# Renal abscess: complication of ethanol renal devitalization for hypertension in chronic renal failure

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Therapeutic renal artery embolization has been widely used in the treatment of tumours as well as other lesions of the kidney.[1-3] Recently it has been advocated for the treatment of poorly controlled renin-dependent hypertension in those not fit for nephrectomy.[4-7] In general it is thought to be a low-risk procedure,[1-3] particularly with the recent use of absolute ethanol as the embolic agent.

## Case report

A 32-year-old woman presented 5 months after the birth of her second child with headache, paresthesias, abdominal pain and jaundice. Her blood pressure was 200/130 mm Hg. She was uremic (serum creatinine level 1500 μmol/L) and anuric, had microangiopathic hemolytic anemia and was considered to have the hemolytic–uremic syndrome.

She was treated with acetylsalicylic acid and dipyridamole, plasmapheresis with plasma replacement, antihypertensive drugs and dialysis (initially hemodialysis and subsequently peritoneal dialysis). However, she continued to be markedly hypertensive, the diastolic blood pressure ranging from 110 to 120 mm Hg. She was malnourished and unwell and was considered to be at high surgical risk.

Four months after admission the patient underwent ethanol embolization of both kidneys, the procedures being done 4 days apart. After initial fever and pain her condition improved, and the blood pressure returned to normal without antihypertensive drugs. However, persistent low-grade fever, malaise and anorexia developed. There were no specific urinary symptoms, and she remained anuric. Four months after the embolization a gallium scan showed increased uptake in the area of the left kidney, and computed tomography confirmed the presence of a renal abscess (Fig. 1).

The kidney was removed. It contained pus, from which *Klebsiella oxytoca*, *Streptococcus faecalis*, *Staphylococcus aureus* and an anaerobic gram-positive coccus were cultured. After a stormy postoperative course the patient's condition improved. Subsequently a living donor kidney was successfully transplanted.

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## Comments

Renal arterial embolism is well accepted in the preoperative treatment and palliation of renal cell carcinoma. It has also been used to treat arteriovenous fistulas, aneurysms, severe proteinuria and hematuria of various causes. More recently its use has been advocated in poor surgical candidates with renin-dependent hypertension who either have a single arterial lesion or are receiving dialysis and ideally should have a transplant.[4]

The embolic agents have included blood clot, lyophilized dura mater, particulate polyvinyl alcohol foam, magnetically guided ferromagnetic particles, steel coils, Gelfoam and cyanoacrylate polymer. All have been criticized because of incomplete renal infarction and the danger of accidental embolization. Ethanol has recently become favoured. Pain, fever and leukocytosis have been common for up to 10 days after ethanol embolization,[8,9] but septic complications have rarely been reported.[1-3] However, all the large series have dealt only with tumour embolization, either preoperatively or in the palliation of advanced disease.

Our case demonstrates that therapeutic renal

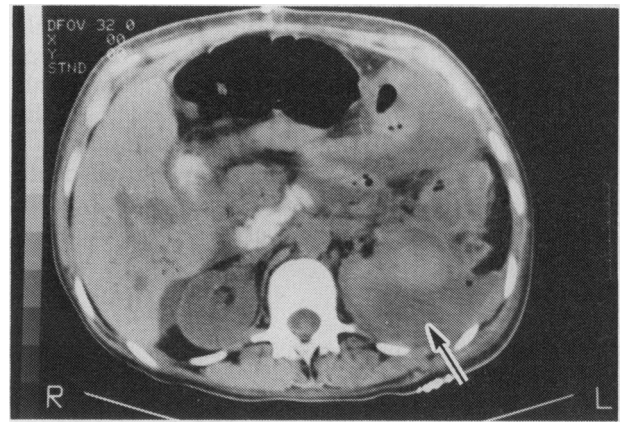


**Fig. 1 — Computed tomography scan without contrast enhancement, through left renal hilus: outline of left kidney is lost within fluid collection that fills perirenal and posterior pararenal spaces; gas bubble (arrow) suggestive of abscess.**

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infarction does entail some risk of infection. The source of infection in our patient is impossible to identify, though the organisms cultured suggest the gut. Bacteremia may be frequent after this procedure, especially in ill patients subjected to multiple invasive procedures, and the infarcted kidney may provide a culture medium if not removed. This may be a particular problem in patients with an immune system that is compromised by drugs, renal failure, other systemic disease or malnutrition. Hence, this procedure should be undertaken with caution if subsequent nephrectomy is not contemplated, and one should be alert for signs of infectious complications in such patients.

## References


1. Wallace S, Chuang VP, Swanson D et al: Embolization of renal carcinoma. Experience with 100 patients. *Radiology* 1981; 138: 563-570
2. Feldman L, Greenfield AJ, Waltman AC: Transcatheter vessel occlusion: arteriographic results versus clinical success. *Radiology* 1983; 147: 1-5
3. Lammer J, Justich E, Schreyer H et al: Complications of renal tumour embolization. *Cardiovasc Intervent Radiol* 1985; 8: 31-35
4. Reuter SR, Pomeroy PR, Chuang VP et al: Embolic control of hypertension caused by segmental renal artery stenosis. *AJR* 1976; 127: 389-392
5. Nanny GS, Hawkins IF, Orak JK: Control of hypertension by ethanol renal ablation. *Radiology* 1983; 148: 51-54
6. Fletcher EW, Thompson JF, Chalmers DH et al: Embolization of host kidneys for the control of hypertension after renal transplantation. *Br J Radiol* 1984; 57: 279-284
7. Denny DF, Perlmutt LM, Bettmann MA: Percutaneous recanalization of an occluded renal artery and delayed ethanol ablation of the kidney resulting in control of hypertension. *Radiology* 1984; 151: 381-382
8. Rosenkrantz H, Sands JP, Buchta KS et al: Renal devitalization using 95 per cent ethyl alcohol. *J Urol* 1982; 127: 1275-1277
9. Jitsukawa S, Tachibana M, Deguchi N: Renal devitalization with ethanol injection in management of patients with advanced hypernephroma. *Urology* 1984; 23: 87-92


# Unexpected death associated with unusual thoracic sarcoidosis


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Cardiac involvement is the most common cause of death in patients with sarcoidosis, although it is recognized before death in only about 5% of patients.[1,2] Since sarcoidosis and its usual presentations are quite common, a young person who presents with the typical radiographic manifestations of pulmonary sarcoidosis and clinical evidence of cardiac dysfunction poses little diagnostic problem. However, when cardiac symptoms or signs are absent and the chest radiographic findings are unusual for pulmonary sarcoidosis, the diagnosis of sarcoid heart disease is seldom made during life.[3] We report a case of unexpected death as the presenting manifestation of unusual pulmonary sarcoidosis in a young adult.

## Case report

A 41-year-old, nonsmoking, previously healthy and presently asymptomatic male lawyer was referred because of abnormal findings on a routine chest x-ray film. His past medical and occupational histories were unrevealing, and the results of physical examination, pulmonary function tests and electrocardiography were normal. Chest radiography showed an enlarged cardiac silhouette and extensive parenchymal changes mimicking an "alveolar" pattern in the right lung (Fig. 1, top panel); routine chest radiography 5 years earlier had shown no abnormalities (Fig. 1, bottom panel).

Atypical pulmonary sarcoidosis was suspected, and the patient was scheduled for fibreoptic bronchoscopy and transbronchial lung biopsy within 5 days of the office visit. However, a day before admission he was found dead at home.

An autopsy showed that the heart was grossly enlarged, weighing 680 g. It appeared pale and wet. All chambers were extensively involved with confluent epithelioid granulomas and fibrosis. The full thickness of the wall of the left ventricle, the interventricular septum and the papillary muscles were replaced by granulomatous tissue and some fibrosis. The valves, pericardium, coronary arteries, aorta and great vessels were normal. The right


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