Diagnostic Images

Emphysematous pyelonephritis

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The patient

A 50 year old diabetic woman was admitted with left-sided abdominal pain and fever. She had a temperature of 40°C, pulse pressure of 60 mmHg and a ballotable non-tender lump in the left loin.

Investigations

Plain abdominal X-Ray, erect lateral abdominal X-ray and computerized tomography (CT) of the abdomen.

Discussion

Emphysematous pyelonephritis is a necrotizing renal infection with intrarenal and perirenal gas production. This is primarily encountered in diabetic patients. Severe necrotizing infection and impaired

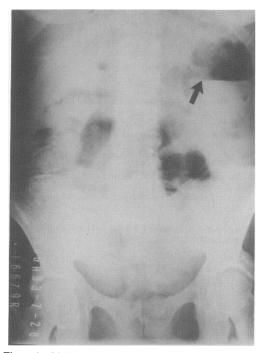


Figure 1 Plain abdominal X-Ray show large left kidney with air fluid level.

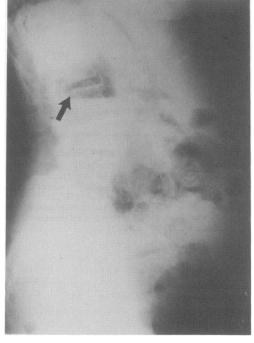


Figure 2 Erect lateral abdominal X-ray shows air shadow, which is posterior to the bowel shadow.

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blood supply may allow organisms capable of producing CO₂ to use necrotic tissue as substrate for gas generation.² Pathognomonic finding is the presence of air in the renal parenchyma. Abdominal films with CT or intravenous pyelogram are adequate in establishing the diagnosis.³ Treatment of choice is nephrectomy, which our patient had with successful outcome. Culture of the pus revealed coliform organisms. Histology revealed abscess formation, end arteritis obliterans, mural thrombi and infarction. Although diagnosis of xanthogranulomatous pyelonephritis was considered preoperatively, the absence of granulomas and the collection of lipid-filled macrophages (foam cells) on histology did not support this diagnosis.⁴

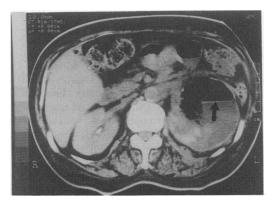


Figure 3 CT scan of the abdomen confirms enlarged left kidney with gas inside the renal capsule.

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