

However, in summing up the present state of our knowledge about MS, the following appears to be relevant:

1. Careful epidemiological studies show that there are clusters of MS cases in specific areas.
2. There are anomalous concentrations of lead in the water, soil, or vegetables in the areas where the prevalence of MS is abnormally high.
3. There is a considerable amount of evidence to suggest that MS is caused by a slow-acting virus.
4. There is also evidence that 'the setting up' of MS takes place at an early age, possibly between 12 and 18 years of age.
5. A copper enzyme is known to be involved in the formation of myelin.
6. Lead, molybdenum, and doubtless other heavy metals, are all capable of aborting the effective development of copper enzymes.
7. Dr Petkau and his associates at Canada's Whiteshell Nuclear Establishment at Pinawa near Winnipeg have demonstrated how a virus can multiply only when it can penetrate a cell wall, and shown that this is possible only when the fluid around that cell contains anomalous amounts of a heavy metal. In these experiments magnesium was the metal used, but it seems probable that other metals would perform a similar function.
8. Dr Petkau and his associates also investigated amyotrophic lateral sclerosis (ALS), admittedly a different disease, but one with some similarities to MS. They found ten times the amount of lead in the nerve and muscle tissue of those who had died because of ALS than they did in their controls, even in cases where the ALS sufferers had not been known to be exposed to any known lead insults. No mention was made of any blood or urine lead anomalies.

May I suggest that in trying to relate all MS cases to lead insults we are falling into the error of thinking that lead is the only potential poisoner of the copper enzymes involved in myelin formation?

In examining blood and urine from MS patients we may be looking into the stable after the horse has bolted! Would it not be worthwhile to examine nerve and muscle tissue not for lead alone, but for all the elements likely to poison the copper enzyme involved in myelin formation?

HARRY V. WARREN
Professor Emeritus

Department of Geological Sciences
University of British Columbia
Vancouver BC V6T 1W5.

Reference

Journal of the Royal College of General

Practitioners, 26, 622-626.

Petkau, A. (1974). *British Journal of Industrial Medicine*, 31, 275-287.

DOCTOR-PATIENT RELATIONSHIP

Sir,

I accept a great deal of Dr McSherry's comment (October *Journal*), and in particular his emphasis on physical examination and withholding unnecessary drugs.

However, I lay even greater emphasis on the doctor-patient relationship as a diagnostic and therapeutic instrument. It is not possible to practise scientific medicine in the absence of this relationship, just as it is not possible to provide an economically efficient primary care service in the absence of adequate doctor-staff relationships. The technician who attempts to practise medicine in a vacuum is in danger of becoming unscientific. It is not accidental that in the United Kingdom general practice is one of the few caring professions with a strong tradition of long-term relationships with families.

For the adult, I do not accept that 'straight talking' helps to develop the early stages of a relationship; 'straight listening' is much more important. Yet another prescription of unnecessary drugs from skilled hands can be a token of goodwill on the way to disentanglement from dependency.

There is no such thing as an absolute diagnosis. Diagnosis is an assessment of probabilities based upon data made available from history and physical examination in the context of the doctor-patient relationship. In order to achieve diagnostic accuracy it is important that the diagnostic triad (history, examination, and relationship) should be adjusted optimally. This may require more than one consultation, and less accurate estimates of diagnostic probability may need to be accepted meanwhile.

A good physician has an eye for the future. One major reason for occasionally accepting lower diagnostic accuracy would be the risk of prejudicing future diagnoses with a greater risk to life. The child with acute appendicitis who is afraid of the doctor, owing to a minor skirmish six months previously when he had acute otitis media, has a significantly greater risk of inaccurate diagnosis, delay, or self-neglect.

Which is more important: a minor technical point, such as a glimpse of a red tympanic membrane in probable* acute otitis media, or a reduced threat to life six months later, for instance early

diagnosis of acute appendicitis? Both are important, but for the newly registered patient they may, in some circumstances, be mutually exclusive.

D. M. SMITH

The Health Centre
Castlefields
Runcorn WA7 2HY.

*This term is used loosely to describe the illness of a well cared for pyrexial child whose 24 to 48 hour history of cough, sore throat and nasal discharge has progressed to increasing, intractable, unilateral pain in the ear (without external swelling of the face or neck), which is pulled or clutched constantly. If the teeth are well kept, and the mother is sensible and competent, the probability of acute otitis media in one or both ears is fairly low. Study of the respiratory and cough patterns, together with the history, may (in an accessible practice) enable one to prescribe an antibacterial drug for a strange frightened child without further examination. This highly undesirable sacrifice of technical values may occasionally be necessary for reasons given above.

Reference

McSherry, J. A. (1976). *Journal of the Royal College of General Practitioners*, 26, 767.

THE UNITARY ORIGIN CONCEPT OF DISEASE

Sir,

In an infection there is usually a pure culture of the infecting organism. When the patient has carcinomatosis the secondary deposits usually have the same cellular composition as the primary growth; in other words, the pathological process is a clone of cells.

These diseases begin as a single event affecting a single cell. One might with advantage enquire whether this observation might not be applied to all diseases. Consider a common complaint such as influenza. If the average person is ill for one week every other day the incidence is one in 100. The chances of having two separate simultaneous infections with influenza are one in 10,000, so that here there is a strong bias towards a single origin.

The difficulty with many complaints, such as multiple sclerosis or rheumatoid arthritis, is that the pathological process is only dimly understood and the causative agent largely unknown. However, their incidence is about one in 1,000 or less, so that the chances of a dual origin rise to about 1,000,000. Obviously our current knowledge of pathology is very incomplete; however, it seems probable that when we have a fuller understanding of this subject it may be found that