Conclusion

Children with seizures may both show and create difficulties at all levels. Careful and repeated assessments of the child, his family, and his school are called for if secondary and tertiary handicaps are to be reduced. Following the Reid Report *People with Epilepsy* special centres are being established at which such assessments will be possible.

References

- ¹Hippocrates, *The Sacred Disease*, in his *Works* ed. by W. H. S. Jones, E. T. Withington, London, Heinemann, 1923.
- ²Department of Health and Social Security, *People with Epilepsy*. London, H.M.S.O., 1969.

Second Opinion, Please

Lumbar Disc Problems

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British Medical Journal, 1972, 3, 285-286

J.T.C.: Jim, I have been looking through our visiting lists and surgery attendances and find that we spend a lot of time dealing with lumbar disc lesions. These can be difficult problems in general practice because the incapacity may continue for many weeks and a considerable amount of time may be lost from work. Relapses are not uncommon and residual symptoms seem to be the rule. If you take Mr. A. B., a disc problem that you sorted out for me a couple of years ago, he illustrates quite a few of my problems. Briefly, he is a 40-year-old hard-working farm labourer. He is what I would term an "honest sort of chap" and, incidentally, is a well-controlled diabetic. I first saw him about three months before asking you to do a domiciliary consultation. He came to the surgery one night complaining of gradual onset of cramp-like pain in the posterior part of his left thigh and anterolateral aspect of the leg below the knee. There was no definite history of injury and he said that the pain was worse on sitting and on activity. His only other complaint was of hypersensitivity of the dorsum of his left foot. To me, this story strongly pointed towards a lumbar disc protrusion, though I would have expected him to have had some back pain as well.

J.P.G.: I agree that this history suggests a diagnosis of a lumbar disc protrusion. The distribution of the pain indicates that there was an irritative lesion of the fifth lumbar nerve root, and at this age a disc protrusion is by far the commonest cause. There is often no history of injury, and back pain is not always present.

J.T.C.: When I examined him the most obvious abnormality was that he stood with scoliosis of his lumbar spine convex to the right. Movements of the lumbar spine were grossly limited. Straight leg raising was restricted on the left to 40° and was normal on the right. On neurological examination he had some weakness of the left toe extensors, particularly of the extensor hallucis longus. There was some blunting of cutaneous sensation of the dorsum of his left foot and the reflexes in his legs were normal.

J.P.G.: These physical findings indicate that this patient had a fairly severe lumbar disc protrusion. The "scoliosis" which is sometimes found is really a lateral tilt of the lumbar spine, which tends to relieve the pressure of the protruding disc on the affected nerve root. The tilt may be towards or away from the side of the pain depending on the relationship of the protrusion to the nerve root. The limitation of straight leg raising is due to hamstring spasm, and in general terms is proportional to the severity of the nerve root irritation. Most lumbar disc protrusions are at the L4-L5 or L5-S1 levels and on the basis of the neurological examination it seems likely that this patient had a lesion of the L4-L5 disc.

J.T.C.: I requested an x-ray of his lumbosacral spine and did an E.S.R. I told him to go home to bed and gave him Distalgesc tablets to be taken two three times daily, and a couple of Soneryl tablets at night. However, he insisted on keeping at work and pointed out that he considered bed to be an aggravating factor. I find that it is common for these people to refuse to go to bed, which makes me wonder if bed rest at an early stage is ever worthwhile. As he would not take my original advice, I told him to put boards under his mattress, to sit with his lumbar region supported, and to avoid flexion of the spine when lifting. Would you have considered manipulating his spine or giving him a spinal corset, particularly in view of his insistence on keeping at work?

Treatment

J.P.G.: A patient with a disc protrusion of this severity is best treated by bed rest, possibly combined with traction. As you say, patients are unwilling to go to bed at first, and accept this advice only when symptoms become very severe. A plaster jacket, or a corset, is of benefit in patients who remain ambulant, and is one method of resting the lumbar spine. I would not advise a manipulation in a patient with an acute lumbar disc protrusion, as there is a risk of exacerbating the condition.

J.T.C.: Incidentally, the E.S.R. was normal and x-ray of his lumbosacral spine did not reveal any bony abnormality. Following this first visit he kept at work for the next ten weeks—although I am sure that he was in a lot of pain and was sleeping badly. Then one evening I was asked to visit his house as his pain was much worse. There was tension in the household and

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you felt that both husband and wife had had enough. Straight leg raising was now 20° on the left and 70° on the right. There was anaesthesia to pinprick down the anterolateral aspect of the leg as well as on the dorsum of the foot. My treatment consisted of an intramuscular injection of pethidine 100 mg and I left him some pethidine tablets to be taken if necessary. In addition I gave him Valium tablets 5 mg three times daily. You did your domiciliary visit the next evening, when he was somewhat easier. You will remember that you suggested his admission for bed rest and traction and that the patient was admitted next day for this treatment. Do you think that it is possible to use pelvic traction out of hospital, is pethidine a good drug, and would you have used a tranquillizer?

J.P.G.: It is certainly possible to use traction at home, but I find that in practice it is better to admit the patient to hospital. Good nursing care is required, which is often not available at home, and the pain may become more severe when traction is started. I believe that the bed rest contributes much more to the success of treatment than does the traction itself, but the traction probably helps to immobilize the lumbar spine. Pethidine is useful when traction is first started and I give it routinely for the first 24 hours. Tranquillizers are of value in the nervous, highly-strung patient.

Indication for Operation

J.T.C.: I saw him several times in hospital and you will remember that he didn't settle down. A myelogram showed a disc protrusion at the L4-L5 level and this was followed by operation. Is the myelogram always conclusive; by this I mean, would you ever consider doing an exploration with a normal myelogram?

J.P.G.: There is a considerable difference of opinion about the value of myelography in lumbar disc protrusions. I find that it usually provides confirmatory evidence of the presence and level of the protrusion and for this reason I do a myelogram before operation. However, the results can be misleading, and I tend to rely more on the clinical findings. In this case the myelogram did show a defect at the L4-L5 space. The fifth lumbar nerve

root was found to be tightly stretched by a sequestered disc protrusion, and this was removed.

J.T.C.: He started work six weeks after the operation and hasn't missed a day since. Is it necessary for patients to wear a spinal corset after operation and, if so, for how long?

J.P.G.: A corset should not be necessary after a successful removal of a disc protrusion if the operation is done through a limited exposure. Movements of the lumbar spine are probably a factor in preventing the development of adhesions around the nerve root which has been freed, and I encourage spinal exercises in the early postoperative period. However, a corset may be helpful in some patients with residual pain.

J.T.C.: While we are on the subject, do you think that disc lesions in older men—say, over 50 years of age—are a special problem? At present we have four men who fit into this category. They tend to be overweight and all have done a lot of hard physical work in their younger days. They have persistent back pain and the sciatic pain does not seem to be so well defined as in younger patients. Our experience is that it is nearly impossible to get them back to work. Suitable light work is not available in this area and they become chronic invalids.

J.P.G.: The chronic degenerative lumbar disc lesions can be a problem in manual workers, particularly in the older age group. The derangement of the disc causes changes in the posterior joints of the lumbar vertebrae and this is why the low back pain is a prominent feature. They may also have nerve root pressure from a number of causes which are due primarily to the disc lesion. One suspects that there may be functional overlay in some cases. Unfortunately, there is often no effective treatment for a man who has to do heavy work except finding him a lighter job, and this may not be possible.

Glossary

E.S.R.	erythrocyte sedimentation rate
Distalgesic	containing dextropropoxyphene hydrochloride, and paracetamol
Soneryl	butobarbitone

Any Questions?

We publish below a selection of questions and answers of general interest

Smallpox Revaccination and Gammaglobulin

In some countries medical authorities advise those seeking revaccination against smallpox to have an injection of pooled human gammaglobulin as well if the primary vaccination was done more than 20 years earlier. In such cases can the use of gammaglobulin (not hyperimmune vaccinia gammaglobulin) be expected to reduce the local effects of the revaccination or the incidence of serious complications?

Human normal immunoglobulin is prepared from the pooled plasma of over a thousand randomly selected donors and is used for protecting contacts of infectious hepatitis, measles, and, occasionally, rubella. It is not expected to be effective in the prevention or treatment of smallpox or indeed of chicken-pox, whooping cough, or serum hepatitis. Whereas the initial pooled sera and the final immunoglobulin fraction are assayed for antibodies against measles or poliovirus as a check on the fractionation procedure, vaccinia antibody estimations are not

necessarily carried out. Consequently, the potency of vaccinia antibodies in issued normal human immunoglobulin varies considerably from batch to batch¹ rendering the product completely unreliable for the purpose of reducing smallpox vaccination reactions. It is possible, of course, that the batch of human normal immunoglobulin referred to in the question has been assayed for vaccinia antibodies but it does not meet the European Pharmacopoeia or World Health Organization requirements for human vaccinia immunoglobulin, otherwise it would have been designated as such.

Human vaccinia immunoglobulin is prepared from the serum of a limited number of recently vaccinated donors. It contains 500 International Units of vaccinia antibodies per ml and in view of its fixed potency is suitable for use to reduce the risk of complications following smallpox vaccination.

¹ Heiz, R., and Link, F., *Proceedings of the Eleventh International Congress for Microbiological Standardization*, Milan, 1968. Basel/München/New York, Karger, 1970.