

PROLOTHERAPY CREATES CLOT NEAR INJURY

Alternative to Surgery for Ligament Repair

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NASHVILLE, TENN. — You may feel at times that your office has a revolving door for patients who have serious ligament injuries that seem destined to require surgical treatment.

If so, learning how to perform prolotherapy can radically change your role in treating those patients, said Dr. Tom Ravin, a prolotherapist in Denver who specializes in orthopedic medicine and musculoskeletal injuries.

Prolotherapy is the act of creating a blood clot near an already injured ligament-bone junction to stimulate the body's natural healing process.

The technique has been used to treat conditions such as sprains in the wrist or ankle, chronic low back pain, shoulder pain, and even headaches caused by ligament laxity in the cervical spine.

A limited number of clinical trials have shown that the treatment works, Dr. Ravin said at the annual meeting of the American Medical Society for Sports Medicine.

The traditional primary care approach has been to relieve chronic pain caused by associated muscle spasms, instead of treating the underlying ligament strain, he said.

Enter prolotherapy.

In essence, prolotherapy reinjures the injury site to give the body a second shot at healing. That's achieved with an injection of a proliferant agent. Dr. Ravin uses a concentrated solution of glucose, glycerine, and a small amount of phenol, but other agents,

to move beyond its normal range of motion, which can then lead to pain, numbness, tingling, or painful muscle spasms.

If the healing process did not work the first time, why would it work the second time? There are reasons the healing process may have failed, and those factors can be controlled, Dr. Ravin explained.

Although prolotherapy aims to reinjure the area less traumatically than the original accident, it's still quite painful, said Dr. Ravin, who has undergone the procedure several times for his knee and back.

To a certain degree, pain and inflammation are necessary evils in the healing process. The fibroscous junction is a tender region, he noted.

Infection or other complications can occur but are rare. Some deaths from prolotherapy have occurred, but none has been reported in the last 25 years.

Only a handful of controlled clinical trials have evaluated the technique. That reflects in part a lack of funding for studying the treatment. And it has been difficult to design a study with a good control group, he added.

In a landmark study, 81 patients with chronic low back pain were randomly assigned to receive spinal manipulation along with injections of a proliferant solution of dextrose, glycerine, and phenol. Patients in the control group received a parallel treatment consisting of less extensive local anesthesia and manipulation and use of saline as a mock proliferant.

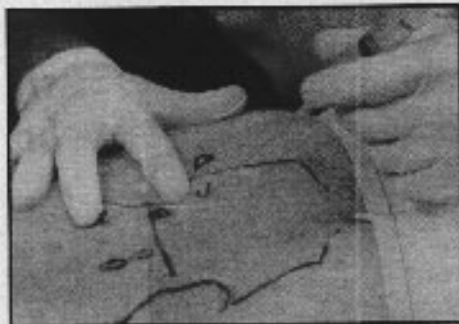
After 6 months, 35 of the patients who received prolotherapy reported a 50% or greater reduction in pain, compared with 16 control patients. Fifteen patients in the prolotherapy group were free from disability, compared with four in the control group (*Lancet* 2[8551]: 143-46, 1987).

In another study, 79 patients with chronic low back pain who had not responded to conservative treatment were randomly assigned to receive injections of Xylocaine plus a proliferant or Xylocaine plus saline solution. Again, 30 of the 39 patients in the prolotherapy group reported a 50% or greater reduction in pain at 6 months, compared with 21 of 40 control patients (*J. Spinal Disord.* 6[1]:23-33, 1993).

Despite the dearth of data, physicians who do prolotherapy tend to be diehard believers in it, Dr. Ravin said.

In a small, uncontrolled, follow-up study of 25 patients who received treatment in his practice for shoulder problems, about 60% said they were still 100% recovered after 3 years.

For many of those patients, he said, physical therapy had become a way of life, and now they don't need it at all.



Courtesy Dr. Tom Ravin

During a low back injection, the needle is directed toward the lower sacroiliac ligament, which is the most common location for prolotherapy procedures.

such as sodium morrhuate can be used. Injected at the fibroscous junction under local anesthesia, the proliferating agent stimulates prostaglandins, the messengers of inflammation.

When someone suffers a ligament injury, such as a sprain, the collagen fibers of the ligament become torn or stretched. In normal healing, the site becomes inflamed, and that triggers an invasion of macrophages that break down and clean out damaged ligament tissue. Growth factors then stimulate the development of new blood vessels, intercellular matrix, and fibroblasts. The ligament becomes taut during this healing process.

"This process works about 99% of the time," but sometimes it fails and the ligaments remain lax, Dr. Ravin said.

Loose ligaments are a problem because they allow the joint

Physicians can learn to practice prolotherapy in about 200 hours, said Dr. Ravin, who teaches several seminars each year. For information, call him at 303-331-9339. The American Association of Orthopedic Medicine also offers courses. For information, call the association at 800-992-2063.