Lumbar Facet Joint Infiltration in Post Laminectomy Pain

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Abstract

Lumbar facet joints are increasingly held responsible for a low back ache. Literature on the use of the lumbar facet blocks is being added to increasingly. However the role of this modality of treatment in post laminectomy spine is not reported. We report the results of facet infiltration in 12 patients and 36 facets. Our results from this relatively small series show that facets may be responsible for a significant proportion of low back pain and radiculopathy in post operative spines.

Introduction

Lumbar facet joints are subjected to continuous stresses through out life and degeneration, reactive remodelling and hypertrophy often affect them. The relationship between facet joints and low back ache is well known. Facet pain from the L4 and L5 levels are referred to L1 and L2 levels segmentally and non segmentally via the dorsal root ganglia. Mechanoreceptors also cause pain perception in degenerated joints. Microtrauma of the facet joint can cause release of chemicals as well as direct inflammation of the exiting nerve root in the canal resulting in pain in the inguinal region as well as pain of the radicular variety.

Patients with persistent, recurrent or worsened symptoms following spinal surgery represent a challenging diagnostic and therapeutic group in any adult spinal surgical practice. Post laminectomy, patients can have persistent or new pain due to a variety of reasons. Induction of instability post laminectomy produces extra stress on the facets. We assessed the results of facet injection in 12 patients who had low back ache 3 months post laminectomy.

Methods

12 patients with 6 men and 6 women were treated from 2008 to 2009. The mean age of the patients was 43 years. The total number of facet joints injected was 36. the average follow up after the injection was 6 months. All patients had radicular pain with evidence of segmental instability. In all patients a 22 gauge spinal needle was used. The injection was carried out under image intensifier control with a mixture of lidocaine and dexamethasone.

In all patients the pre and post operative MRI were studied to identify the facet joint morphology at the laminectomy levels.

In all patients the injection was performed only once. The response to the facet block was analyzed according to a questionnaire given to the patient at the time of the injection; items included a self-rating assessment of the pain, duration, diurnal rhythm of the symptoms and frequency, subjective postinjection improvement and previous analgesic therapy, worsening of the symptoms over time, quality of life, and the pre- and postinjection degree of mobility.

Results

Out of the 36 facets injected, it was not possible to puncture 6 facet joints. This was due to narrowing and calcification. In these cases the joint was infiltrated at a pericapsular level. The results were classified on the basis of the following table.

<table>
<thead>
<tr>
<th>Outcome根据 patient-rated responses</th>
<th>Excellent</th>
<th>Complete relief of back &amp; lower-extremity pain; no further analgesics necessary; no pain during follow up of 6–12 mos</th>
<th>Good</th>
<th>Disappearance of lower-extremity pain, but not low-back pain; mild analgesics used</th>
<th>Fair</th>
<th>Partial relief of low-back pain and lower-extremity pain</th>
<th>Poor</th>
<th>No relief, unable to work; strong analgesic used regularly</th>
</tr>
</thead>
</table>

On this basis 3 patients had an excellent result, 2 each had a good and fair result. 5 patients had a poor result. We only witnessed one procedure related complication in a patient who experienced severe pain while his last facet was being infiltrated.

Discussion

In this study the group of patients that benefited from facet joint block contained mainly individuals with...
acute postoperative uncontrollable local and pseudoradicular pain. Although the lumbar facet joint as a source of low-back pain becomes more confusing the more clinical studies that are reported [4,5] the facet joint may be responsible for at least some degree of low-back pain with pseudoradicular and radicular radiation.[6,7,8]

Post laminectomy, the facet pain is sometimes supposed to arise from the contents of the facet capsule being emptied after inadvertent opening of the joint capsule. However in our case we had a 3 month post laminectomy period to exclude this type of pathology. Most of our cases were suffering from pain primarily due to facet arthritis or incomplete decompression. Preoperative stress radiographs where more than 22 degree angular change was observed were used as the basic inclusion criteria in these patients. The osteoarthritis alone is not the only cause of pain. Stress fractures, capsular tears and inflammatory arthritides of the facet joints have been suggested as causative factors. Facet joint arthritis develops slowly over a long period of time. This is partly because spinal degeneration in later life is the main cause of facet joint arthritis. Symptoms rarely develop immediately when degeneration is causing the problems. However, rapid movements, heavy twisting, or backward motions in the low back can injure a facet joint, leading to immediate symptoms. Typically hypertrophy and remodelling occurs in close proximity of delicate neurovascular structures.[9]

In all cases we used a scoring system including patients with as score higher than 60.

TABLE
1. Back pain associated with groin or thigh pain. 30 points
2. Reproduction of pain with extension rotation 30 points
3. Well localised paraspinal tenderness 20 points
4. Significant radiographic changes 20 points
5. Pain below knee -10 points

A score of above 60 predicted a 100% relief for a prolonged time Post laminectomy pain can be due to a multitude of reasons. This includes instability, inadequate decompression, infection, repeat herniation and iatrogenic injury. The role of the facet joints in post laminectomy pain has not been adequately studied in world literature.

Because the facet joint behaves similarly to a myofacial trigger point, the effect of a local anesthetic usually lasts longer than its pharmacological effect. Our results show that relief of a significant nature was obtained in up to 50 percent of the patients. The primary role of facet joint block is diagnostic. It can also be used as an additional therapy for suspected facet joint syndrome in patients in whom symptoms fail to respond to conservative treatments of lowback pain. Although our results for the symptomatic relief of pain have been roughly graded, we think it is mainly because of the nature of the disease. Our clinical impression is that this method is beneficial and warrants continuous application.

As operated cases of the spine present special problems, the relative safety of the procedure warrants use of this procedure in such cases.

References

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