community, will allow clear definition of any bias towards the 50% rate they demonstrated in UK multiple sclerosis patients. Conversely, a low level in the patients will reinforce the environmental argument for the observed New Forest cluster.

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Reference

1 Swingler RJ, Compston DAS. The distribution of multiple sclerosis in the United Kingdom. *J Neurol Neurosurg Psychiatry* 1986;**49**: 1115–24.

Compston and Swingler reply:

Dr Markby's preliminary observations from the New Forest underline the need for case control studies of risk factors in multiple sclerosis from areas where the disease is inappropriately frequent or rare. Although we believe that genetic factors exert an important influence on the distribution of the disease, at least in the United Kingdom we are aware that there are too few areas where simultaneous prevalence and immunogenetic studies have been carried out, and there are exceptions to the rule that multiple sclerosis is common where DR2 is frequent in the at-risk population (for example, Hungarian Gypsies and some African tribes). Owing to misprinting of the horizontal axis in our recent paper, each point in figure 10 was inadvertently moved 10% to the left.

Subsequently[1] we have argued that under the multifactorial and polygenic model of susceptibility, the prevalence and specificity of genetic and environmental associations with multiple sclerosis will vary with changes in the absolute risk conferred by individual susceptibility factors and their normal frequency. We agree that environmental exposure should be compared carefully in cases and controls in the New Forest where multiple sclerosis may be very common despite a relatively low frequency of DR2 in the normal population.

Reference

1 Swingler RJ, Compston DAS. HLA and multiple sclerosis in south east Wales. *J Neurol Neurosurg Psychiatry* (in press).

C7 Radiculopathy: importance of scapular winging in clinical diagnosis

Sir: We were interested to read the article by Makin, Brown and Ebers.[1] They reported six cases of C7 radiculopathy in which weakness of the serratus anterior, manifested by winging of the scapula, was a feature. Recently, we have treated a further case.

A 35 year old electrical worker presented with two months history of neck pain, right brachialgia and deep infraclavicular and subscapular pain. The pain was worse on movements and straining. His right arm felt weak and numb. He gave a previous history of neck pain, which had no brachialgic or other element, and which responded to chiropractic attention.

On examination, there was a good range of cervical spine movements, weakness of the right triceps and an obviously winged scapula. The right triceps and supinator jerks were reduced. No sensory deficits or long tract signs were elicited. Plain radiographs showed a reversed cervical lordosis and narrowing of the C6/7 disc space. There was no instability on the flexion and extension views. Cervical myelography demonstrated a C6/7 disc prolapse compressing the right C7 roots. CSF protein content was 0·47 g/l.

The patient underwent anterior cervical discectomy and fusion. At operation a large sequestrated disc fragment compressing the right C7 root was removed. Postoperatively, there was immediate symptomatic relief and return of power to triceps. Serratus anterior recovery was, however, slow.

The motor weakness in this case was confined to the triceps and serratus anterior contrasting with the cases reported where the pectoralis major, latissimus dorsi and extensor carpi ulnaris were frequently involved. Four of the cases reported had anterior cervical discectomy and fusion and all derived symptomatic relief and made a good neurological recovery.

It is perhaps surprising that weakness of serratus anterior does not occur more frequently in C7 radiculopathies. We suggest however, that if the serratus anterior function were to be tested in a more diligent manner according to the recommendations of Makin *et al*, then what is apparently a rare clinical phenomenon may possibly be more commonplace. We would further comment that the thoracic distribution of pain seen in our case is not uncommon with C7 root compression but is frequently misinterpreted.

We are grateful to Dr Brian Phillips for referring this case for neurosurgical treatment.

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Reference

1 Makin GJV, Brown WF, Ebers GC. C7 radiculopathy: importance of scapular winging in clinical diagnosis. *J Neurol Neurosurg Psychiatry* 1986;**49**:640–4.

Book reviews

Subarachnoid Haemorrhage. By RP Sengupta and VL McAllister. (Pp 378; £114·00.) Berlin: Springer-Verlag, 1986.

Although it is 30 years since (Sir) John Walton published his famous monograph on subarachnoid haemorrhage, this is the first work in English that has appeared on the subject since then. During this time our understanding of this complex neurosurgical catastrophe has expanded beyond recognition as has our ability to treat the lesions responsible. This is probably as opportune a time as ever for an up-to-date review of current knowledge on the subject, for following the explosion of both information and technology there are signs that the pace of advance may be beginning to slacken. Much of this present text is likely to be of permanent value.

Mr Sengupta and his radiological colleague, Dr VL McAllister, have produced what must surely become the definitive guide to this field. The book is clearly written and beautifully produced. It contains a wealth of outstanding illustrations. Every aspect of subarachnoid haemorrhage and its management is covered in thorough, even recondite, detail, and the current literature is exhaustively reviewed. As is appropriate, the book commences with an historical review and ends with a chapter devoted to possible future developments.

Mr Sengupta is widely regarded as the premier aneurysm surgeon in Great Britain and the text draws generously on his own clinical experience and surgical results. The