roentgenogram of the month

Bottle-Shaped Heart*

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(CHEST 1996; 109:825-26)

A 40-year-old man had progressive shortness of breath for several months prior to hospital admission. He denied cough, fever, chills, chest pain, nausea, or vomiting. He had a medical history significant for end-stage renal disease secondary to hypertension and chronic glomerulonephritis. He was status post re-

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jected renal transplantation, gastrointestinal bleed, and had a psychiatric disorder. He was receiving hemodi-
alysis three times weekly for the past 4 years. Physical examination revealed a thin, ill-appearing man in mild respiratory distress. His blood pressure was 168/102 mm Hg, without pulsus paradoxus. His heart rate was 90 beats/min, and his respiratory rate was 30/min. He had jugular venous distention, with crackles half way up his lung fields bilaterally. He had distant heart sounds without a rub, murmur, or gallop, and no clubbing, cyanosis, or edema of his extremities. Chest radiograph (Fig 1) showed a massive bottle-shaped heart. His electrocardiogram (Fig 2) showed sinus tachycardia with electrical alternans. Echocardiogra-

phy revealed a large pericardial effusion with a “swinging heart,” and partial diastolic collapse of the right-

sided chambers, suggestive of cardiac tamponade. He had normal left ventricular systolic function.
Diagnosis: Pericardial Effusion Secondary to End-stage Renal Disease With Impending Cardiac Tamponade

Uremic pericarditis is a well-known and documented complication of end-stage renal disease. Pericardial effusions have been reported in greater than two thirds of patients with chronic renal failure, with the vast majority being asymptomatic, although constriction and tamponade may be devastating sequelae. Cardiovascular complications are present in most patients with chronic renal failure and cause death in approximately one third of cases. The death rate is reportedly higher in the first year than after the fifth year of dialysis. The mainstay of treatment of pericardial effusion is dialysis. The size of the effusion and the presence of hemodynamic compromise mandates the need for aggressive dialysis and/or surgical intervention. Our patient underwent surgery for placement of a pericardial window. His symptoms resolved after removal of 3.5 L of transudative fluid (chest radiograph, Fig 3). He had an unremarkable postoperative course.

REFERENCES
5 Leehey DJ, Daugirdas JT, Ing TS. Early drainage of pericardial effusion in patients with dialysis pericarditis. Arch Intern Med 1983; 143:1673-75