

INTRATHECAL PREDNISOLONE THERAPY IN POSTOPERATIVE ARACHNOIDITIS FOLLOWING OPERATION OF HERNIATED DISC

H. TKACZUK

Department of Orthopaedic Surgery, University Hospital, Linköping, Sweden.

Fourteen patients with severe, chronic sciatica operated on repeatedly but without lasting success were treated by two intrathecal injections of methyl prednisolone (40 mg and 80 mg) at an interval of a few days. Significant improvement was obtained with regard to pain in many cases, but as there was no control series it is difficult to assess the results.

Key words: intrathecal methyl prednisolone; postoperative arachnoiditis

Accepted 10.iv.76

In lumbago and sciatica prednisolone preparations have mostly been administered by epidural injection, and a number of investigators have obtained good or very good results (Barry & Keendall 1962, Beliveau 1971, Brun & Langdon 1974, Harley 1967). Few accounts have been published on intrathecal injection (Seghal et al. 1963), but, on the whole, encouraging results have been reported. Orthopaedic clinics see many patients with severe sciatica of long standing, which prevents the patient from working, in whom all types of treatment have been tried without success, and on whom one or many exploratory operations or removal of herniated discs have been performed. In such severe, chronic states myelography often discloses diffuse arachnoiditis with imperfect filling of the root sheaths and constriction of the whole dural canal. In this department we have treated difficult cases such as these by giving two intrathecal injections of

methyl prednisolone at an interval of 3-7 days.

PATIENTS AND METHODS

The age of the patients ranged between 27 and 75 years (mean age 42 years). Twelve were men and two women, all had had severe sciatica for at least 6 months, and all had been operated on one to three times (Table 1). The first injection, 40 mg of methyl prednisolone, was given in connection with a lumbar puncture (Depo-medrone®). After an interval of 3 to 7 days a second injection, this time of 80 mg, was given.

The following features were recorded before and after treatment:

- 1) Pain on walking
- 2) Pain on standing still
- 3) Pain on sitting
- 4) Pain at rest.

To obtain a measure of these different degrees of pain the patient was asked to indicate his sensations on a line the left end-point of which corresponded to no pain and the right end-point to extreme pain (Figure 1).

In recording pain after the conclusion of treatment the patient was able to refer to the previ-



Figure 1. The line used by patients to indicate different degrees of pain.

ous graph, and could therefore grade any improvement or deterioration with respect to his previous assessment.

Table 1. Case reports and percentage improvement after treatment.

No.	Age	Sex	No. of op.	Total improvement %
1	46	M	1	46
2	36	M	1	30
3	40	M	1	0
4	27	F	2	0
5	31	M	3	15
6	52	M	1	69
7	53	M	1	55
8	75	M	1	18
9	32	M	1	11
10	43	M	2	10
11	52	F	1	11
12	50	M	2	10
13	53	M	2	53
14	47	M	1	0

Statistical evaluation

Significant improvement ($P < 0.01$) after treatment was recorded for the series taken as a whole with regard to pain on standing. Significant improvement was also noted for pain on walking, pain on sitting, and pain at rest ($P = 0.05$) (Figure 2).

RESULTS

Three characteristic cases serve to illustrate the results.

Case 1

The patient, a 53-year-old male, with herniation of disc L4-L5, had been operated on twice, in 1960 and 1972. The second operation produced

no improvement. He complained of constant pain radiating to the left leg, and pain at rest. Lasègue's test was positive on the left side, giving pain at 30° extension. Depomedrone was given intrathecally on 22/11 and 29/11 1973, and the patient was discharged in an improved condition and with much less pain. On re-examination 3 months later the patient had again deteriorated, and complained of pain at rest, but the symptoms were less severe than before injection therapy. Lasègue's test was positive at 75° extension.

Case 2

This patient, a 52-year-old male, was operated on in 1967 for herniated disc (L5-S1, left side) with improvement. From 1969 the patient suffered increasingly from lumbago and sciatica, the pain radiating to the left leg. Lasègue's test gave pain at 40° extension, and the patient was discharged in a much improved condition. There was practically no pain at rest, and Lasègue's test was negative. On re-examination after 3 months the patient was still free from pain, and had been able to resume work.

Case 3

The patient, a 31-year-old male, had an exploratory operation in 1968 owing to herniated disc (L5-S1). Fusion of L3-S1 was carried out in 1968. In 1973 laminectomy L5-S1 with division of adhesions was performed. None of these operations produced any improvement, and the patient suffered from constant pain at rest and pain on weightbearing. Lasègue's test was positive on both sides at approx. 30° extension. On two occasions in November 1973 Depomedrone was injected without improvement.

After the first injection one of the patients experienced pain in the back and both legs similar to his usual sciatica but rather worse. This new pain subsided after a few days' rest. In the other patients no complications were noted.

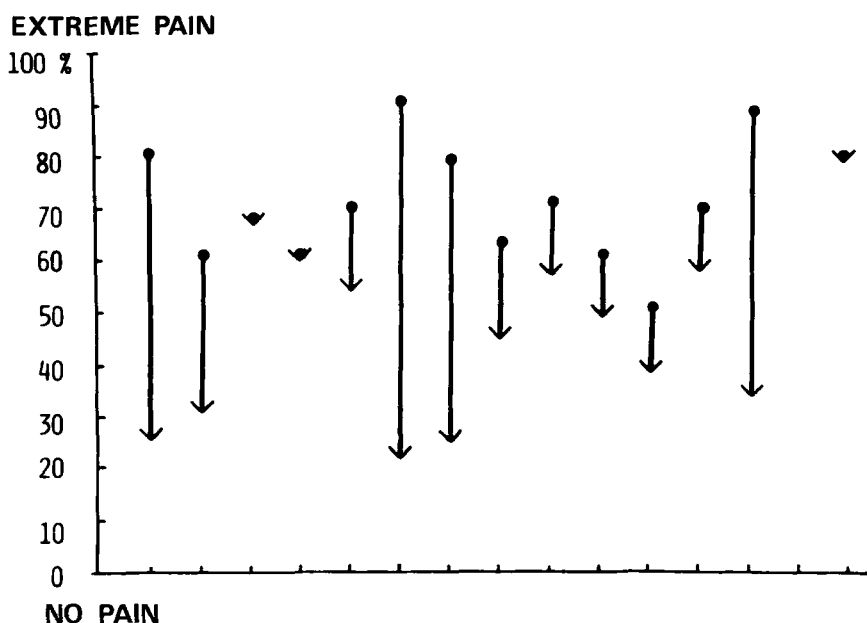


Figure 2. Comparison of the degree of pain before and after treatment. ● – pain before treatment; ▼ – pain after treatment.

DISCUSSION

Statistical analysis (principal component analysis) of the relationships between the different types of pain showed that pain on standing and pain at rest are the two most significant features, since they cover 80 per cent of all information obtained from this investigation. In assessments of this type, therefore, it is probably sufficient to measure these two characteristics.

As in earlier reports in the literature on the effect of this treatment we had no controls, and it is therefore difficult or impossible to say with certainty whether the improvement noted is due to a pharmacological effect on the inflammatory process in the dural sac, or whether improvement can be attributed to a placebo effect. Having regard to the particularly chronic and severe nature of the cases in question, however, and also to the fact

that they had not previously responded to any form of treatment, it may be postulated that the result is at least partly due to pharmacological effects. Nevertheless, since there are few if any alternatives it should be worth trying in selected cases.

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