

Magnetic Resonance Imaging Evidence of a Reduction in Disc Herniation Using a Combination of EDTA Chelation and Joint Reconstructive Therapy

**C.J. Rudolph, DO, PhD, FACAM and
E.W. McDonagh, DO, ACGP, FACAM**

ABSTRACT: A 44 year old white, partially disabled, female patient presented with lumbar discopathy. She was treated with a combination of joint reconstructive therapy, using proliferating solution, and intravenous chelation therapy, consisting of a series of 3 gram infusions of ethylene diamine tetracetic acid (EDTA), accompanied by orally administered multivitamins and trace minerals. After treatment, the patient's abnormal disc protrusion was reduced 60%, from 5 mm to 2 mm as demonstrated by pre- and post-treatment Magnetic Resonance Imaging (MRI) studies. The patient is symptom free 6 months post therapy.

Introduction

This continues a series of papers analyzing the effects of intravenous ethylene diamine tetracetic acid (EDTA). In previous papers the main focus has been on improvement in circulation in the carotid arteries (1-3), the lower extremities (4), and in functional cardiac improvement as measured through sub-maximal treadmill testing (5,6). In treating the patients that were subjected to these studies, it was noted that patients with vascular disease and concomitant degenerative arthritis usually commented about improvement in their arthritis. This improvement seemed to occur in about one third of the

Dr. Rudolph is a partner and co-owner of McDonagh Medical Center, 2800-A Kendallwood Parkway, Kansas City, Mo. where Dr. McDonagh is co-owner and founder.

Address correspondence to Charles J. Rudolph, D.O., Ph.D., McDonagh Medical Center, Inc., 2800-A Kendallwood Parkway, Kansas City, Missouri 64119.

time that it took to affect improvement in their vascular occlusive problem.

Although EDTA chelation was initially helpful in arthritis, most patients were found to need "booster treatments" at intervals of 3 to 4 months. This was perhaps due to the removal of microscopic calcium from the joints without addressing the problem that caused the calcification in the first place, namely joint instability and weakness. Then proliferative therapy was added to the treatment regimen.

Proliferative therapy, also known as injection therapy, sclerotherapy, prolotherapy and joint reconstructive therapy, are names for a technique that involves the injection of an irritating substance into the ligaments and tendons (7). The irritating solution then causes fibroblastic proliferation, resulting in strengthening of the ligamentous bony attachments. Repeated injections, given over a period of time, causes the treated joint to resume its normal stability. Stabilization by osteoarthritic bridging becomes an unnecessary pathophysiologic response.

This combined use of EDTA chelation and joint reconstructive therapy may be a powerful tool in the long term treatment of degenerative joint and disc disease and is the focus of this paper.

Case Report

A 44 year old white female patient presented to our clinic with a history of disc rupture at L5-S1. She had previously had surgical intervention in 1988 for the herniated disc, however surgery was only minimally successful and recurrence of the herniation resulted in recurrence of pain almost immediately. When first seen at this clinic in March 1991, she had severe pain radiating down the left leg and was able to ambulate only with the use of a push-along walker. She received no concomitant therapy other than that provided by this institution, and excellent results were obtained. Currently she has no restrictions of locomotion, nor does she experience any pain. Studies by MRI were obtained both before and after our treatments and were performed on a General Electric Signa Advantage MRI Imaging instrument.*

After the initial examination, the patient received a course of 21 infusions of intravenous EDTA, together with multivitamins and trace mineral supplementation according to the protocol of the American Academy for Advancement in Medicine (8). In addition, the patient received 14 injection treatments, each consisting of multiple small injections into the ligamentous structures surrounding the paraspinal muscles of the lower dorsal and lumbar spines over a period of 12 months. Each injection consisted of infusing

*Medical Imaging Center, 16 W. 30th St., Kansas City, Missouri 64108.

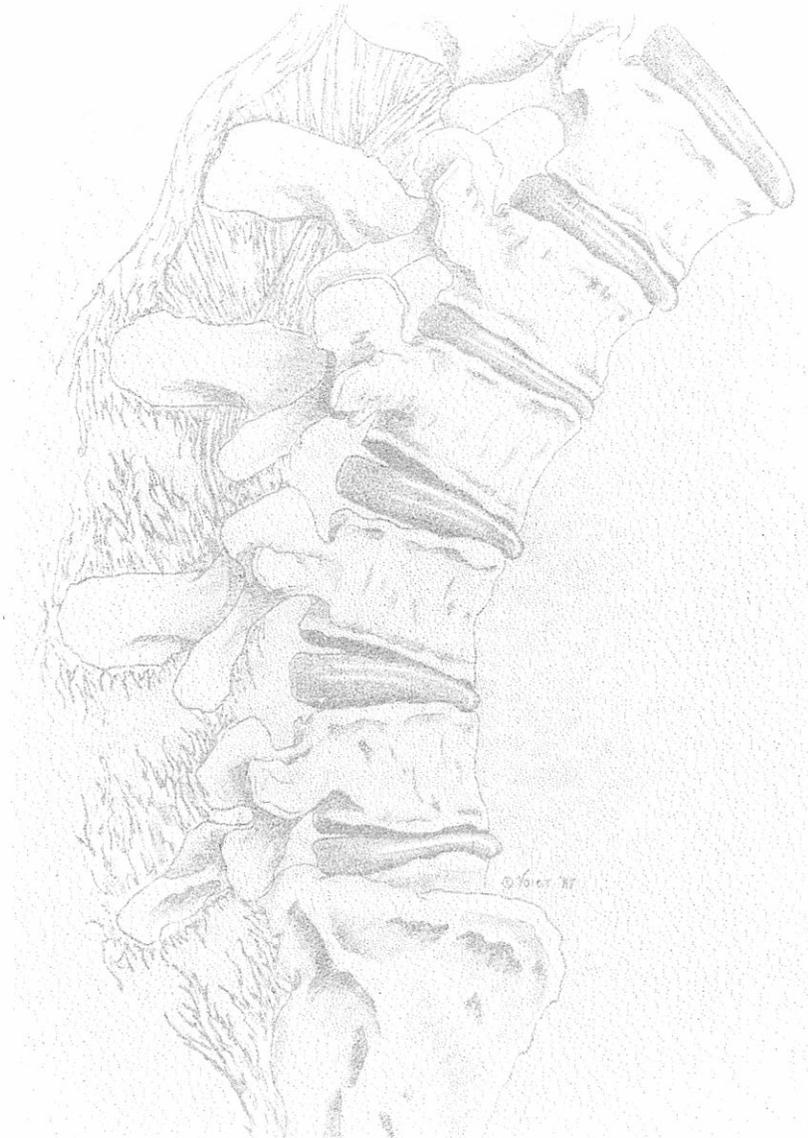


FIGURE 1a

Artist's conception of damaged ligaments in an unstable lumbar spine.

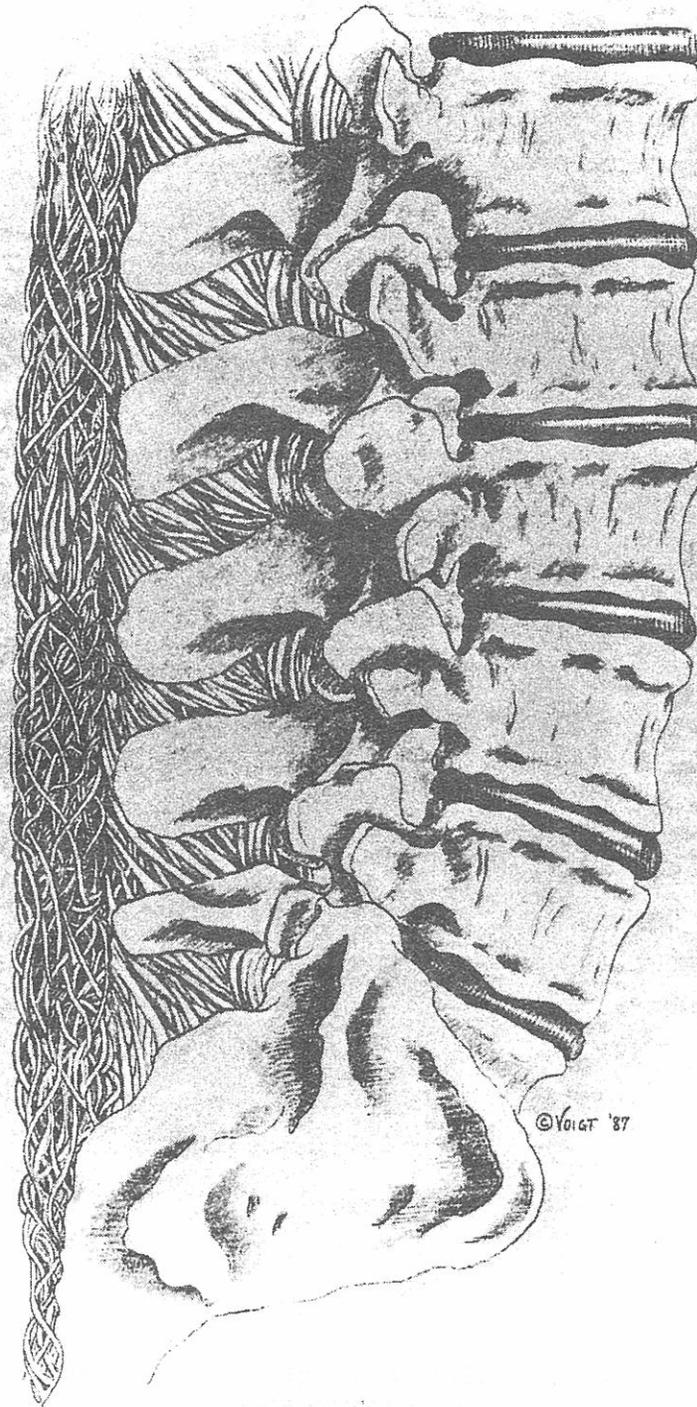


FIGURE 1b

Artist's conception of reconstructed ligaments and a stabilized lumbar spine.

10.0 ml. of the sclerosing solution which consisted of 2.0 ml. of 10% calcium gluconate, 2.0 ml. of 2% lidocaine and 6.0 cc of bacteriostatic water.

Results

Figures 1a and 1b represent an artist's depiction of what is occurring with the injection of proliferating solution. Figure 1a represents ligaments that are broken down from years of stress to the affected area, in this case the lumbar spine. After the series of injections is completed, the fibroblasts normally in the connective tissue migrate to the injected ligaments/tendons and "proliferate" causing a strengthening of the connective tissue as depicted in figure 1b. Theoretically the added strength should stabilize the back and reduce the disc protrusion.

Data from the MRI are shown in Figures 2a and 2b. Figure 2a represents the pre-treatment examination and figure 2b the post-treatment examination. After examining the entire study, the midline saggital view focusing on the lower lumbar spine showed the best view of the disc. The arrow delineates the disc in each image on the figures. When the film was measured initially, the disc was found to protrude about 5 mm into the spinal canal. After treatment, the disc protruded 2 mm into the spinal canal. This represents a reduction of approximately 60%. Strengthening the ligaments has re-established joint spacing between vertebrae and eliminated nerve root impingement. As a result, the patient is fully functional and pain free.

Discussion

In the treatment of disorders of the lumbar spine involving a combination of osteoarthritis and disc pathology, the treatments are usually of extremes. The first extreme is the conservative or "essentially do nothing" approach. Whereas this may be acceptable for a patient with mild symptomatology, the moderately to severely symptomatic patient is usually not helped. On the other extreme we find surgical intervention which, as with any major procedure, is not without risk and can always, as in this case, recur (9). Another technique involves injecting the disc with an enzyme, usually chymopapain (10), but this technique is not always successful and does nothing to strengthen the back to prevent recurrence.

A sounder approach would be reconstructive injection therapy to



FIGURE 2a

L5-S1 disc in patient prior to therapy showing a 5 mm protrusion.



FIGURE 2b

L5-S1 disc in patient after therapy showing a 2 mm protrusion.

stabilize the back by rebuilding the weak ligamentous structures. The use of such a technique dates back to Riddle in 1932 who first reported on the use of this therapy (11). Studies in the late 1950's (12,13) demonstrated the effects of proliferating agents on connective tissue. Rice showed that by inducing a mild inflammatory response in the connective tissue, there would be growth of new connective tissue (14). Hackett demonstrated that after as few as three injections with proliferating agents, a 30 to 40% increase in tendon diameter could be achieved at their bony attachments (15). Faber reported on the ability of using reconstructive therapy for patients with low back pain (16) although he stops short of recommending it as a therapy for individuals with radiographically demonstrable herniated discs. Chappell reported a study on the use of this treatment in 57 patients with ligamentous disorders of the cervical, dorsal and lumbar spines, shoulders or knees (17).

McDonagh and Rudolph (18) have reported on the synergism that occurs when combining EDTA chelation therapy with joint reconstructive therapy. Remarkable improvement was observed in patients with severe incapacitating joint disease of long duration. All patients returned to normal, pain free function. The number of sclerotherapy injection treatments was drastically reduced from that which would be expected, according to the published medical literature (16).

To our knowledge, this is the first article in which a combined use of EDTA chelation therapy and joint reconstructive therapy have been used successfully in a radiographically demonstrable herniated disc. The patient was symptom free at the conclusion of therapy. Additionally the disc had been reduced from a protrusion of 5 mm to 2 mm. The patient has been followed for six months and at the time of this writing has suffered no recurrence of symptomatology.

An interesting observation came from the insurance carrier for this patient. They refused to pay for the treatment provided because this was considered to be "a surgical problem and cannot be helped with anything but surgery". It is interesting how the insurance company totally disregarded the results obtained in spite of it being much less expensive and traumatic to the patient.

Conclusion

Lumbar disc disease affects many individuals in this country annually and it is estimated that about 15% of all people seeking the ser-

vices of a family physician do so for reasons that are orthopedic in nature (7). It may well be that injury, while associated with a low mortality, can also cause great disability and be responsible for an extremely high number of work days lost. With today's escalating, if not astronomical, health costs, it is reassuring that there exists a therapy that has a three-fold potential for helping the American worker. This technique is a relatively low-cost alternative therapy for low back problems. Because of its comparatively low cost, it helps to keep down costs to insurers, and therefore to employers. It solves the acute problems associated with low back pain and strengthens it, making the problem less likely to recur.

The beneficial effects of chelation therapy on arthritic joints performed in association with joint reconstructive therapy, provides therapeutic benefits which exceed those achieved with each technique administered alone.

Acknowledgements

Figures 1a and 1b were from Faber WJ, Walker M: Pain, Pain Go Away. San Jose, California, SHI Press International, 1990, and reproduced with permission.

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