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# The Value of Caudal Analgesia in the Treatment of Sciatica

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**Abstract.** This study evaluates treatment with a combination of steroids, local analgesic solution, and manipulation under general anesthesia for sciatica pain. This treatment was compared in both acute and chronic cases. Of the 400 patients evaluated, 327 presented in acute attack for the first time while 73 presented with histories of sciatica. A significantly high percentage of the cases (94.5%) in acute attack were relieved with the first treatment and 68.5% of chronic cases were relieved with the second treatment. Only 2.1% of the acute cases and 17.8% of the chronic cases were in need of more invasive diagnostic procedure and surgery (myelography and laminectomy). This method provides a fast and easy way for the management of sciatica pain without complications and unnecessary exposure to invasive procedures. It should be considered as the first line treatment of sciatica.

## Introduction

Back pain and sciatica represent a significant health problem causing morbidity and loss of productivity. The number of cases is increasing rapidly altering us to the need for a definite treatment.

The epidural sacral (caudal) analgesia was first introduced by Cathelin and Sicard in 1901, and was used by Schlimpert in 1913 [1]. The use of epidural analgesia for relief of sciatic pain was advocated by Evans, Cyriax, and Coomes [2] as the conservative treatment of choice for those patients who have lumbar disc lesion because epidural injection gave good results in comparison with patients who just have bed rest. Later, steroids were used and obtained even better results [3,4].

In this study, a steroid (methylprednisolone acetate) and a local analgesic solution (lidocaine) were combined along with manipulation under general anesthesia. The aims were to evaluate the efficacy of this type of therapy to control sciatica pain; to stress the unnecessary use of the invasive diagnostic procedure and surgery (myelography and laminectomy), and to compare the outcome of this treatment on acute and chronic cases.

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## Patients

Four-hundred patients presenting with root compression due to herniated lumbar disc as diagnosed clinically on by plain x-ray were randomly assigned to two groups.

Group A (327 cases) were those who presented in acute attack for the first time; group B (73 cases) were those who had had a previous experience of sciatica and now presented in acute or chronic attack. Patients in both groups were given the same treatment. The characteristics of all patients are summarized in Table 1.

## Methods

Noninvasive diagnosis was used on all patients based on careful history, thorough clinical examination, and plain x-ray (P-A & lateral) of the lumbosacral region. Myelography was not used on any of the patients.

Following preoperative evaluation and preparation, general anesthesia was given. All patients were placed in the prone position, preferably with two pillows under the pubis and one below the chest. The caudal area was then disinfected with betadine and alcohol. Following application of towels, the triangular sacral hiatus was palpated by working the fingers upward starting from the coccyx tip until the depression of the sacral hiatus. Then, by moving the finger laterally, the sacral cornu on both sides was identified. At the most cephalad point of the sacral hiatus, the needle (17 G) was introduced perpendicularly until the sacrum was contacted. The needle was then withdrawn slightly and reintroduced in a 45 degree angle through the sacrococcygeal membrane into the caudal canal for 3 cm length or no further than the line joining the posterior superior iliac spines where the dural sac ends. Aspiration test was then done for blood or cerebrospinal fluid to be sure that the needle was not introduced inside a vein or dural sac. A test dose (5 ml) of 0.5% lidocaine solution was injected and the successful position was determined by the ease of injection and the absence of injection tumor in the subcutaneous tissues. Methylprednisolone acetate (Depomedrol) 80 mg was injected with a 2-ml separate syringe and the rest of the lidocaine solution (200 mg, 40 mL) was completed. The needle was withdrawn and the area was covered with a

**Table 1.** Characteristics of patients participating in the study

| Patients | Group A | Group B |
|---|---|---|
| Number | 327 | 73 |
| Percentage | 81.75% | 18.25% |
| Presentation | Acute attack for first time | Chronic |
| Age (years) | | |
| Mean: | 35.3 | 37.6 |
| SD: | 11.5 | 13.3 |
| Sex | | |
| Male: | 225 | 49 |
| Female: | 102 | 24 |
| Weight (kg) | | |
| Mean: | 61.8 | 59.7 |
| SD: | 9.6 | 10.6 |

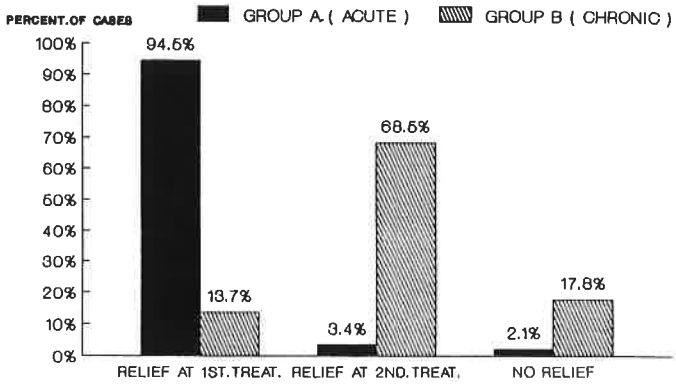


**Fig. 1.** The outcome of treatment in both groups.

clean gauze. Manipulation under general anesthesia was done for the lumbosacral region by flexion, extension, and left and right rotation. After recovery, the patient was monitored for any complications and was discharged a few hours later.

Each patient underwent follow-up at 2-week intervals for the first 6 weeks, then 3-monthly for 1 year. Patients were evaluated by interview and clinical examination. Those who did not benefit from the first treatment by after 2 weeks were subjected to a second injection and manipulation and were put on the follow-up schedule. The data were analyzed statistically using the standard normal deviate test (Z test).

## Results

A significantly high percentage (81.7%) of the patients in group A (those presenting sciatica for the first time) were relieved completely from pain after a single injection and manipulation. Eleven patients (3.4%) experienced minor relief and the procedure was repeated on their first follow-up visit, resulting in complete relief. No relief at all was noticed in only 7 patients (2.1%) and they were sent for more invasive diagnostic procedure and surgery (Table 2, Fig. 1).

In group B, only 10 patients (13.7%) had complete relief from pain following the first injection and manipulation, while 50 patients (68.5%) were relieved after the second treatment. Thirteen patients (17.8%) had no relief and were therefore sent for myelography and laminectomy (Table 3, Fig. 1).

## Discussion

Many orthopedic and neurosurgeons proceed, on the first signs of root compression due to prolapsed disc, to invasive diagnostic procedure (myelography) and extensive surgery (laminectomy) while the problem can be solved completely in most of the cases with simple injection and manipulation under general anesthesia.

The use of epidural local anesthetic solutions gave a temporary relief of sciatica pain [1,2]. Many workers have used steroids alone with good results [3–6]. In this study a combination of both drugs through the sacral hiatus with manipulation under general anesthesia gave an excellent result in which 94.5% of cases of acute attach were relieved following the first treatment. Most chronic cases (68.5%) were relieved after a second treatment. Only 2.1% of the acute cases and 17.8% of the chronic cases needed myelography and spinal surgery.

General anesthesia was given to all patients for the sake of comfort. Furthermore, manipulation of the lumbosacral region is easiest when it is done under general anesthesia to break the calcifications and adhesions.

We did not use adrenaline with lidocaine, as we felt it was unnecessary to expose the patient to unwanted cardiovascular effects of adrenaline under general anesthesia.

In conclusion, the combination of lidocaine, steroids,

**Table 2.** The result of treatment in acute attack patients

| Result | No. of patients | Percentage |
|---|---|---|
| Immediate relief after first treatment | 309 | 94.5% |
| Relief after second treatment | 11 | 3.4% |
| No relief | 7 | 2.1% |
| Total | 327 | 100% |

**Table 3.** The result of treatment in chronic patients

| Result | No. of patients | Percentage |
|---|---|---|
| Immediate relief after first treatment | 10 | 13.7% |
| Relief after second treatment | 50 | 68.5% |
| No relief | 13 | 17.8% |
| Total | 73 | 100% |

and manipulation of the lumbosacral region proved to be an excellent method of treatment in cases of herniated disc in the lumbosacral region prior to myelography and spinal surgery.

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