



The Study Of Ligamentous Tissue Is Regarded As Key To Sclerotherapy

... by Simon Green, D.O.

INTEREST in joint sclerotherapy continues to increase and enthusiasm for this work is spreading. With increasing knowledge of this subject and with postgraduate teaching programs, we have been able to broaden the entire scope of sclerotherapy. The general public has become more aware of this specialty through articles that have appeared in the lay press and, over all, this form of therapy has reached important proportions.

Ligamentous tissue, including the capsule of a joint, is the key to joint sclerotherapy. Whether the ligaments are those of the ankle, knee or shoulder or those which help to stabilize the sacroiliac joints, or are the capsular ligaments of the articular facets of the vertebral column, they are all capable of responding to this form of treatment. The more we think of ligaments and their physiology, the better will be our appreciation of this entire subject.

In considering the treatment of the lumbar syndrome, emphasis should be placed on the supporting structures of the sacroiliac joints as well as the zygapophyseal joints

with their respective ligaments. The sacroiliac joints are held together by the anterior sacroiliac ligaments and the long and short posterior ligaments. The anterior ligaments are not approachable for sclerotherapy, whereas the posterior ones can be treated. Following various traumata, both mild and severe, the ligaments either tear or become relaxed due to stretching, resulting in hypermobilities and instabilities. Other sprain mechanisms may be the causative factors in low back problems.

When the intervertebral disk becomes degenerated, it is detected by conventional X-ray examination as a narrowing of the intervertebral disk space. The capsular ligaments of the lesser arthrodials become relaxed and set up a mechanism that causes pain in the lumbar area. In my opinion, a large proportion of all low back syndromes are due to relaxation of the ligaments of the various joints. When sclerotherapy is used, the overstretched ligaments become thicker and shorter, thus strengthening the supporting structures of the joints. Practically all of the motion in the spinal area occurs at the zygapophyseal joints and not at the vertebral bodies. Therefore, if the ligaments of these joints are relaxed and sclerotherapy can strengthen them, then this treatment will clear up the painful syndrome.

From recent observation in treating the low back problem, particularly when pain is aggravated on sitting or standing, I feel quite certain that much of the pain is due to a drag on the ligaments of the articular facets. For example, when pain is present while sitting,

and disappears on reclining, the ligaments are involved. Pain is brought about by a pulling or traction type of mechanism, or by pulsion, which is the reverse of traction. Whichever type mechanism is present, be it traction or pulsion, pain is the chief presenting symptom. It is a well known fact that pain fibers are found in the ligaments, but are absent in cartilage. When nerve root pain results from actual retropulsion of the intervertebral disk, the mechanism of the cause of pain differs from that of the ligaments alone. In disk pathology with protrusion of nuclear material, pain is due to nerve root pressure giving radicular symptoms usually with sciatic syndrome.

An example of low back pain resulting from ligamentous relaxation is afforded by the following case: A forty year old male patient was referred by Dr. H. K. The patient's chief complaint was low back pain that had been in existence for three weeks. The pain was accompanied by a severe sciatic syndrome affecting the left lower extremity as far down as the ankle. The patient had been confined to bed during this period and was unable to sit up because of the pain. Standing would also aggravate his symptoms. Traction at home was without avail, and the use of a back brace did not alleviate the condition. Examination revealed areas of anesthesia and paresthesia in the left lower extremity. Circumference of his left leg at the calf was one-half inch less than at the same level of his right leg. Tenderness was present at the level of the fifth and the fourth lumbar vertebrae

in the mid-spinous line. Reflexes of the lower extremities were within normal limits. Accordingly, we made a diagnosis of a discogenic syndrome involving the fourth and fifth lumbar levels. X-ray examination revealed subluxation of the arthrodials of the fourth lumbar, and also narrowing of the intervertebral disk space between the fifth lumbar vertebra and the sacrum. Sacralization of the fifth lumbar vertebra was also present. Treatment consisted of joint sclerotherapy to the affected levels. Improvement was rapid when we treated the sacroiliac joints and the facets of the lumbosacral joints. However, pain persisted to a lesser degree and it was not until the arthrodials of the fourth lumbar vertebra were treated, that the patient's symptoms cleared up completely. He received a total of twelve treatments with a sclerosing agent. He has made a complete recovery and has been asymptomatic now for about five months. He has assumed normal duties and can do a full quota of work.

The above named case is one of a number of similar cases treated in my office in the past year and represents a type that might be designated as "articular facet syndrome" or perhaps "lesser arthrodial syndrome." The classical symptom is pain while sitting or standing, which disappears, or at least lessens, on reclining. Pain is so severe while sitting that the patient will seek a reclining position at all times. He is somewhat relieved by walking, but is restless in doing so. Response to sclerotherapy may be a bit slow, but the patient recovers completely.

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In order to pin-point the site of trouble, a thorough survey is of the greatest importance. Subluxations, which can usually be seen on oblique views, are common findings, and these subluxated joints can be treated with sclerotherapy. X-ray studies of motion, (not while in motion) will often reveal alterations from normal. Dynamic studies are done by positioning the patient in flexion, extension and side bending to both sides. In these positions, various abnormalities may be found that will be missed by conventional study. Again, pin-pointing any alteration or abnormality may be the key to the solution in these cases.

One of our patients, Mrs. A. B., age fifty years, who had low back pain off and on for many years, came to us in February, 1957. The only abnormality present was picked up by a dynamic study. Flexion revealed a slipping forward of the fourth lumbar vertebra on the fifth lumbar. There was a measurable difference of one-half cm. on flexion study, of the anterior margin of the body of fourth lumbar in relation to the fifth lumbar vertebra. The treatment in this case consisted of sclerotherapy to the articular facets between fourth lumbar and fifth lumbar. At the same time, the sacroiliac ligaments were also treated. She made a full and complete recovery, and has been symptom-free since discharge in April, 1957.

Treatment of relaxed ligaments, wherever they may be, consists of injecting a sclerosing agent into the ligaments at intervals between three and seven days. My choice of the proliferating solution is Farnsworth Formula #61. It is

used in doses of one-half c.c., to which is added an equal amount of a local anesthetic, my choice being Quinocaine. Actual treatment will depend on the definitive diagnosis. If discogenic disease exists, technic is as follows: for the fifth lumbar level, the lower edge of the fifth lumbar spinous process is located. This spot will be just caudad to the level of the posterior superior iliac spine. Measure off from three-quarters of an inch to one inch lateral to the mid-spinous line; this will be the point of entrance of the needle. The needle is directed anteriorly or towards the table, as the patient is lying prone. Depth of the articular facets will vary according to the thickness of tissue in that area of the back. In the average person, the tip of the needle should contact the arthrodiapyses at a depth of about one and one-half inch. If the needle is too deep, it will have missed the articular facet, in which case, the needle should be re-directed until bone is felt. Experience is necessary in order to get the feel of the various tissues and to learn to estimate the proper depth. Inject one-half cc. Formula #61 mixed with one-half cc. Quinocaine into the capsular ligament, both right and left sides, at the same visit. Slight pain usually is felt, but only at the time when injections are given. Occasionally, pain will be produced by the sclerosing agent and this may last for 24 to 36 hours. The pain is a "soreness" of the lower back rather than a sharp pain and is easily tolerated. When the fourth or third lumbar levels are involved, technic is the same as the fifth except that the needle is inserted

about one-half inch to three-quarters of an inch lateral to the mid-spinous line on the level with the lower margin of the spinous process. Bilateral injections are given at each visit. Anatomical considerations should be exact in doing this work.

In all cases of articular facet sclerotherapy, we believe it is very important to treat the sacroiliac also. This may be done at the same time the facets are treated or may be done prior to or after facet treatment.

Technic for sacroiliac joints is performed in a similar manner to facet injections, except for location of the ligaments and direction of the invading needle. The site of entrance of the needle is a point midway between the posterior superior iliac spine and the mid-spinous line. After the needle enters the skin, it is directed caudad and laterally at a 45 degree angle until the ligaments are contacted. The short posterior ligaments are thus located and injected. Treatments are given at intervals between three and seven days. The sites of injection, of course, should be carefully antisepticized and due regard given to surgical technic. A check should be made for possible entrance into a blood vessel by withdrawing the plunger of the syringe. If blood appears, the injection should not be given at this point, but another spot should be selected which is suitable for injection.

Results throughout the years of joint sclerotherapy for low back instabilities, including discogenic disease, have been outstanding and percentage-wise, we are still able to report better than a ninety per

cent in the rate of recovery.

The cervical syndrome which is often caused by degeneration of the cervical disk and which is seen on radiographic examination as a narrowing of the intervertebral disk space, can be treated by joint sclerotherapy in the same manner that low back syndromes can be treated. A later article will be written on this subject.

In this manuscript I have attempted to describe a syndrome that I have seen many times over the years and to which I have given a great deal of thought. Several patients whose symptoms would fall into such a category were seen in the past year and because the pattern in these cases seemed so much alike, I feel that a special name should be given to this syndrome. I have, therefore, called this "the articular facet syndrome" of perhaps "the lesser arthrodiar syndrome." Discogenic disease may or may not be present in these syndromes. This named syndrome is self descriptive and indicates pathology at the articular facets, namely, the capsular ligament, and there is accompanying pain.

Rehabilitation of the chronic low back victim can often be accomplished by joint sclerotherapy applied to the ligaments that support the joints of the lumbar vertebrae and the sacroiliacs. "The articular facet syndrome" is another type of manifestation seen in the lower back and is amenable to joint sclerotherapy. We feel sure that treating these syndromes will save many patients from becoming chronic invalids. Early treatment is still the best way of starting any total rehabilitation program.