CORRESPONDENCE

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R W Gilliatt, FRCP; J H Ebbettts, MRCP; S E Clowes, MB, FRCP; and R V Jones, FRCS

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Correspondents are urged to write briefly so that readers may be offered as wide a selection of letters as possible. So many are being received that the omission of some is inevitable. Letters should be signed personally by all their authors.

Thoracic outlet compression syndrome

Sir,—Your leading article on this subject (1 May, p 1033) is hardly likely to encourage neurologists to advise resection of the first rib for pain in the arm. Indeed, no neurological papers are cited and no neurological evidence is offered for your views. From the neurological point of view the position with regard to cervical ribs and thoracic outlet syndromes may be stated briefly as follows.

(1) There is a clearly defined neurological syndrome (which may be called the "classical" syndrome) in which patients (usually female) with a rudimentary cervical rib develop weakness and wasting of the small muscles in the hand and, to a lesser extent, of the forearm muscles. Sensory loss, if present, is on the inner side of the forearm, with or without spread to the ulnar side of the hand and fingers. Wasting is often particularly marked in the thenar muscles, as originally described by Howell1; this distribution, which was later characterised as "partial thenar atrophy" by Wilson,2 was perhaps over-emphasised in his subsequent writing3 and led to confusion with the carpal tunnel syndrome. However, the distinction between the two conditions is easily made by sensory nerve conduction studies.4-6 The use of intradural histamine on the inner side of the forearm is also important in confirming that the sensory loss is due to a postganglionic lesion.4,5 The radiological abnormality associated with this syndrome is usually a minimal one, taking the form of a small rudimentary rib or an enlarged down-curving C7 transverse process. Operation has consistently revealed a sharp fibrous band passing forward from the bony abnormality to the first rib, over which the C8 and T1 roots, or the lower trunk of the brachial plexus, are angulated. This band, designated the "scalenus medius band" by Bonney,8 was consistently present in our own published series of nine patients; since then its presence has been confirmed at operation by Professor V Logue in a further 10 patients with this syndrome.

(2) It should be emphasised that the clinical picture described above is a rare one. The 20 cases studied by Professor Logue and myself have been collected over a 15-year period, the rate of referral increasing in recent years as a result of our known interest in the problem. Although most patients complained of pain in the arm for several years before developing weakness of the hand, the pain was not usually severe and it has been even less common for patients to be referred for pain alone due to this cause. In contrast to the 20 patients with the classical syndrome, I have only referred for surgery two patients with cervical ribs and pain and paraesthesiae alone during the same 15-year period.

(3) How common is the classical syndrome in the absence of a cervical rib or abnormal C7 transverse process? Bonney described three patients with wasted hands in whom a scalenus medius band was present without a bony abnormality,6 but the only patient whom I have seen personally in the last 15 years who appeared to fulfil all the clinical criteria of the classical syndrome, but with normal radiology, turned out to have a neurofibroma of the lower trunk of the brachial plexus.10 (4) It is in relation to patients without either a wasted hand or a radiological abnormality in the neck that most of the confusion has arisen. At one time the scalenus anticus syndrome 6,8 had its strong protagonists, but few scalenotomies are carried out today. What is now being suggested is that there is a relatively large group of patients with pain in the arm who are likely to be helped by removal of the first rib. Partial or complete resection of the first rib was originally recommended by Falconer for costoclavicular compression11-15 but in recent American papers16-18 the indications for operation appear to be far wider than those originally proposed. However, the clinical details given in these papers do not establish a characteristic picture, and objective confirmatory tests are also lacking. Maneouvres designed to obliterate the pulse in certain positions are notoriously difficult to interpret, and ulnar nerve conduction studies, upon which much stress has been laid by one group,14 have proved unhelpful in the hands of others.

A disconcerting feature of the recent papers on first rib resection is the large number of operated patients—for example, 138 in the series reported by Urschel et al.14 of whom 70% were without radiological evidence of a cervical rib or band. Only a small proportion of these had major vascular symptoms and even fewer had wasting of the hand. Do we really believe that pain and paraesthesia requiring removal of the first rib occur so commonly when the classical neurological syndrome associated with a rudimentary cervical rib or an abnormal C7 transverse process is relatively rare? In the absence of objective criteria surgical fashions come and go; in my view the indications for resection of the first rib need to be much more carefully defined before we can decide whether the procedure is likely to have a permanent place in the management of pain in the arm.

R W GILLIATT

University Department of Clinical Neurology, National Hospital, Queen Square, London WC1

1 Howell, C M H, Lancet, 1907, I, 1702.
2 Wilson, S A K, Proceedings of the Royal Society of Medicine, 1913, 6, 133.
Sir,—Your excellent leading article on this subject (1 May, p 1033) draws inaccurate inferences on the basis that the doctrine of the erect human posture is self-evident. It appears to assume that the adoption of the erect human posture, which started 12m years ago, increased the range of flexion of the trunks; arteries, and veins passing into the arm and shoulder, are involved. The incorrect posture of a quadruped is set during weight-bearing in the "military shoulder pose" and the greater extension present at the base of the quadruped's neck imposes inevitable stretch — particularly on the nerves. So that the change in posture is unlikely to have created the possibility of compression at the thoracic outlet.

Since most of the symptoms mentioned may be of cervical origin and there is no way of eliminating irritation of spinal nerve roots (if the value of nerve conduction tests is denied) as a cause, direct or indirect (for example, trapezius weakness), it is unfortunate that the importance of subclavian artery compression should have been played down. Without it the syndrome should not be diagnosed since to do so is to ignore a correctable spinal cause. In addition to nerve root irritation, both scoliosis and an abnormal nervation of the first rib should be remediable by spinal manipulation.

The part played by cervical ribs is of negligible importance since they are present in only 0.6% of the population1 and when present less than 10%, of them produce pain.3

JOHN EBBETS
London W1

3 Hill, R M, British Journal of Surgery, 1939, 27, 100.

Sir,—As you point out in your leading article (1 May, p 1033), it is often difficult to differentiate nerve entrapment at this level from cervical spondylosis — and indeed on occasion from carpal tunnel compression. I have found that the most useful diagnostic sign of this type of entrapment is tenderness over the trunks of the brachial plexus in the root of the neck. The commonest finding at operation in this situation was that the brachial plexus trunks ran across the sharp point of a cervical rib; the site of tenderness in the neck accurately located this state of affairs, which was found in four cases. The tip of the rib is always enclosed in muscle fibres which run down into the scalenus

medium, but these do not protect it sufficiently to prevent considerable pressure on the brachial plexus trunks. Resection of the anterior part of the cervical rib solves this problem.

However, in some other cases in which cervical ribs were seen on x-rays the anterior ends of these ribs were found at operation to be too far inferior to impinge on the brachial plexus trunks. In these cases, and in some others in which no cervical ribs were present, vascular anomalies were found to be the cause of nerve compression. A plexus of veins draining into the transverse cervical vein ramifies in and out between the cords of the brachial plexus and can entrap individual cords or nerves. The first such patient I encountered had bilateral symptoms of brachial nerve root compression on one side produced complete relief of sympotms and the patient then requested that the other side be similarly operated on; a similar state of affairs was found and again resection of the veins relieved his symptoms. Another cause of nerve entrapment, found in two cases, was that the first thoracic nerve root was tightly compressed against the first rib by a very small artery running backwards across it.

In the less common, but important cases of subclavian artery compression with peripheral embolism which you mention it is important to realize that the artery may pulsate and look completely free externally, though permanent intimal damage has occurred. One such case was encountered in this series.

In other cases compression of the brachial plexus or muscles by a variety of fibrous bands or tendinous arches may be the cause of the trouble. In view of the wide range of possible anatomical causes of symptoms in these cases I feel that exploration of the structures through a supraclavicular approach is safer and more logical way of tackling the problem than resection of the first rib through the axilla, which may not reveal the problem.

B VICTOR JONES
FarEast, Hants

Osteopaths Bill 1976

Sir,—On 7 May the Osteopaths Bill was read for the second time. On the face of it it is a harmless measure, merely intended to decide who can and who cannot use the letters SRO (State-registered osteopath) after his name. At the moment MRO (member of the Register of Osteopaths) is used and is protected by trade-mark law. Unfortunately, the passage of the Bill will have repercussions reaching far beyond manipulative personnel.

Mrs Butler, who presented this Bill, has been importantly misled on the scope of osteopathy, for she uses the words "osteopathy or treatment by manipulation." Strictly speaking, osteopathic dogma is not concerned with manipulation: it is an alternative system of medicine whereby disease is attributed to spinal displacements (the so-called "osteopathic lesion"). It merely happens that the chosen remedy of treatment is also used by doctors, physiotherapists, chiropractors, and nature-healers, few of whom believe in osteopathy. Bone-setters have manipulated the spinal joints for at least 2000 years.1 What Mrs Butler clearly intended was a register of competent manipulators. What she is unwittingly likely to achieve is State recognition for osteopathy by the back door.

We have State-registered nurses, and all are agreed that nursing assists, and in no way conflicts with, the tenets of medicine. Moreover, nurses are taught and work in hospitals. They follow a medically approved syllabus and are examined and supervised by external consultants. The public will understandably deduce that the State registration of osteopaths implies the same official acceptance of osteopathy as SRN indicates approval of nursing. If recognition is granted the State is in a dilemma, suddenly accepting two opposing views on the genesis of disease. I very much hope therefore that the appropriate committee of the BMA will look at the implications of this little Bill and take the cudgels for medicine. They should also note that the registration is not, like nursing, physiotherapy, etc, for a profession ancillary to medicine but for an autonomous body making their own diagnoses and ordering their own treatment — in other words, doctors — but without having to obtain a medical qualification.

Public confusion can only be increased by this Bill, and Mrs Butler's misapprehension must be brought urgently to her notice.

JAMES CYRIAX
London W1