

CASE REPORT: MANAGEMENT of POST-SURGICAL CHRONIC LOW BACK PAIN with UPPER CERVICAL ADJUSTMENT.

by Kathryn T. Hoiriis

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ABSTRACT

Management of a case of chronic intractable post-surgical back pain of eight years duration is described. The condition, which had previously been unresponsive to both medical and other chiropractic treatment, responded positively to specific correction of the upper cervical subluxation as determined by objective and subjective outcome measurements.

Key Indexing terms: Upper Cervical, Chiropractic, Post-Surgical, Chronic, Low Back Pain, Subluxation.

CASE STUDY

On November 2, 1988 a 40 year old male Caucasian presented to the Sid E. Williams Research Center with the complaint of low back pain radiating into the right lower extremity. He had suffered from this pain since May 1977. Previous treatments by family medical doctors, chiropractors and surgeons had been unsuccessful.

Previous Medical History: In May 1968 the patient was involved in an automobile accident which resulted in fractures of the cervical spine and right patella. He was treated for fractures of C1 and C2 by traction and immobilization with Crutchfield tongs for six weeks. At the end of that period, alignment of the cervical spine was described as 1 to 2 mm of anterior displacement of C-2 relative to C-3. The patient was discharged for outpatient care July 11, 1968 wearing a four point pillow brace to his neck and utilizing crutches for walking without a cast.

Three months after the accident the patient was re-examined. Lateral flexion in the cervical spine was reported at 30 degrees bilaterally, forward flexion was 30 degrees and rotation was 25 degrees bilaterally. These values represent reduced ranges of motion. X-ray examination of the lateral view as well as flexion and extension views showed no evidence of displacement of the previous fractures.

Another follow-up examination was performed on October 9, 1968. At that time there were no symptoms and the X-ray examination revealed no change in the C-2 body anterior displacement of 1-2 mm. Progress notes from January 1969 reported recovery sufficient to allow the patient to return to work and be dismissed from treatment. X-ray examination revealed good healing of the fractures, no loss in joint space and good alignment.

The patient reported no significant health problems until May 1977 when he began to experi-

ence low back pain which gradually worsened over the next two years.

As a result of the worsening pain, the patient underwent myelography in October, 1980 which demonstrated bulging discs at L3-4, L4-5 and L5-S1. Examination findings at that time included positive leg lowering test bilaterally, decreased sensation in the right great toe, tenderness on palpation in the lumbosacral joint and bilateral paravertebral muscle spasm at the L4-5 joint area. Laminectomies of L4, L5 and S1, and associated partial L4-5 and L5-S1 discectomies were performed in November, 1980. Post-surgical x-ray examination revealed normal disc spaces and no acute process in the lumbosacral spine.

Current Medical History: The chief complaint in November 1988 was described as bilateral postero-medial pain in the lower lumbar spine which radiated pain to the right postero-lateral hip, thigh, knee, leg and fifth toe. Additionally, paraesthesia of the great toe was reported. The pain, which had begun gradually in May 1977, had worsened to the point that it interrupted sleep. The pain was exacerbated by standing, lifting and/or carrying more than 50 lbs., twisting the torso and sneezing. Some relief from pain was achieved by walking and by elevation of the feet while lying supine. The patient reported lost time at work and had noted a 25 pound weight gain due to inactivity.

On physical examination, superficial scars were noted from L3 to S1 and over the right knee. Cervical motion was reduced in all directions:

flexion - 60 degrees
extension - 20 degrees,
right lateral flexion - 30 degrees
left lateral flexion - 20 degrees.
rotation - 25 degrees in both directions

Pain was elicited at the occipital/atlas level on lateral flexion and at the level of C3 on rotation. The foraminal compression test was positive, producing pain at the level of C3 in both the straight and leftward flexed positions.

The ranges of motion of the thoraco-lumbar spine were also reduced:

- flexion - 60 degrees
- extension - 10 degrees
- right lateral flexion - 15 degrees
- left lateral flexion - 15 degrees
- right rotation - 30 degrees
- left rotation - 25 degrees

Rotation to the left produced pain at the L4-L5 level. The patellar reflex was diminished on the right. The following orthopedic tests were found positive with pain at the L4/L5 level:

- Laséque's right
- Lewin Gaenslen right
- Leg Lowering bilaterally

- Iliac Compression on right
- Fabere Patrick on right
- Adams' Sign, right side high
- Goldwaithe's, L4-L5
- Kemp's Sign left-sided pain in lumbar and S-I Advancement bilaterally

The chiropractic examination revealed the following listings: C2 BL, T3 PLS, T6 PLS, L1 PRS, Sacrum SAR. Tenderness and spasm of the paravertebral musculature was noted bilaterally from levels L1 to L3. A leg length deficiency of 6 mm. was found on the left side with the patient lying supine. A Cervical X-ray examination was performed, including lateral, nasium, vertex and A-P lower cervical views. The films revealed hypolordosis of the cervical spine, anterior spurring at C2-3 and contrast media remnants in the region of the sella tursica. Radiographic analysis revealed C1 left laterality of 4.5 degrees with anterior rotation of 3.5 degrees on the left.

CHIROPRACTIC CARE

The patient was given upper cervical adjustments along a specific vector determined by the Life Cervical X-ray analysis technique. The adjustments were delivered either by hand or with an adjusting instrument. The leg length deficiency was used as the primary indication that an adjustment was needed at any particular visit. Follow-up radiographs, taken after the 13th and 18th visits, were used to assess the effectiveness of the care in correcting the atlas

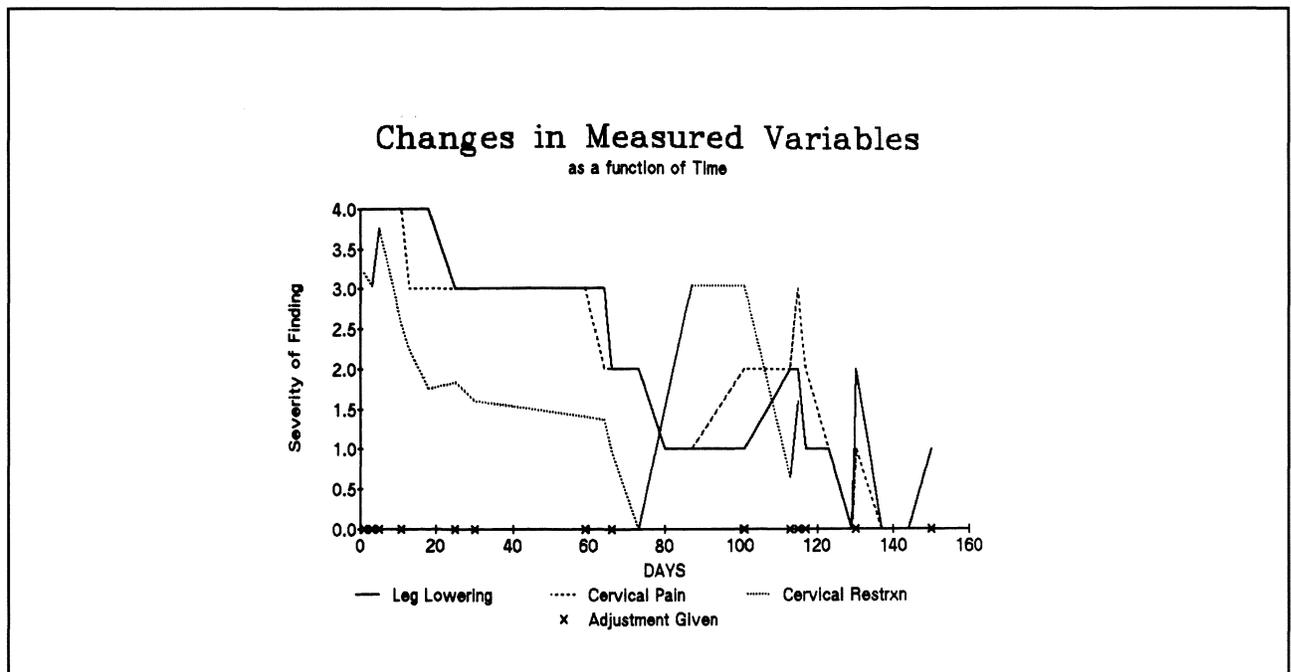
misalignment.

Orthopedic tests were monitored at each visit by an assessor blinded to the patient's treatment. The test results were recorded as being either positive or negative along with an assessment based on the discomfort reported by the patient while performing the tests.

RESULTS

As the treatment progressed there were fewer tests recorded as positive. The test which had the most impact on the patient was leg lowering which remained positive longer than the other tests.

As a graphic representation of the patient's progress, the results of the cervical range of motion, cervical pain on movement and leg lowering tests were plotted against time. Along with this information, Figure 1 also shows the days on which the subject was adjusted.



So that the measured values for each of the three plotted variables could be represented on the severity axis, separate rating scales, all ranging from 0 to 4 were created for each. The recorded values represented by the Y-values for each variable are as follows:

Leg Lowering

- 4 sharp severe lingering pain, cannot hold up the legs
- 3 moderate pain, cannot hold up the legs
- 2 moderate pain, but can hold up the legs
- 1 mild pain while holding up the legs
- 0 no pain while holding up the legs

Pain on Cervical Movement

- 4 pain on flexion and extension
- 3 pain on extension only
- 2 moderate pain on extension
- 1 slight pain on extension
- 0 no pain on flexion or extension

Restriction of Cervical Motion

- 4 - 3 70° - 82° from fully flexed to fully extended
- 3 - 2 82° - 95°
- 2 - 1 95° - 107°
- 1 - 0 107° - 120°
- 0 120° motion

As can be seen from Figure 1, all three measured variables showed improvement over the course of care. Cervical motion was the first to improve, followed 5 days later by a decrease in pain on cervical movement. Improvements in the cervical tests were followed 5-10 days later by improved performance of the leg lowering test. There was an exacerbation of symptoms and findings around day 80 of the study. Again, the changes in cervical symptoms preceded by several days the changes in low back symptoms.

The radiographic analyses used produced two misalignment factors: laterality and rotation. The initial listings were 4.5 degrees of left laterality and 3.5 degrees anterior rotation.

The final radiographic study and analysis showed that the patient's subluxation had been reduced to 0.5 degrees left laterality and 1.75 degrees anterior rotation. This represents a 90 percent reduction in the laterality factor of the misalignment and a 50 percent reduction in atlas rotation.

DISCUSSION

During the initial consultation it was found that the patient had suffered cervical trauma prior to the development of low back pain; he was also suffering from suboccipital pain at the time of examination. Since the low back symptomatology had been previously addressed directly and unsuccessfully, a care plan including only specific upper cervical adjustments was chosen. Radiographical analysis of the cervical films, the physical examination and chiropractic examination findings supported the care plan.

The patient's positive response to upper cervical chiropractic care suggests that, in this case, the back pain was somehow related to the cervical subluxation, especially considering the chronicity of the problem. Indeed, chiropractors, using exclusively upper cervical procedures have been providing care for patients with low-back pain for over 50 years (1,2,3). Even though there are numerous anecdotal successes of upper-cervical care used to resolve low-back pain, and some small retrospective studies (4) which indicate a high degree of success, to date, there are no published studies relating low back pain and upper cervical care.

Several mechanisms explaining how upper cervical misalignments could produce low-back pain have existed for some time. Two of the most important of these are the proprioceptive insult hypothesis (5) and the dentate ligament - cord distortion hypothesis (6). The latter hypothesis provides a mechanism by which structural misalignments of the upper cervical spine can be translated into mechanical and vascular irritation of the spinal cord, especially the spinothalamic and spinocerebellar

tracts (type A fibers) which may affect the balance in muscle tone and joint position sense of the lower spine and extremities (7). Based on an analysis of this mechanism, Grostic proposes that it is possible to calculate areas of high stress from the rotational and lateral misalignments of the atlas with respect to the occipital condyles and with respect to the axis. He further hypothesizes that reduction of the stress on the cord, achieved by reducing the osseous misalignments of the upper cervical area, should be correlated with improvement in low-back pain.

In the case presented here, both conservative and surgical treatments at the lumbar level had been unsuccessful in alleviating the patient's low back pain. In the literature, the failure rate of low-back surgery varies. In one study, Surin (8) observed no positive effect of surgical treatment when considering the duration of disability of a group of patients following lumbar disc surgery. Other researchers, on the other hand, have found lumbar surgery to be successful in as many as 3 out of 4 cases, depending on the type of surgery performed (9).

In cases where direct attention to the lumbar spine, either conservative or surgical, has not produced beneficial results, some other underlying problem might exist that mimics a low back disorder. One contribution to failed low back surgery is unrecognized S-I syndrome causing buttock and leg pain which is difficult to differentiate from pain originating in the lumbar spine (10). The case presented here suggests that another hidden cause of low back pain might be upper cervical subluxation.

CONCLUSION

A case study is presented in which a patient suffering from post-surgical low back pain was successfully treated with upper cervical adjustments. The chronicity of the condition, the past history of

cervical trauma as well as the cervical radiographic findings pointed to cervical subluxation as a possible contributing cause of the patient's low-back pain. The success of the treatment supported this

diagnostic analysis; it further suggests that complete screening of low-back patients should include evaluation of upper cervical structural alignment. Where

indicated, cervical adjustment should be incorporated into the conservative management regime for low-back pain.

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