Matters arising

Brachial plexus lesion complication sternotomy

Sir: Drs Graham, Pye and McQueen described five patients with brachial plexus injury after median sternotomy.¹ The authors stated that plexus involvement has been recorded surprisingly infrequently and in limited detail. The reported cases had been registered in a period of less than three years. Referring to the multiple problems in the postoperative care after cardiac operation making the detection of less striking disorders difficult, the authors state that plexus injury may not be uncommon. However, they do not give any incidence data on the described condition. Having carried out a prospective long-term neurological follow-up on open-heart surgery patients² I would like to present some additional information on the subject.

Neurological examinations performed ten days after open-heart surgery through median sternotomy revealed signs of brachial plexus injury in 12 cases (12%) in a sample of 100 patients (37 women, 63 men). All the cases reported their complaints spontaneously but the symptoms had been given only little attention in the postoperative care unit, where cardiac and respiratory problems had been dominant. The signs were left-sided in seven, right-sided in four and bilateral in one of the patients. All the four right-sided patients showed predominantly sensory symptoms with slight motor signs, if at all, present. This was also the condition in the bilaterally involved case. In the left-side injury patients, motor signs were predominant in four and sensory in two. The clinical signs

referred to involvement of the lower part of the brachial plexus in all of the patients, additional signs of the lateral cord were present in one of them. The plexus injury could not be attributed to any recognisable preoperative, intraoperative or postoperative factor except median sternotomy. There were no patients with diabetes or cervical ribs, nor patients with a history of neurological or vascular disease of the upper extremities. No neuropathic diathesis could be identified. Traction or compression of the brachial plexus, as discussed in detail by Graham, Pye and McQueen,¹ was thought to be the aetiology of the disorder. The duration of the operation (given as duration of the perfusion) had no influence on the incidence of the complication: 11% of operations with a short perfusion time (< 2 h) and 13% of operations with a longer duration were followed by plexus lesions. In accordance with previous observations^{3,4} the majority of the affected patients were male (9 vs 3). This difference between the sexes, which has remained unexplained, may be associated with the type of operation, since in this series all the plexus injury cases occurred only after aortic valvular replacement performed more than three times more often among the men than among the women.⁵ Six patients recovered completely from the plexus injury in two months, two further patients becoming asymptomatic in five months while four had persistent complaints and signs (motor and sensory in three, sensory in one of them).

Brachial plexus injury is one of the neurological problems in cardiac surgery.^{2,5,6} Peripheral neurological complications seem to be relatively frequent but as they do not cause vital harm they are often neglected in postoperative patient

surveillance. Overlooking the peripheral disorders is not surprising when we realise that up to three quarters of postoperative cerebral disorders (though most commonly slight) remain unrecognised during regular postoperative care.² Peripheral neurological complications, however, should not be overlooked: first, because they seem to cause considerable and enduring annoyance; second, because they are potentially avoidable; and third, because they may be misdiagnosed as cerebral complications.

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