Pleuropericardial effusion associated with minoxidil administration

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Summary
A patient on minoxidil developed pericardial and pleural effusions with a high protein content. This finding is not compatible with the view that such effusions in patients taking minoxidil are transudates.

Introduction
Minoxidil is a powerful vasodilator hypotensive drug which has been used extensively to control blood pressure in patients with renal failure.

Pericardial effusions are associated with minoxidil therapy (Marquez-Julio and Uldall, 1977). In cases where the protein content of the effusion has been examined in patients—some on dialysis—(Martin, Spodick and Zins, 1980; Houston, McChesney and Chatterjee, 1981) it has usually been in excess of 3 g/dl although the effusion has often been attributed to the haemodynamic effect of the drug and its tendency to cause fluid retention. The patient reported here developed a pericardial effusion with a high protein content and also pleural effusions. It is suggested that mechanisms other than fluid overload and uraemia may have a role in minoxidil related effusions.

Case report
The patient was a 43-year-old Caucasian male whose hypertension had been noted 2 years previously when he complained of bilateral, intermittent claudication. Treatment with methyldopa, atenolol and frusemide had failed to reduce his supine blood pressure below 240/130 mmHg despite compliance with therapy.

Stenosis of the left renal artery was visualized both angiographically and during aortic endarterectomy undertaken to relieve the claudication. It was not possible to correct the renal artery stenosis surgically. Isotope renography carried out when he first presented showed mild impairment of left kidney function. However considerable deterioration in left kidney function was shown on repeat reno-

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mencement of minoxidil. On this occasion recurrence did occur but resolution followed withdrawal of the drug. The blood pressure has subsequently been controlled with captopril 150 mg three times daily, atenolol 200 mg daily, hydralazine 50 mg four times daily and frusemide 500 mg daily.

Discussion
The occurrence of pericardial effusions in minoxidil-treated patients has been ascribed to the uraemia and the salt and water retention consequent on the vasodilatation produced by this drug. This patient had a minor degree of salt and water retention and the effusions contained 43 g/l of protein when the serum albumin was 31 g/l and his creatinine clearance 35 ml/min. It is therefore unlikely that the effusions were due to fluid overload alone and the relatively preserved renal function suggests that this patient does not fall into previously published groups. It is perhaps noteworthy that his HLA typing includes B8 and B27 both of which are associated with autoimmune disease although the DNA binding was normal and no antinuclear antibodies were detected.

We do not believe that previous explanations for minoxidil-induced effusions in terms of salt and water retention or renal failure fully account for the clinical and laboratory findings in this patient.

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References
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