provides effective pain relief for the procedure of transthoracic electrocautery for palmar hyperhidrosis. A review of the literature has shown that intrapleural 0.5% bupivacaine introduced in situ provided excellent pain relief immediately before removal of the last endoscopic port and provided excellent postoperative pain relief. As far as we are aware, this technique has not been described previously [3].

We compared the incidence of arterial desaturation between the first and second side. We discussed in our article the possible mechanism of this desaturation. In practice, after it had been checked that there was no endobronchial tube misplacement, the arterial desaturation immediately improved with one or two small manual ventilations of the collapsed lung. This manoeuvre does not disturb the surgeon and we would suggest that the arterial desaturation is related to the degree of lung collapse [3].

SIR.—We read with interest the article by Jedeikin and colleagues on anaesthesia for transthoracic sympathectomy as treatment for upper limb hyperhidrosis [1, 2]. They reported that 56 of their 58 patients experienced distressing retrosternal or upper back pain during the first 2-4 h after operation. Recently, we have anaesthetized six patients for this procedure in our hospital and have found that intrapleural 0.5 % bupivacaine introduced immediately before removal of the last endoscopic port provided excellent postoperative pain relief. As far as we are aware, this technique has not been described previously [3-6].

Whereas 43 of Dr Jedeikin's 58 patients had bilateral sympathectomies, all of our patients had unilateral procedures. In most respects, the anaesthetic techniques were similar. Our patients received neither no premedication or a benzodiazepine. Induction was with thiopentone 3-5 mg kg⁻¹. Intubation and maintenance with left-sided Robertshaw endobronchial tubes and anaesthesia with enflurane in oxygen-nitrous oxide supplemented with 0.1 mg kg⁻¹ alfentanil was maintained with enflurane in oxygen-nitrous oxide supplemented with 0.1 mg kg⁻¹ alfentanil. At the end of the procedure, 0.5 % bupivacaine 2 mg kg⁻¹ was instilled intrapleurally. No intrapleural drains were left in situ.

All patients were comfortable in the recovery ward, the worst pain being described as a dull ache in the ipsilateral arm and relieved by paracetamol. No toxic effects of bupivacaine were seen [7] and all patients were discharged from hospital within 24 h.

From our limited experience, it would seem that this technique provides effective pain relief for the procedure of transthoracic endoscopic sympathectomy.

S. E. PLASTOW M. T. WEIZ
St Mary's Hospital London

2. Ahlborg F, Mølgaard J, Rasmussen BS, Noreen MF. Intrapleural administration of 0.5 % plain bupivacaine compared to 0.5 % epinephrine: a hemodynamic and ventilatory study. Regional Anesthesia 1991; 16: 257-261.

**PERIOPERATIVE BLOOD LOSS**

SIR.—The review by Dr Simpson on perioperative blood loss and its reduction was most interesting [1]. As the level of concern about transfusion-related infection has increased greatly in the past decade, so has interest in means of reducing requirements for blood products. The other reason for reducing intraoperative bleeding is to facilitate surgery by providing a bloodless field. However, the article did not include some of the most recent techniques available to the anaesthetist to decrease blood loss.

Normovolemic haemodilution is used often to decrease the need for transfusion of homologous blood. The technique is safe and effective as long as rigorous criteria are followed [2]. The technique also offers several advantages such as increased cardiac output, better regional blood flow and better tissue perfusion. The practical aspects, physiological consequences and inclusion criteria of the techniques have been reviewed recently [3].

Specific pharmacological agents have been used to decrease blood loss. They are used more commonly during operations in which massive blood loss is anticipated, such as during cardiac surgery and orthotopic liver transplantation. An impressive reduction in both intraoperative and postoperative blood loss was reported after the use of high dose aprotinin during cardiac surgery [4]. Aprotinin (TrasyloL) is a serine protease inhibitor known to inhibit human plasmin, trypsin and tissue kallikrein. It is postulated that aprotinin prevents the activation of plasma proteins and platelets during cardiopulmonary bypass, and thereby helps to preserve normal coagulation. Aprotinin has been used successfully for the reduction of blood loss after liver transplantation [5] and peripheral vascular surgery [6]. Synthetic and natural antifibrinolytic agents have been used to decrease bleeding after cardiac surgery. Desmopressin, a synthetic form of the hormone vasopressin which releases factor VIII and von Willebrand's factor from endothelial cells, is postulated to prevent the activation of plasma proteins and platelets during cardiopulmonary bypass, and thereby helps to preserve normal coagulation. Aprotinin has been used successfully for the reduction of blood loss after liver transplantation [5] and peripheral vascular surgery [6]. Synthetic and natural antifibrinolytic agents have been used to decrease bleeding after cardiac surgery.

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A variety of techniques can aid the anaesthetist in reducing perioperative blood loss, but the clinician must weigh the benefits and disadvantages of these intraoperative techniques in each patient before deciding to use any one.

B. APPADU
Leicester Royal Infirmary
Leicester