Results of Selective Nerve Root Blocks for Lumbosacral Prolapsed intervertebral Disc Disease.

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ABSTRACT: Results of Selective Nerve Root Blocks for Lumbosacral Prolapsed intervertebral Disc Disease. The radiating pain to leg secondary to prolapsed intervertebral disc is a common presentation often referred as sciatica in common conversation. The leg pain is quite a disabling symptom for the patient. In present study out of the 100 patients, males were 56 and females were 44. The average age of male were 40 (18 yrs-62yrs) years and females were 42 (20-60yrs) years. Average time of onset of procedure was 3 weeks. Out of hundred patients 88 has single level and 12 patients has two level disc prolapsed. The selective nerve root block is an effective method to tide over the initial pain in absence of neurological symptoms and can be offered to all the patients as it can reduce the need to have oral or parenteral analgesics without exposing the patient to any risk.

Introduction
The radiating pain to leg secondary to prolapsed intervertebral disc is a common presentation often referred as sciatica in common conversation. The leg pain is quite a disabling symptom for the patient. And its annual incidence is reported to be 1-5 %. Since the prolapsed intervertebral disc symptoms regress in 70% of patients with time, there is a tendency for holding to conservative treatment by majority of treating surgeons and patients, till there is absolute Indication for the surgery [1,2]. The Absolute indication for opting for surgical treatment is appearance of neurological symptoms[3]. The disease which has not resolved by eight weeks is also presumed that the symptoms of leg pain may not regress and in order to make patient functional the surgical option is considered by many surgeons at this stage[4,5]. To tide over the initial crises of severe pain Selective nerve root blocks can decrease the pain of the patients and in some cases help in obviating the need for discectomy. The symptoms are due to physical compression, chemical mediators released from nucleus pulposus, sensitization of sodium channels in dorsal root ganglion [6,7]. The local delivery of corticosteroid and local anaesthetic agent helps by diluting chemical mediators, decreasing inflammation and decreasing the sensitization of dorsal root ganglion [8,9]. This is the analysis of pain score of the 100 consequent patients who were been given selective transforaminal nerve Root blocks (SNRBs) in 2016 and 2017.

Material methods
The patients with radicular pain to leg secondary to prolapsed intervertebral disc who didn’t responded to rest and drugs in a week and had Visual analogue score (VAS) of pain more than 6 were offered selective nerve root block (SNRB). The patients with any clinical evidence of infection or which had neurological deficit were not given the SNRB.

An exercise for assessing approximate trajectory was also done in a cadaver by placing the 20 G spinal needles in various foraminas undervision and assessing the approximate angle of entry at various distances from the midline.

The SNRBs were given in operation theatre, putting patient in prone position, under image guidance, the desired space was entered by 20 G spinal needle after anaesthetizing the area from where the needle need to be introduced. The patient was told to inform about feeling of paraesthesias on entry of the needle. He needle is introduced at 45 degree to the ground.

The tip of needle should stay lateral to medial half of the pedicle and beneath it. Position is checked under image intensifier in Anterioposterior and lateral positions. The combination of 3 ml xylcaine 2% and methylprednisolone 80 mg (2ml depot preparation) is injected at the site.

The results were assessed by comparing pre and post procedure VAS at day 1, day 7, 1 month, 3 months and 1 year. Those patients who didn’t reported to OPD were telephonically asked about the VAS.
Results

Out of the 100 patients, males were 56 and females were 44. The average age of male were 40 (18 yrs - 62 yrs) years and females were 42 (20 -60 yrs) years. Average time of onset of procedure was 3 weeks. Out of hundred patients 88 has single level and 12 patients has two level disc prolapse. L2-3 involvement in 2 patients, L3-4 in 10 patients, L4-5 involvement was in 43 patients, L5-S1 was in 45 patients. Predominant Left sided pain was in 56 patients and right sided pain was in 44 patients.

Average preop VAS was 8

On day one, in forty patients there was no pain after the procedure. Average post procedure VAS was less than 2 in twenty patients. The thirty patients reported VAS between 2-4. The ten patients had VAS more than 4 on day one.

On day seven the patients with no pain were 36. VAS between 1-2 were in 4 patients with average of 1.5. VAS between 2-4 was in 40 patients with average AS of 3. VAS between 4-6 was in 10 patients with average VAS of 5. Between 6-8 VAS there six patients with average of VAS 7. Above VAS 8 there were 4 patients with average of 9. Total average of all patients VAS was 2.54

After one month 35 patients has VAS score of 0, meaning no residual pain. VAS upto 2 was in 10 patients with average of 1.5. VAS between 2-4 was in 30 patients with average VAS of 3. VAS between 4-6 was constant in 10 patients with average of 5. The other 15 patients has an average VAS of 7. Five patients had undergone discectomy by this time.

After three months 30 patients reported no pain. 20 patients reported VAS between 1-2. 10 patients reported pain between 2-4, 20 patients reported pain between VAS 4-6, 6 patients between 6-8, and 4 patients with more than 8. Five more patients had opted for discectomy by this time.

At six months followup 32 patients had no pain, 15 patients had VAS between 1-2, between 2-4 the VAS was in 23 patients and between 4-6 there were 15 patients and between 6-8 there were 2 patients. Another 3 patients had undergone discectomy by this time.

After one year 34 patients reported no pain. 12 reported between 1-2, 18 reported between 2-4, 16 patients reported VAS between 4-6. 5 patients had VAS between 6-8. Two more patients had undergone discectomy in last six months.

By one year post procedure 15 patients had undergone discectomy out of 100 patients and out of 85 remaining patients 46 had pain relief not necessitating analgesic intake. 18 patients had pain, which demanded occasional rest and analgesic but the ADL was being carried out unhindered. The remaining 21 patients had pain about which they were repeatedly seeking medical help but decision to undertake surgical intervention was not forthcoming.

There was no case of any infection or dura puncture. There has been six incidence of venous puncture, in these, the styllete was reintroduced into the needle, and the needle was repositioned. In none of them there occurred the need to abandon the procedure.
Discussion
The resolution of symptoms occurs spontaneously in 70 percent of the patients by two to six months. This is the period during which the pain relief modalities need to assist natural mechanisms of resolution and local delivery of corticosteroid and an anaesthetic agent at prolapsed intervertebral disc, root interface has been found useful in this study. There occur chemical neuritis because of release of chemical mediators, venostasis because of pressure on the root resulting in fibrosis and hypersensitisation of dorsal root ganglion. The local anaesthetic agent decreases sensitivity of dorsal root ganglion, and steroid decreases the inflammation reducing chemical neuritis and future chances of perineural fibrosis at disc nerve interface. All these mechanisms of actions helps in reducing the pain produced by prolapsed intervertebral disc(4,5). The results are similar to earlier reported series. In this study the at one year 34 patients are completely pain free with 12 patients having very mild symptoms. Another 18 patients have symptoms which are tolerable and do not hinder with the activities of daily living. All these 64 patients do not require much of the medical assistance. 15 patients had to undergo discectomy in one year. The remaining 21 patients are the patients for which the pain is significant and the choice of their further treatment was not very clear owing to various medical co morbidities or psychological factors. This is the group of patients which need to be evaluated further for understanding their disease. The selective nerve root block is an effective method to tide over the initial pain in absence of neurological symptoms and can be offered to all the patients as it can reduce the need to have oral or parenteral analgesics without exposing the patient to any risk.

Conclusion
The prolapsed intervertebral disc disease, which gets resolved by itself in about two thirds of patients need pain relief modality for which the selective nerve root block method for pain reduction is effective in almost sixty percent of the patients and can help delay or obviate the need to have surgery as method of pain relief.

References