drugs. A prostaglandin E₁ analogue reverses the deleterious effect of giving corticosteroid, as we previously showed for indomethacin.

Piper *et al* concluded that their study might have missed an effect of corticosteroids alone on peptic ulcer disease as less than 8% of the patients they studied were taking doses of over 30 mg/day. Though we do not yet have data from humans, particularly on the rate of regenerative repair of peptic ulcers during treatment with corticosteroid, we do not believe that a clinically relevant effect of these drugs on human peptic ulcer disease in the absence of concomitant non-steroidal anti-inflammatory treatment has yet been ruled out. On this, as on the potential protective effects of prostaglandins and acid reducing agents, insufficient data are available.

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Octreotide and urinary glycosaminoglycan in Graves' disease

SIR,—We reported that octreotide is effective in Graves' ophthalmopathy and pretibial myxoedema.¹ P Perros and colleagues suggest that it will be more convincing if a reduction in circulating insulin-like growth factor-1 concentrations could be shown.² Although insulin-like growth factor-1 has been postulated to be related to the pathogenesis of Graves' ophthalmopathy,³ its concentration in serum was not raised in untreated patients (unpublished data). An increased accumulation of glycosaminoglycan in retrobulbar tissue from patients with Graves' ophthalmopathy and in the dermis of patients with pretibial myxoedema has been reported.⁴ Urinary excretion of glycosaminoglycan is increased in these patients and decreased after treatment with prednisolone.⁵ We find that octreotide also decreases urinary excretion of glycosaminoglycan in these patients.

We treated six patients with Graves' ophthalmopathy and pretibial myxoedema with octreotide 50 µg thrice daily for two days followed by 100 µg thrice daily. A 24 hour urine collection was made before and after treatment with octreotide for one week. Urinary glycosaminoglycan excretion was determined by the method of Kahaly *et al*⁶ except that the supernatant reacted with cetylpyridinium chloride and the isolated glycosaminoglycan was centrifuged for 30 minutes at 15 000 g. Urinary creatinine excretion was measured with an automatic multichannel blood chemistry analyser (Hitachi 736, Japan). Excretion of glycosaminoglycan was expressed as µg/mg creatinine. To avoid interassay variation, samples from each patient obtained before and after treatment were determined within the same assay. We also measured urinary excretion of glycosaminoglycan in three other patients with Graves' ophthalmopathy and pretibial myxoedema, 15 patients with Graves' ophthalmopathy, and 14 normal subjects; they all served as controls.

Urinary excretion of glycosaminoglycan was higher in the patients with Graves' ophthalmopathy, with and without pretibial myxoedema, than in the normal controls ($p<0.005$ and $p<0.05$, respectively). In the patients with Graves' oph-

Urinary excretion of glycosaminoglycan before and after one week's treatment with octreotide in patients with Graves' ophthalmopathy and pretibial myxoedema

Case No	Urinary glycosaminoglycan (µg/mg creatinine)	
	Before treatment	After treatment
1	11.3	10.2
2	7.0	5.4
3	32.8	12.1
4	11.8	7.5
5	20.5	13.7
6	60.1	45.2
Median (range)	16.2 (7.0-60.1)	11.2 (5.4-45.2)*
Median (range) in controls:		
Normal subjects (n=14)	6.8 (1.8-12.7)	
Graves' ophthalmopathy (n=15)	9.9 (4.4-26.0)†	
Graves' ophthalmopathy with pretibial myxoedema (n=9)	13.4 (7.0-60.1)‡§	

* $p<0.05$ Compared with value before treatment (Wilcoxon's signed rank test).
† $p<0.05$, ‡ $p<0.005$ Compared with normal subjects; § $p<0.05$ compared with Graves' ophthalmopathy (Mann-Whitney U test).

thalmopathy with pretibial myxoedema, urinary excretion of glycosaminoglycan significantly decreased after a week's treatment with octreotide ($p<0.05$; table).

Lymphocytes may produce lymphokines that stimulate production of glycosaminoglycan,⁶ and octreotide can inhibit responsiveness of T lymphocytes.⁷ Octreotide may therefore directly inhibit the release of lymphokines, resulting in inhibition of the production of glycosaminoglycan and a decrease in urinary excretion of glycosaminoglycan.

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Reversing vasectomy

SIR,—I was disappointed that Anjan K Banerjee and Alan Simpson did not mention in their editorial the best pregnancy rates that have been achieved after reversal of vasectomy in the United Kingdom.¹ Jenkins and Blacklock reported a pregnancy rate of 64.5%.² They used a simple technique that required a prolene stent, which ensures that the lumina are accurately apposed; four sutures; and, perhaps most importantly, milking the epididymis of all obvious secretion before anastomosis so as to decrease the risk of

leakage of sperm and subsequent granuloma. This potential complication is arguably the most important for the long term results of this operation.

Banerjee and Simpson's comments questioning the desirability of performing this kind of surgery in a hard pressed NHS are valid. I suggest that adoption of Jenkins and Blacklock's technique would save operating time and obviate the need for expensive microsurgical equipment to be used, especially as there is no evidence that pregnancy rates are improved by increasing the complexity of the procedure.

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Advanced trauma life support

SIR,—In his letter on advanced trauma life support Andrew J Mowat describes the focus of this method of managing trauma as being x ray investigation, diagnostic peritoneal lavage, urinary catheterisation, and rectal examination.¹ As a successful candidate on an advanced trauma life support course he will realise that x ray investigation, diagnostic peritoneal lavage, and rectal examination are part of the secondary survey.² Urinary catheterisation is part of the resuscitation phase. Although resuscitation can be started at the scene, urinary catheterisation is clearly not essential to the patient's survival before admission to hospital.

I came away from an advanced trauma life support course with the focus of the system ringing in my ears—namely, "A, B, C, . . ." This is the primary survey:

- A: Airway maintenance with control of the cervical spine;
- B: Breathing and ventilation;
- C: Circulation with control of haemorrhage;
- D: Disability: neurological status.²

Resuscitation begins while the elements of the primary survey are reassessed. Once the patient's condition is stable, and only then, the secondary survey begins.

Advanced trauma life support is one method of trauma care. If one method was adopted by all doctors caring for patients with trauma, life would be easier for us and perhaps safer for our patients. I would have thought that any immediate care doctor treating a patient at the scene of an accident could follow the "ABCD" above and begin appropriate resuscitation as taught by the advanced trauma life support course. I would certainly be happy to take on the care of such patients in an accident and emergency department and would be grateful to the doctor concerned.

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SIR,—Andrew J Mowat comments on the need for better immediate care in the United Kingdom.¹ Deaths before admission to hospital are usually due to brain injury, haemorrhage, and airway problems. In addition, 15-35% of patients in whom a head injury is diagnosed before admission have secondary brain injury from hypoxia or hypovolaemia.²