Radiofrequency Medial Branch Neurotomy in Litigant and Nonlitigant Patients With Cervical Whiplash: A Prospective Study

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FROM ABSTRACT

Study Design.
The efficacy of radiofrequency medial branch neurotomy to treat cervical zygapophysial joint pain from whiplash was compared prospectively in litigants and nonlitigants.

Objectives.
1) To assess the effect of monetary gain on treatment of zygapophysial joint pain in cervical whiplash.
2) To determine whether radiofrequency medial branch neurotomy is effective treatment for whiplash.

Summary of Background Data.
The influence of litigation on treatment outcome is a subject of controversy in both the medical and legal professions. This is the first study to examine this issue in a prospective manner using a previously proven diagnostic and therapeutic method.

Methods.
Sixty patients with cervical whiplash who remained symptomatic after 20 weeks of conservative management were referred for radiofrequency cervical medial neurotomy.

The patients were classified as litigant or nonlitigant based on whether the potential for monetary gain via litigation existed. Each group underwent identical evaluation and treatment.

Patients were observed for 1 year. Visual analogue scores and self-reported improvement were obtained before, immediately after, and 1 year after radiofrequency cervical medial neurotomy.
Results.
Forty-six patients completed the study. The overall reduction in cervical whiplash symptoms and visual analogue pain scores were significant immediately after treatment and at 1 year. One-year follow-up scores were higher than immediate post-treatment scores. The difference between litigants and nonlitigants in the degree of symptomatology or response to treatment did not reach significance.

Conclusions.
These results demonstrate that the potential for secondary gain in patients who have cervical facet arthropathy as a result of a whiplash injury does not influence response to treatment.

These data contradict the common notion that litigation promotes malingering. [WOW!]

This study also confirms the efficacy of radiofrequency medial branch neurotomy in the treatment of traumatic cervical facet arthropathy.

THESE AUTHORS ALSO NOTE:

Radiologic examination of cervical whiplash syndrome is usually not diagnostic.

Symptomatic treatment of chronic whiplash often is ineffective.

There is skepticism related to chronic cervical whiplash because:

(1) pain is subjective and does not correlate with radiologic findings.

(2) a belief exists that patients with whiplash seek monetary or psychological secondary gain.


(1) 15% of whiplash patients suffer severe pain for 1–3 years.

(2) 26% - 44% of patients will develop long-term problems.


5% of whiplash patients develop chronic, unremitting pain.
43% of patients with cervical whiplash still had symptoms sufficiently severe to interfere with their ability to work 2 years after their injury.

31% still had symptoms and that 30 continued to have pain even after settlement of their case.

Technologic advancements with high-speed cinevideo radiography has shown that the zygapophysial joint can be injured during cervical whiplash.

Clinical studies have documented that the cervical zygapophysial joints are often the source of the neck pain after whiplash.

“Radiofrequency thermal denervation (RF) has been shown to reduce zygapophysial joint pain as treatment for cervical whiplash injury.”

Prospective, double-blind, placebo-controlled studies have established the effectiveness of RF ablation of the cervical medial branch nerves for relief of cervical whiplash pain arising from the zygapophysial joints.

“This study tested the hypothesis that the potential for secondary gain would cause the results of RF neurotomy to be inferior in litigants than in nonlitigants.”

This study additionally assessed the long-term effectiveness of RF lesioning of the cervical medial branches of the posterior primary ramus nerves in a post-traumatic population who failed conservative therapy.

METHODS

“All patients were involved in an automobile accident at least 20 weeks earlier and had failed conservative treatment, including but not limited to, physical therapy, chiropractic adjustment, medication management, trigger point injections, and ultrasound therapy.”

Included symptoms were neck pain, headache, shoulder pain, and/or upper arm pain.
Positive exam findings suggestive of facet pain included:

(1) Decreased range of motion.
(2) Neck pain on extension or extension and rotation to the affected side.
(3) Decreased neck discomfort on forward flexion.
(4) Tenderness over the ipsilateral facet joints.

These patients underwent diagnostic blocks of the cervical medial branch nerves of the posterior primary ramus (cervical medial branch) under fluoroscopic imaging guidance using the controlled two-phase diagnostic method. [The Gold Standard]

The diagnostic block was considered successful when the patient reported 80% reduction in symptoms.

Radiofrequency cervical medial branch neurotomy was then performed.

The nonlitigation group of patients had already settled their claims or had no possibility of further financial reward or chance for litigation.

These authors excluded more seriously injured patients, including those with:
(1) Cerebral concussion
(2) Thoracic, lumbar, or sacral pain
(3) Prior neck injury
(4) Prior cervical surgery
(5) Prior diagnosis of migraine headaches
(6) Prior history of substance abuse
(7) Radicular symptoms (radiculopathy or radicular pain)
(8) Those with evidence of a disc herniation compressing the nerve

Pain was evaluated using three variables:
(1) The visual analogue scale (VAS)
(2) Self-report of improvement (SRI)
(3) Pre-treatment and post-treatment medication use

The SRI is scored from 1 to 3:
(1) The results are good and I am happy with the results.
(2) I had hoped to be better, but I would repeat the procedure to obtain the same results.
(3) I am not any better and would not undergo the procedure again.

Patients completed follow-up questionnaires at 2 weeks after undergoing RF, and then monthly.
Examinations were performed before RF, 2 weeks after RF, and 1 year after RF. Patients who were asymptomatic for 1 year were followed annually thereafter.

All patients underwent the two-phase diagnostic cervical medial branch block procedure, 7 days apart.

Fluoroscopic image guidance is used for all diagnostic and RF procedures.

RESULTS

59 patients underwent the two-phase study and 9 patients did not gain 80% improvement from the diagnostic medial branch blocks. [9/59 = 15% apparently did not have primary or sole facet pain].

50 patients (32 litigants and 18 nonlitigants) underwent RF.

Twenty-one patients (14 litigants and 7 nonlitigants) reported recurrence of pain within 1 year. [21/46 = 46%]

Time to recurrence defined was 8.0 ± 2.0 months.

The SRI showed:
77% nonlitigants and 65% litigants had a score of 1.
22% nonlitigants and 31% litigants had a score of 2.
Zero nonlitigants and only 1 litigant had a score of 3.

Therefore, 97% of litigants and 100% of nonlitigants believed their results from RF to be satisfactory.

Following RF, there was a 52% reduction in the use of narcotics for litigants and 50% for nonlitigants.

Following RF, there was a 16% reduction in the use of NSAIDs for litigants and 71% for nonlitigants.

“The pre-RF to post-RF change in the VAS score was significant for litigants and nonlitigants.”

DISCUSSION

The authors “prospectively evaluated and treated two groups of cervical whiplash patients who were refractory to all previous conservative treatments.”
“The groups were similar in all manner except that one group could not litigate and another group was in active litigation or had the possibility to do so.”

The authors “found that both the nonlitigant and litigant groups responded similarly to RF treatment immediately post-treatment and at 1 year were only marginally different.”

“Radiofrequency cervical medial branch neurotomy markedly reduced the pain from whiplash in the study patients.”

At 1 year the combined reduction from baseline in VAS was still significant.

“To consider whiplash injury only as a secondary gain syndrome and deny treatment based on a presumption of malingering is a grave injustice to patients who have this syndrome.” [WOW!]

The literature supports the idea that chronic symptoms from whiplash are independent of litigation.

“The fact that litigants and nonlitigants both experienced significant and equivalent reductions in pain after RF refutes the contention that litigation exacerbates symptoms of whiplash injury.”

“An inevitable consequence that some physicians have drawn is that patients with whiplash syndrome suffer only from a ‘litigation neurosis’ rather than an organically based disorder. Our data do not support this conclusion.”

“Another bias has been that treatment resistance in whiplash syndrome is caused by psychological factors.” However, the “uniform response to treatment supports the contention that psychological problems were not a major factor either in producing symptoms or in modulating the response to treatment.”

The authors cite 7 studies to support the conclusion psychological problems, litigation neurosis or malingering are not the etiology of cervical pain.

“The subjective response to the SRI showed that both groups of patients were satisfied and believed their results sufficiently good to undergo RF again if necessary.”

“96% of the litigants and 100% of the nonlitigants would repeat RF for the same reduction in pain symptoms. This is an impressive response.”
“The study provides additional evidence that RF reduces pain originating from zygapophysial joint arthropathy because of the hyperextension–flexion injury of cervical whiplash.”

25 of these patients remained asymptomatic at 1 year. [25/46 = 54%]

CONCLUSION

(1) “RF is an effective treatment for zygapophysial joint pain in chronic cervical whiplash even when other methods fail.”

(2) “Litigation is not an etiologic factor in the genesis of pain in cervical whiplash injury and that treatment is not likely to be more or less effective in patients with pending or potential litigation.”

(3) “It may be true that people seek financial reward; however, they do not seek medical care for monetary gain. They welcome relief if it can be obtained, regardless of litigation status.”

Key Points

(1) “There is no statistical difference in medical outcome between litigant and nonlitigant whiplash patients.”

(2) “Radiofrequency medial branch neurotomy is an effective treatment for cervical zygapophysial joint pain in whiplash patients who have failed other forms of therapy.”