

Case Study:
**Cox® Technic Flexion Distraction and Decompression
Treatment of Osteoporotic Thoracic Kyphosis and Pain
Syndrome Following Percutaneous
Polymethylmethacrylate Vertebroplasty**

submitted by
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INTRODUCTION:

This case is a representation of an increasingly common type of challenge that chiropractors are encountering and a demonstration of how the synthesis of clinical examination, diagnosis and successful treatment technique combine to help these patients who seek our care. With flexion distraction procedures and treatment, this patient can enjoy a higher quality of life despite this persistent condition.

BRIEF CLINICAL HISTORY:

The above named 87 year old female was seen in this office for diagnosis and treatment of thoracolumbar back pain. She stated this problem had been ongoing for two months following a vertebral fracture in the thoracic spine. She had vertebroplasty of T11 and physical therapy without relief. Her past medical history includes thyroid disease with subsequent metabolically accelerated osteoporosis.

EXAMINATION:

This patient presented with an unsteady gait with an advanced thoracic kyphosis, Dowager's hump, gibbus and camptocormic posture. Active and passive ROM were severely limited if not absent from C7-T12. Notably there was an inability for this patient to activate erector spinae musculature while prone on the exam table. Spinal percussion elicited pain on the spinous processes of T5-12. The deep tendon reflexes, muscle strengths, and dermatomal evaluation of the upper and lower extremities were within normal limits. Initial x-ray evaluation of the thoracic spine revealed a 78 degree thoracic kyphosis, osteoporosis, degenerative spondyloarthropathy, and compression fracture with vertebroplasty of the T11 vertebra.

IMAGING STUDIES:



Advanced thoracic kyphosis



Pre-treatment 78 degree kyphosis (note vertebroplasty)



3 month post-treatment 68 degree kyphosis

DIAGNOSIS

Impression:

1. Osteodegenerative thoracic kyphosis (post-PPV)
2. Osteoporotic pain syndrome

TREATMENT

Treatment Goals:

The initial treatment goals were to relieve the pain, stiffness, and improve ambulation while gradually increasing the patient's activities of daily living (ADLs). This patient was told that if she had not improved 50% within 4 weeks that she would be referred to another physician.

Treatment Methods:

This patient was treated with thoracolumbar spine long Y axis distraction with range of motion to tolerance (protocol I) utilizing the Cox® Table caudal section hand-held at lower extremities (without restraints), consisting of three 20-second long Y-axis distraction applications. Each 20-seconds consisted of five 4-second pumps. Distraction included decompression of the entire thoracic and lumbar spine. During this adjustment, cavitation was often heard and felt by doctor and patient alike. This patient received a 5 minute massage of thoracolumbar spine prior to the distraction to facilitate a decrease in muscular tonus and resistance. She was fitted with a soft figure eight posture support which she wore continuously for the first month. Thereafter it was used only during heavy activities of daily living (ADLs) of painful episodes. Exercises were instituted immediately to strengthen the erector spinae musculature and reduce the kyphosis. Postural awareness training was given to both the patient and spouse in order for him to help at home. She was given 1500 mg/d calcium supplementation (Cal Ap/Mag). She received 2 treatments per week for 3 months. In the fourth month she was seen 2 times per month. She continues as of this writing to be seen every three weeks for maintenance care.

Treatment Outcomes:

Treatment resulted in progressive relief of the thoracic spine pain for the first three months. Thereafter the pain has stabilized at approximately 75% overall improvement. Follow-up lateral thoracic film suggests a 10 degree postural correction. There was no iatrogenesis or increasing of patient pain with the procedures outlined here (with the possible exception of muscle pain from the extension exercises).

DISCUSSION

Osteoporotic vertebral compression fractures may cause debilitating pain that lasts for weeks or months, and which is often neither quickly nor completely relieved by conventional conservative therapy. Patients seeking medical attention are often prescribed NSAIDs, given physical therapy, osteoblastic promoting medications, and/or oral or injectable steroid therapy. While steroid therapy may bring rather quick temporary relief, it promotes osteopenia and should be considered contraindicated. Other medical treatments which are showing success

include percutaneous polymethylmethacrylate vertebroplasty (PPV). Several studies have suggested significant and nearly immediate pain relief, as well as rapid and sustained functional recovery, after (PPV). (1-4)

Vertebroplasty is an efficient treatment of vertebral collapses of malignant or benign origin but also carries a risk of complications. Cement extravasation is a frequent occurrence in vertebroplasty. It is well tolerated in the large majority of cases but is also the main source of complications especially nerve root compression in case of cement leakage into the intervertebral foramen and pulmonary embolism of cement complicating venous cement leakage. The rate of these complications are much higher in malignant than in osteoporotic collapses. The risk of neurological complication also increases at the cervical level. In addition, incidence of new vertebral fractures in adjacent vertebrae may be increased by vertebroplasty. (6) Interestingly, radiological follow-up observation at one year revealed new compression fractures in about one-third of patients. More than half of these new compression fractures occurred in adjacent vertebral bodies within 3 months of PVP. (5)

Most chiropractors consider osseous manipulation (HVLA) of the fragile post-fracture, osteoporotic spine to be ill-considered if not an outright contraindication. Therefore, those patients seeking chiropractic care often receive gentle massage therapy, hot packs and exercises. This case study suggests that this type of spinal condition may be significantly improved without compromising the patient's safety utilizing the described treatment techniques and ancillary recommendations. Flexion distraction has gained increased credibility as a therapeutic modality for treatment of spinal pain. It is one of the most widely used techniques in chiropractic and is used strongly in intervertebral disc derangements, stenosis as well as simple back pain. This is another example of the effective use of Cox® Technic for thoracic compression fracture, osteoporosis and persistent pain syndrome. Cox Distraction is both safe and effective as the treatment of choice among the myriad of treatment options available, and particularly so when the treatment options are restricted due to complicating factors. This is an excellent example of the benefit of Cox® long Y axis decompression. Diversified adjusting in opinion could not be given to this case without iatrogenesis (to the patient or to me!).

References

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