abscess fits into this group. Thirdly, true orbital cellulitis or inflammatory infiltration within the space enclosed by the orbital periosteum and orbital septum; case 3 fits into this group. In Scott's series⁴ two of the four patients in this group died and three of them developed cavernous sinus thrombosis.

In our series two diagnostic points emerged. Firstly, the results of nasal-swab culture may help. In all three patients *Staph aureus* was grown from the nose, but conjunctival swabs were initially sterile. Secondly, the x-ray view employed is important. Thus the occipitotemporal sinus x-ray film may not show the ethmoid opacity. In departments where an occipitotemporal view has become standard an occipitofrontal view should be requested specifically.

We thank Mr M J Absolon, Mr J I McGill, and Mr N V Morgan for permission to report these cases.

¹ Duke-Elder, W S, and MacFaul, P A, *System of Ophthalmology*, vol 13, part II, p 859. London, Kimpton, 1974.

² *World Health Organisation Weekly Epidemiological Record*, No 5, March 1976.

³ Ehlers, H, *Acta Ophthalmologica*, suppl, 1937.

⁴ Scott, G I, *Transactions of the Ophthalmological Societies of the United Kingdom*, 1960, 80, 435.

(Accepted 23 February 1978)

Southampton Eye Hospital, Southampton

M J HARLEY, MB, DO, surgeon commander RN and honorary registrar

Southampton General Hospital, Southampton

T H GUERIER, FRCS, senior registrar in ear, nose, and throat surgery

Sodium nitroprusside and renovascular hypertension

Sodium nitroprusside is a peripheral vasodilator which has proved effective in hypertensive emergencies, acute myocardial infarction, resistant pulmonary oedema, and also during surgical procedures (including nephrectomy¹). We report its use in severe drug-resistant renovascular hypertension associated with left ventricular failure before and after corrective surgery. We suggest that the great advantage of sodium nitroprusside is the rapid control of blood pressure, which is easily maintained in the face of major changes in requirements for antihypertensive treatment.

Case report

A 21-year-old man was admitted in April 1977 after an incidental blood pressure (BP) recording of 260/160 mm Hg.

The results of routine investigations were normal including renal function tests. Intravenous pyelography and renal arteriography indicated left renal artery stenosis. Control of hypertension proved difficult and so a left endarterectomy with saphenous patch grafting was performed two months later. BP did not fall, however, and hypertension could not be controlled. The patient was transferred to the hypertension unit at Leicester. His BP was 260/156 mm Hg. He was treated with propranolol 480 mg, prazosin 20 mg, and bendrofluazide 5 mg daily. Urea was 6.9 mmol/l (41.6 mg/100 ml), creatinine 158 μ mol/l (1.79 mg/100 ml). Oral antihypertensive treatment was discontinued and BP control attempted with intravenous diazoxide until 48 hours before renal angiography and renal vein sampling for plasma renin activity (PRA). Large doses of diazoxide partly controlled the BP but the dosage could not be increased because of nausea and vomiting. Angiography showed a thrombosed left renal artery at the site of the previous operation. Some renal function remained on the left, maintained presumably by the well-developed collateral circulation. PRA results (ng angiotensin I/ml/h): peripheral vein 131, aortic 136, low inferior vena cava 141, high inferior vena cava 162, right renal vein 220, left renal vein 366 (upper limit of normal for peripheral vein PRA, 4.4 ng angiotensin I/ml/h). These results were consistent with an appreciable hypersecretion of renin by the left kidney though renin secretion on the right was not fully suppressed.² In view of the difficulty in controlling his BP, corrective surgery was performed.

Before operation he developed severe left ventricular failure resistant to frusemide. Sodium nitroprusside treatment was started according to the published protocol³ and BP was easily controlled at an acceptable diastolic level (see figure). Within hours left ventricular function improved, no further diuretic being needed. Operation confirmed thrombosis of the left renal

BP changes before and after left nephrectomy.

artery and because vascular surgery was not technically possible a left nephrectomy was performed. Control of BP during operation and for 48 hours afterwards was maintained with sodium nitroprusside treatment. At the end of this period it was discontinued. Four days after operation peripheral vein PRA was 1.9 ng angiotensin I/ml/h. Despite this, diastolic BP remained within the range 100-120 mm Hg and he required anti-hypertensive medication on discharge.

Comment

Sodium nitroprusside was of value in our patient in three ways. Firstly, there was rapid, precise, and sustained control of hypertension which had been resistant to other antihypertensive agents, including large doses of intravenous diazoxide. Secondly, severe left ventricular failure responded well, sodium nitroprusside being effective in reducing left ventricular work by decreasing peripheral resistance without increasing venous return and hence stroke volume. Thirdly, BP was controlled easily during surgery and postoperatively. The very short, effective half life of sodium nitroprusside permitted smooth control of blood pressure when substantial changes were occurring in the factors which maintain blood pressure (such as the renin-angiotensin system). We suggest that sodium nitroprusside is the agent of choice in such circumstances.

¹ Loggie, J M H, *Journal of Pediatrics*, 1969, 74, 640.

² Vaughan, E D, *et al*, *Hypertension Manual*, ed J H Laragh, p 559. New York, Yorke Medical Books, 1974.

³ Palmer, R F, and Lasseter, K C, *New England Journal of Medicine*, 1975, 292, 294.

(Accepted 2 March 1978)

Department of Medicine, Leicester General Hospital, Leicester LE5 4PW

G I RUSSELL, MB, CHB, medical registrar

R F BING, MB, MRCP, lecturer

J D SWALES, MD, FRCP, professor of medicine

Meningitis in Whipple's disease

Neurological features are well recognised in Whipple's disease but clinical meningeal inflammation is rare.¹ We report a further case which was unaccompanied by any other clinical neurological abnormality.

Case report

A 51-year-old Caucasian man was referred with a three-year history of increasing polyarthritides, fever, muscle weakness, and steatorrhoea partially responsive to prednisolone, 15 mg/day. Histologically the jejunal biopsy specimen was characteristic of Whipple's disease showing infiltration with