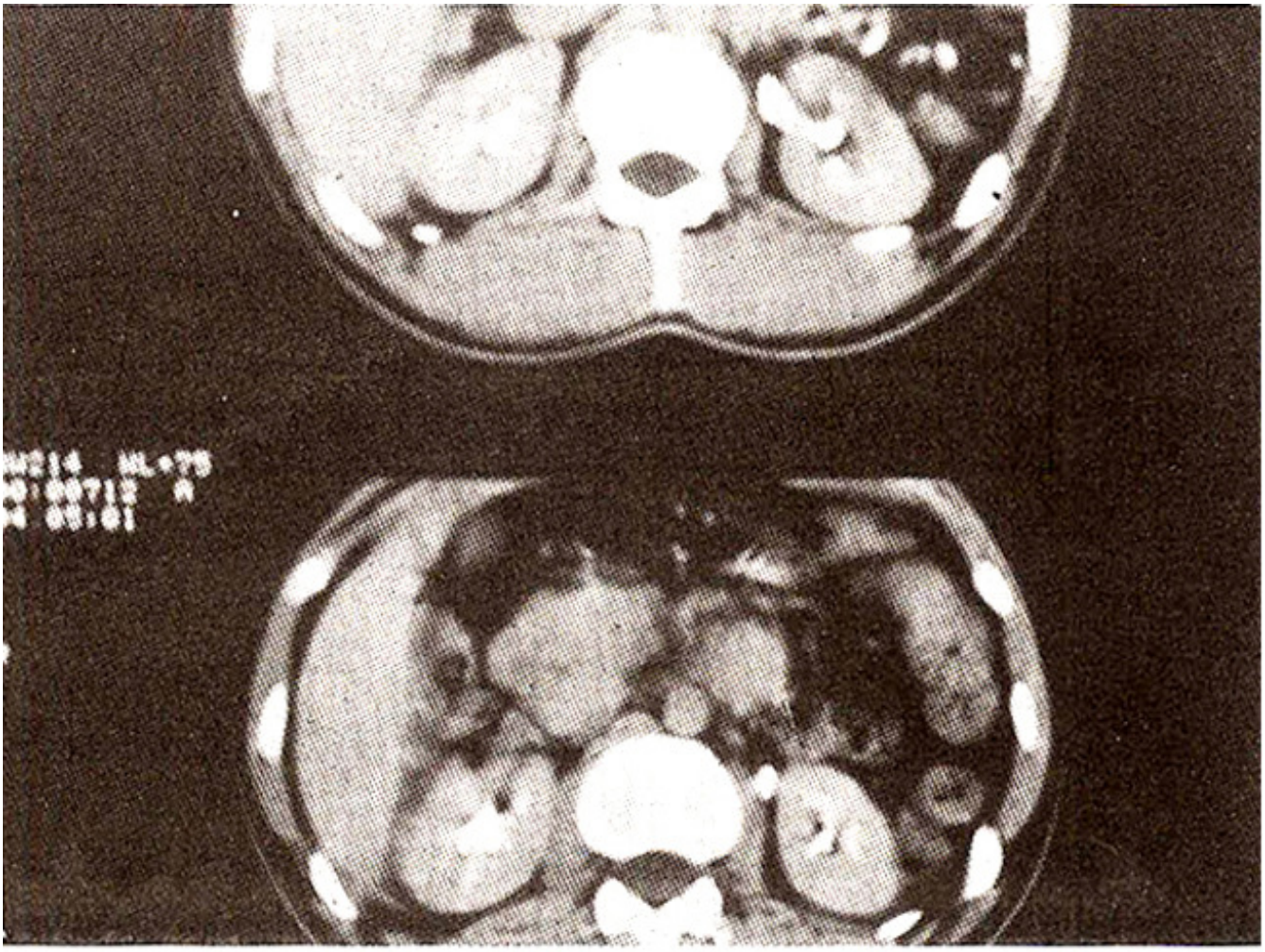

Figure 3. Follow -up CT Scan showing post-contrast enhanced axial section with complete resolution of the abscess.

showed complete resolution of the abscess.

Discussion

Though upper urinary tract infections are common, focal bacterial nephronia is an unusual clinical occurrence2. Usually it is focal though cases of migratory nephronia have also been described[3]. Though both focal and multifocal nephronia can occur in the general population, they are more common in diabetics (50% of the patients are diabetic)[4]. Besides diabetics, association with sickle cell disease, neuropathic bladder, outflow tract obstruction and previous episodes of pyelonephritis has been described[4]. The onset of bacterial nephromais usually abrupt. Fever (100°F +), chills, costovertebral angle pain and symptoms of cystitis is the classical presentation. It is more common in children with reflux. The mechanism is ascending infection from the lower urinary tract and there is localized segment of edematous infected kidney with heavy leukocyte infiltrate extending from papila to capsule[5]. The srze varies 2 to 5 cms. The presentation is similar to those of acute pyelonephritis but is usually more severe. The causative organisms include E. coli, kiebsiella, proteus and staphylococcus[4,6]. The diagnosis is made on radiologic findings. Urography is often misleading, findings are suggestive of mass or abscess. On ultrasound there is evidence of solid mass which is

typically poorly marginated and relatively sonolucent[7]. The lesion often shows low amplitude echoes that disrupt the corticomedullary differentiation. Distal acoustic enhancement is not present and there is difficulty in visualization if CT scanning is not done with contrast enhancement. On CT the usual finding is wedge shaped areas of decreased enhancement without definite wall and absence of liquefaction[8,9]. Sometime on CT scan there are areas of high attenuation indicating haemorrhage. Gallium 67 scanning shows areas of uptake that is larger than the previously described mass[10]. Treatment includes hydration, parenteral antibiotics for one week followed by oral for another week[9]. Follow-up shows resolution of wedge shaped zones of diminished attentuation. It ranges from 6 weeks[5,7] to 4 years[6,8]. We followed up our case for 12 weeks and found that after an initial acute illness the patient recovered clinically whereas sonographic recovery took over 10 weeks to show signs of recovery. Long terni follow-up studies performed in a few patients with multifocal disease have demonstrated a decrease in renal size and focal calyceal deformities suggestive of necrosis[9]. Failure of response should raise suspicion and alternate diagnosis be suspected including obstructive uropathy, pen-renal abscess, renal carcinoma or acute renal vein thrombosis. Long term follow-up shows decreased renal size, focal calyceal deformities suggestive of papillary necrosis.

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