

to the lateral corticospinal and spinothalamic tracts. As the legs are represented laterally in these tracts their axons are relatively spared.² The patient has a characteristic presentation with disproportionately greater weakness of the arms than of the legs, a variable sensory loss, and often a tell tale abrasion of the forehead.⁵ This diagnostic pointer is the topic of the lesson of the week on p 669. A plain radiograph of the cervical spine will show osteophyte formation but no fracture or dislocation.

With non-surgical management about half of patients with central cervical cord injury make a useful functional recovery, and Schneider and Schemm suggested that surgical decompression had no part to play in this injury.² Bohlmann, too, found that half the patients with this syndrome treated conservatively were able to walk; he also observed that the single patient who had an acute prolapse of the cervical disc made a complete recovery after its surgical removal.¹ Nevertheless, he reported that laminectomy was associated with increased rates of neurological deficit and mortality. The extent of early recovery is an indicator of the eventual outcome and probably reflects the amount of local damage to the spinal cord. Recovery of function in the legs is better than that in the arms, but poor grip strength causes reduced mobility if a walking aid cannot be handled satisfactorily.

Young *et al* drew attention to cervical disc prolapse in elderly patients with cervical spondylosis, though their patients presented with spastic quadriparesis indicating an anterior cord syndrome.⁷ Recent studies with high resolution magnetic resonance imaging have shown that a surprisingly high proportion of patients with acute lesions of the central cervical cord have prolapsed cervical discs (M Piazza, paper to

Cervical Spine Society European Section 6th annual meeting, St Gallen, Switzerland, 1989; B E Northrup, personal communication). The series by Piazza showed that 47% of patients with central cord lesions had a substantial prolapse of a cervical disc, though the average age of their patients was only 31. This finding must make us consider whether the elderly patient who develops a central cord lesion has such a disc prolapse and whether its removal will improve the outcome. It seems reasonable to suppose that it might, and some authors have suggested that anterior decompression is beneficial to patients with this injury.⁸ No controlled study of anterior decompressive surgery in central cervical cord injury has been carried out to answer this question. Nevertheless, better imaging and earlier diagnosis may generate a more active response in the management of patients with acute injuries to the central cervical cord.

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Our dirty towns

Uncollected refuse and discarded litter

Visitors to Britain must be appalled by the amount of refuse lying around the streets of London and other big cities. Elsewhere in Europe cities are cleaned regularly and efficiently.

Houses, shops, and restaurants require a regular system of refuse collection if the environment around them is to be kept clean and reasonably healthy. Local authorities have a statutory duty to provide an adequate and efficient system of refuse collection, yet many—especially in urban areas—seem unable to do so. In the past householders, shops, and small businesses could depend on a regular collection of their refuse at least weekly. Today collections are irregular and sometimes non-existent for weeks. Heaps of refuse in burst plastic bags pile up on pavements and alleyways. These encourage infestation by rats and cats and an increase in the fly population. The vermin may help spread gastrointestinal infections and other diseases, and the heaps are an accident hazard to children. Since the war, the contents of domestic refuse have changed. Formerly it included ashes, rags, paper, glassware, crockery, and metal, together with kitchen waste. The ash content has been reduced with the welcome abandonment of uneconomic and dirty coal fires as a means of warming houses. The kitchen waste content has also been reduced by the sale of already cleaned vegetables. But the dry refuse content has been increased by the addition of all sorts of packaging materials, largely consisting of plastics. The new materials are not biodegradable and will reduce the natural composting which takes place in landfill sites over several years.

The main problem with domestic and commercial refuse is then, one of failure to provide regular and hygienic collection. The blame lies partly with local politicians and partly with the public service trade unions. Many city fathers seem to have forgotten that local authorities came into being to protect the environment from "nuisances." The early medical officers of health such as Dr Duncan of Liverpool, believed that epidemics originated from heaps of rotting organic material. Although microbiological research showed that this concept was false, heaps of refuse are not only aesthetically undesirable they also provide breeding grounds for vermin and parasites. The task of collecting the rubbish has been bedevilled by problems with the workforce, which have seen many prolonged strikes. City dwellers have become familiar with the accumulation of heaps of black garbage bags during these disputes. So-called productivity schemes seem to the citizen to have resulted in less frequent and less reliable collections. Yet refuse collection is no longer a dirty job, it is a physical job with good provision for the health and safety of the operatives.

But policy failure has encouraged local authorities to employ private contractors, and some have had a measure of success. But overall the past decade has seen a decline in the quality of refuse collection. We believe that local authorities need to remember that efficient refuse collection should be a priority duty and one which requires adequate funds and firm management.

Fortunately a bright star has appeared in the gloom—namely, the campaign for recycling refuse. As environmentalists have begun urging us to waste less, local authorities

and others have at last realised that much of refuse may be reused profitably. Recycling may not be a moneyspinner, but it should pay the cost of collection. Waste paper, bottles, cans, plastics, and discarded household appliances can all be conserved and the materials reused. If it is to be effective, however, the collection and sorting of refuse must be organised. This should be the duty of local authorities, yet few have taken up the challenge. Other countries seem far ahead of Britain in providing facilities for the collection of reusable materials.

Uncollected refuse is one problem; another is discarded litter. The sheet of greasy newspaper which wrapped up the fish supper 40 years ago has been replaced by a plastic tray. Most refuse associated with fast food is dropped near the point of sale. The provision of one or more large waste bins by the management outside the shop would help the customers to keep the area tidy. But it is not only lager louts who throw plastic trays and empty cans into the road. Citizens of all types discard wrappers from confectionery, cigarettes, newspapers,

and so on on to the street. The twin remedies are provision of waste containers (regularly emptied) and education. Legislation already exists making the dropping of litter an offence, but these laws are rarely enforced. In Moscow someone who drops a cigarette end on the street is likely to find a policeman prodding his ribs and requiring him to pick it up and put it in the appropriate receptacle. In Singapore the offence carries a heavy fine and the police are vigilant. Are such activities too robust for the British?

Mr Richard Branson's anti-litter campaign seems to have failed, and even Mrs Thatcher's foray of collecting litter in the park only provided material for the comedians. Yet this is a serious subject. The solution lies in the hands of local authorities; all those who have lost patience with the squalor around them should complain loudly and repeatedly to their local politicians.

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Diagnosis of multiple sclerosis

Remains essentially clinical though silent lesions can now be identified

A diagnosis of multiple sclerosis at once raises for the patient the spectres of disability and loss of independence and a decline in living standards. Self evidently, the diagnosis should be accurate, but because there is still no specific test for the disease it is often delayed and difficult. In the past decade, however, some techniques have been introduced that facilitate diagnosis and enable an earlier classification to be made with confidence in a greater proportion of patients. The results of the new methods of assessment have been widely confirmed and have incorporated a new set of diagnostic criteria.¹

The diagnosis of definite multiple sclerosis remains primarily clinical and depends on an appropriate history and showing the presence of at least two separate lesions that have appeared at different times in the white matter of the central nervous system. Other possible causes need to be actively sought and excluded.

The diagnosis is easy when physical examination shows evidence of two or more focal lesions in a patient with a clear history of two or more remitting episodes of neurological disturbance of several weeks' duration. It is more difficult in the patient with a steadily progressive course from onset; here, the illness must have been present for at least six months and it must be shown that one or more new, anatomically distinct lesions have appeared since initial presentation. In such less definite cases and in patients presenting with a history of frequent attacks but having few or no abnormal physical signs the new techniques are particularly helpful. The data they give help in two ways: in identifying clinically silent lesions and in showing immunological abnormalities related to the central nervous system.

Asymptomatic lesions may be identified by several techniques, of which the evoked potential methods^{2,3} (visual, auditory, and somatosensory) are the most widely available.⁴ Overall, the results are abnormal in about three quarters of patients with clinically definite disease, and in this category they are abnormal in around half of patients who have no abnormal signs related to the pathways being tested. Herein lies their usefulness. Abnormal evoked potentials tend to be less common in the less definite cases, but they are nevertheless

useful in diagnosis. In an initial episode of optic neuritis, for example, auditory or somatosensory evoked potentials are abnormal in about a quarter of patients.⁴ The visual evoked potential is the most generally useful test because of its sensitivity and the stability of the abnormalities and because patients often present with symptoms originating in the spinal cord or brainstem (for example, paraesthesia, spastic weakness, vertigo) and the visual pathways are anatomically remote from both. The recently introduced techniques for measuring central motor conduction may also be helpful.⁵

By far the most sensitive method for showing lesions in multiple sclerosis is magnetic resonance imaging. Over 95% of patients with clinically definite multiple sclerosis show irregularly shaped periventricular and discrete focal abnormalities in the white matter of the brain (figure, left).^{6,7} For technical reasons spinal cord abnormalities have been less easy to visualise, but this limitation is rapidly being overcome. Abnormalities seen on magnetic resonance imaging correspond to the histological lesions of multiple sclerosis.^{6,8}

Three common clinical syndromes that may herald the onset of multiple sclerosis are reversible visual loss, vertigo, and weakness or tingling of the limbs, though all have other causes. In about two thirds of such patients multiple clinically "silent" lesions are visible on magnetic resonance imaging in the brain at presentation.^{9,12} Follow up studies have shown that more than half of such patients develop multiple sclerosis within 18 months.^{13,14} Occasionally these isolated syndromes may be the only clinical expression of an acute disseminated encephalomyelitis, which though multifocal is nevertheless monophasic.¹⁵ For this reason definite multiple sclerosis must not be diagnosed on the basis of a single scan: clinical or magnetic resonance imaging follow up is always required. Magnetic resonance imaging is especially helpful in excluding spinal cord compression (figure, centre) and cerebellar degeneration in the small but important group of patients whose illness is progressive from the onset (figure, right).⁶ Here, as in the detection of the multiple sclerosis lesions themselves, magnetic resonance imaging is superior to x ray computed tomography.