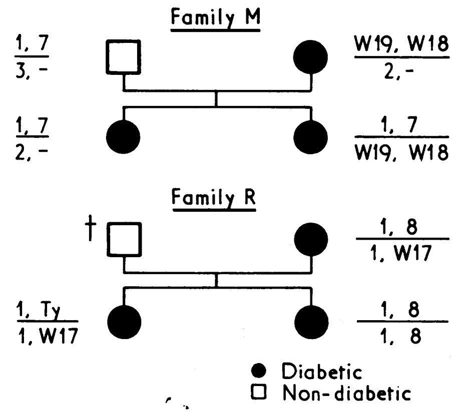

HLA haplotypes in eight members of two families with MODY.

in two branches of the families. The most striking feature is that the diabetics in each family do *not* share a common HLA haplotype. This is thus clear evidence that the gene in MODY is not linked to the HLA-B locus. This study provides further evidence that more than one gene predisposes to, or causes, diabetes.

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1 Tattersall, R B, and Pyke, D A, *Lancet*, 1972, **2**, 1120.
2 Nerup, J, *et al*, *Lancet*, 1974, **2**, 864.
3 Cudworth, A G, and Woodrow, J C, *Diabetes*, 1975, **24**, 345.
4 Cudworth, A G, and Woodrow, J C, *British Medical Journal*, 1975, **2**, 133.
5 Tattersall, R B, *Quarterly Journal of Medicine*, 1974, **43**, 339.

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Pseudo-obstruction due to clonidine

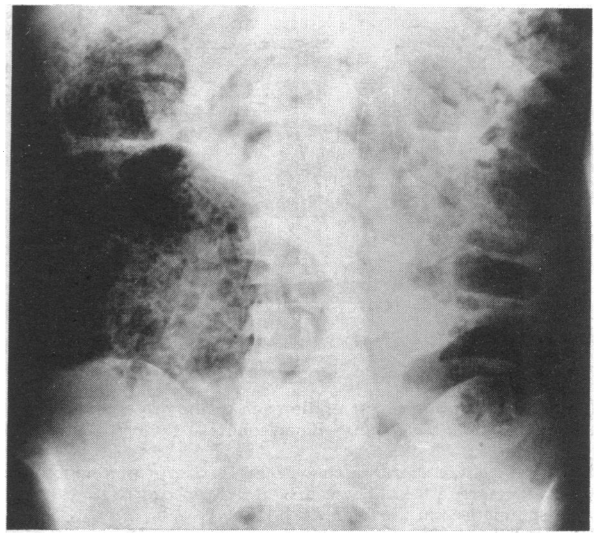
Pseudo-obstruction of the large bowel is characterised by signs and symptoms of bowel obstruction without any demonstrable mechanical cause for them.[1,2] We report a case of this disorder that may have been secondary to antihypertensive therapy with clonidine.

Case report

A 26-year-old man received a cadaveric renal transplant after three years of haemodialysis for chronic renal failure. Hypertension persisted post-operatively and was eventually controlled with hydrallazine 400 mg/day, propranolol 400 mg/day, methyldopa 2 g/day, frusemide 40 mg/day, and clonidine 2 mg/day. During the third to fourth weeks after transplantation the patient developed abdominal distension and obstipation unresponsive to bulk laxatives, mineral oil, and cathartics. Colonoscopy to 60 cm revealed only large amounts of soft, bulky stool. Colonic lavage temporarily lessened the distension but obstipation continued. Thirty days after transplantation the patient developed abdominal pain and vomiting. There were high-pitched, tinkling bowel sounds and radiographic evidence of gross faecal distension of bowel with air-fluid levels (fig). Clonidine was discontinued and, despite continued therapy with other antihypertensive agents, the gastrointestinal signs and symptoms disappeared and bowel function returned to normal within 36 hours.

Comment

The efferent pathway of the defaecation reflex is parasympathomimetic and cholinergic. The reflex, however, can be modulated (for



X-ray picture of abdomen in case of pseudo-obstruction.

example, voluntarily) by the central nervous system. In view of its effects on the central nervous system clonidine, either alone or with other centrally active antihypertensive drugs, may cause bowel dysfunction. Alternatively, a direct effect of clonidine on the enteric neuromuscular complex cannot be ruled out. The manufacturers state that clonidine may cause constipation. An informal survey of our patients taking this drug shows that constipation is surprisingly common. The present report suggests that constipation due to clonidine may occasionally progress to complete pseudo-obstruction.

1 Bardsley, D, *British Journal of Surgery*, 1974, **61**, 963.
2 *British Medical Journal*, 1975, **2**, 105.

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Polycythaemia in androgen-dependent aplastic anaemia

Androgenic steroids—in particular, oxymetholone—have been used to treat aplastic anaemia,[1] but their value is still debated.[2,3] We desribe a patient with phenylbutazone-induced marrow aplasia who responded so well to oxymetholone that she became ill with polycythaemia. Yet whenever oxymetholone was stopped, aplastic anaemia recurred.

Case report

A 65-year-old woman was prescribed a four-week course of phenylbutazone, 200 mg daily, in September 1970 for phlebitis associated with varicose ulceration. It was her only medication apart from thyroxine. She was admitted to hospital in April 1971 with a history of five months' increasing breathlessness, lethargy, and abnormal bruising, and had symptoms and signs of severe anaemia, heart failure, and purpura.

Investigations showed haemoglobin (Hb) = $6 \cdot 7$ g/dl, white cell count (WBC) = $2 \cdot 70 \times 10^9/l$ ($2700/mm^3$) (neutrophils $0 \cdot 35 \times 10^9/l$ ($350/mm^3$)), platelets $\leqslant 10 \times 10^9/l$ ($\leqslant 10\,000/mm^3$), and $\leqslant 1\%$ reticulocytes. Sternal marrow showed reduced haemopoietic cell lines and relatively increased lymphocytes and plasma cells. A chest *x*-ray film showed changes characteristic of heart failure. The results of the following investigations have remained normal throughout her illness: liver function, neutrophil alkaline phosphatase, uric acid level, and tests for paroxysmal nocturnal haemoglobinuria. She was treated with repeated blood transfusions, corticosteroids, and oxymetholone,