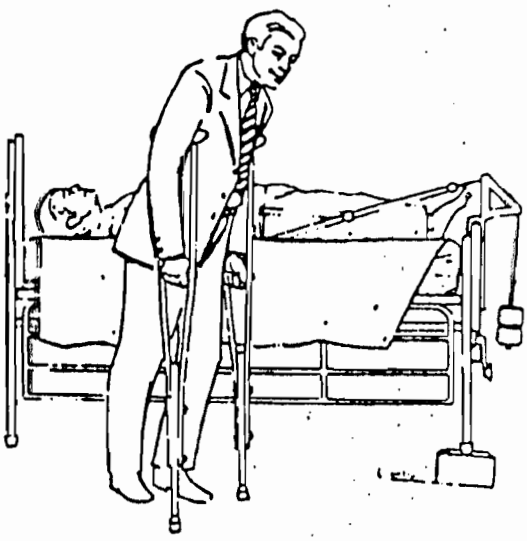
Ambulate; don't vegetate.



Management of common disorders of the lower part of the back

DAVID SHUMAN, D.O.
Philadelphia, Pa.

The prolonged misery, loss of time from work, and amounts of money paid out on insurance and workmen's compensation claims because of disorders attributed to the lower part of the back primarily are the result of inadequate understanding of the back and its disorders by most physicians and practically all lay persons. All too frequently the back is treated with braces, traction with absolute bed rest for two or three weeks, heat, unnecessary surgical measures, and other useless or harmful procedures. Too much time is wasted in speculation about how man was intended to walk on four feet and the inevitable consequences when he walks on only two.

Man can do well enough on two feet and even tolerate a great deal of strain if he is in shape for it. He cannot, however, dig in the garden, move rocks around, get out and play football with his older sons, or otherwise act like a man in good physical shape on one day of the year without suffering for it when he has done nothing more strenuous than push a pen around on the other 364 days. All of a sudden he expects to do a lot more than just walk on two feet. He tries to do the work of a chain hoist, a derrick, and a football player.

There are many causes of backache, including such rare ones as cancer and osteitis condensans, about which no one knows nearly enough to affect the outcome. However, by far the majority of backaches are due to sprains, about which physicians do know something. Then there are subluxations, differences in leg length, pelvic tilt, and metabolic diseases like hyperuricemia. On these also the physician has some knowledge, and usually he can help.

According to Dorland,[1] a sprain is "The wrenching of a joint with partial rupture or other injury of its attachments, and without luxation of bones." The term also can refer to the condition due to such a strain. When just one pair of lumbar vertebrae is involved, this could affect three joints, two apophysial and one symphysial, the last including the disk. The tearing of the ligaments sets the stage for the misery that follows. If a joint is sprained badly, it may never be the same again. Soon after a sprain occurs, there are swelling and usually considerable muscle spasm, a splinting action similar to what follows a fracture. Nature can be prodigal, and the spasm set up by an acute back sprain can be of awesome proportions. Some persons literally are laid low on the spot, unable to move, absolutely helpless, and in great pain. It seems that there is a vicious cycle at work; pain causes spasm, and spasm causes pain.

History. In the acute stage a detailed account of some mishap, a car accident, a fall on an icy sidewalk, or a suddenly added load as a person who was helping to lift suddenly lost his grip, usually can be given. Any such incident might reasonably cause a sprain. However, the initial cause may be away back in the life of a patient with a long history of repeated attacks. When the first incident occurred from 10 to 20 years ago, the details may be a bit hazy. There may have been a fall off a tree limb or a football injury, a difficult childbirth, or any of a number of events that caused severe strain. The point is that, once the ligaments of a joint are badly torn, the joint loses its stability, so that future

Reprinted from the June, 1975 Issue of the D.O.

that absolute bed rest "reduces the intradiscal pressure to zero." Hollinshead[9] had this to say about "intradiscal pressure":

> The intervertebral disks are normally under pressure even when they are not bearing weight, because of the tension exerted by the posterior ligaments. Petter showed that they expand an average of 1.08 mm. when they are removed from the body of a fresh cadaver, and that an average of 30.2 pounds of pressure was necessary to reduce a disk to its former size, thus indicating that in the supine position the disks are under a pressure of about 30 pounds.

With regard to Dr. Gartland's last nine words, ". . . or progressed to a surgical phase by that time," I have long thought that traction and absolute rest frequently are just a prelude to surgery.

Whatever else is indicated in the treatment program can be used while the patient is ambulatory. Osteopathic manipulation certainly is an important part of it. For a badly sprained back joint, sclerotherapy also should be part of the program. These procedures are not mutually exclusive but rather supplement one another. The milder analgesics such as aspirin and acetaminophen are of no use in relieving the pain of a sprained back, sciatica, or fascia lata syndrome. What is needed is a narcotic such as Percodan.

Once the patient is on crutches, the chances are that he also can get to the office with someone's help. This will give the physician opportunity to treat him on the table instead of in bed, which has distinct advantages for both patient and physician. When joint sclerotherapy is indicated, the conditions for its use also will be improved. I attach great value to having the patient's x-ray films on my view box when I am using joint sclerotherapy. The films permit improved mapping of the area in which to insert the needle and locating the target, whether it be a disk, an iliolumbar ligament, an apophysial joint, or some other area that needs to be strengthened.

The crests of the ilia are located easily on both the film and the patient, and with a line drawn across the patient's back at that level other anatomic points may be located easily by their relation to that and the midline of the spinous processes.

Injection techniques: The ligaments of the sacroiliac joints lie mostly under the posterior-superior spines of the ilia (PSIS). The spine is palpated and a two- or three-inch needle, depending on the girth of the patient, is inserted about one-half inch medial to the PSIS and directed downward and

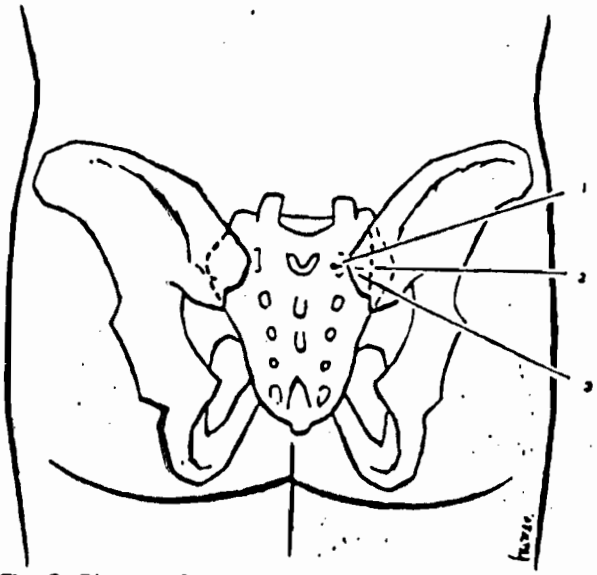


Fig. 2. Diagram for sacroiliac injection: (1) point of insertion; (2) sacroiliac joint; and (3) posterior, superior iliac spine.

slightly laterally. There will be a distinct resistance when the ligaments are reached. Aspiration always should be attempted before injection, and if no blood appears, about 0.5 ml. of a local anesthetic (procaine or lidocaine) should be injected. Then the syringe is disengaged; a syringe holding sclerosing solution (I use sodium morrhuate) is attached, and 0.5 ml. is injected. The dose may be increased or decreased at subsequent visits, depending on the tolerance of the patient.

For the interspinous ligaments, the injection will be facilitated if a small pillow is placed under the abdomen of the prone patient, since this increases the distance between tips of the spinous processes. Placing the thumb and index finger of one hand on the two sides of the spines, the physician inserts a two-inch 20-gauge needle with the other hand. After insertion of the needle into the interspinous ligament, usually to a depth of one or one and one-half inches, depending on the size of the patient, about 0.2 ml. of a local anesthetic is injected, and then the syringe is changed and 0.2 ml. of sodium morrhuate is given. Injections are given when tenderness is noted between the spinous processes.

At the zygapophyseal joints injections may be indicated when x-ray studies show irritation or sagittal or other abnormal facing of the facets which leads to increased strain. Pressure over the joint will elicit an expression of tenderness. These joints are about one inch from the midline and just about opposite the interspinous area. X-ray films are in-

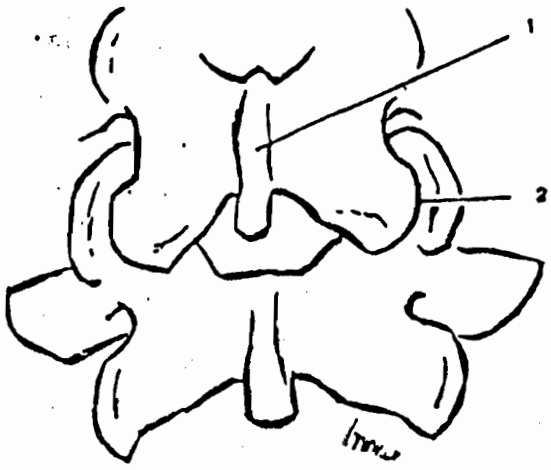


Fig. 3. Diagram for zygapophyseal technique: (1) spinous process and (2) zygapophyseal.

valuable in locating them accurately. Usually a three-inch needle is needed unless the patient is thin, and then a two-inch needle may be adequate. A marking pencil should be used to indicate where the injection is to be made. The needle is inserted straight down to the joint, and the injection can be made into the capsular ligament or ligamenta flava. First 0.2 ml. of a local anesthetic and then 0.2 ml. of sodium morrhuate are injected.

The iliolumbar ligament is like a guy wire in helping to steady the lower part of the back. It runs from the tip of the transverse process of the fifth lumbar vertebra to the inner surface of the ilium. It usually is about two or two and one-half inches from the midline in an adult. The spot for insertion is just above the ilium at the tip of the transverse process. There will be tenderness at this point when this ligament is involved. A three-inch 20-gauge needle is inserted at an angle toward the ilium, and when the resistance of the ligament is felt, about 0.3 ml. of local anesthetic is injected and then as much as 0.5 ml. of sodium morrhuate.

At the site of a herniated disk there usually will be considerable painful spasm, and medial pressure of the thumb will cause pain. Pressure on the spinous process above the disk will elicit pain. There may be radiculitis to help pinpoint the area of involvement. The target area is usually about one or one and one-half inches from the midline. This can be determined from the x-ray film. The needle used here may be from three to five inches, depending on the patient's girth. The needle is inserted about two inches from the midline and directed medially and downward, slowly. Care must be

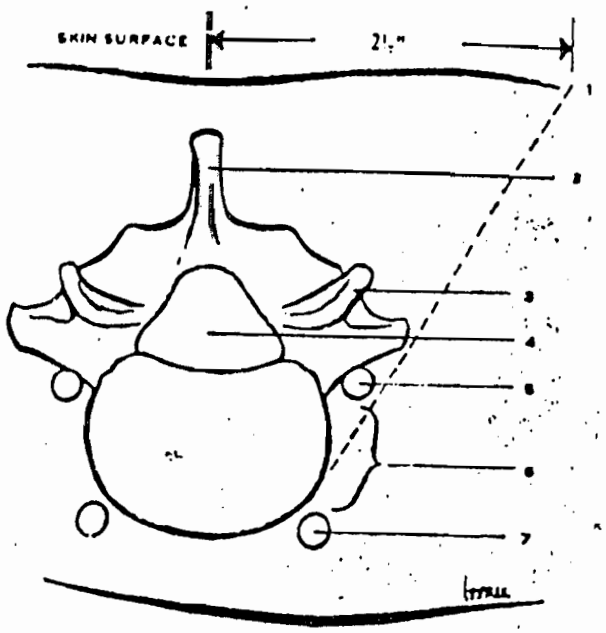


Fig. 4. Diagram for disk technique: (1) point of insertion; (2) spinous process; (3) transverse process; (4) spinal canal; (5) nerve root; (6) injection site; (7) blood vessels and sympathetics; and (at botom) abdominal wall.

taken to avoid the nerve roots and large blood vessels by proceeding at moderate depth. At the disk or the lateral reflection of the anterior spinal ligament 0.2 or 0.3 ml. of local anesthetic and then 0.5 ml. of sodium morrhuate are injected.

Just about any severe pain in the leg will be called sciatica. Often this is the right diagnosis, and sciatica is a sharp pain indeed. Besides being caused by herniation of a disk it can be caused by a sacroiliac disturbance. Another cause of leg pain is fascia lata syndrome, caused by spasm of the fascia lata and the gluteal muscles. Deep palpation will reveal the spasm when present. The pain is not as excruciating or sharp as true sciatica, and the Lasegue sign is more likely to be positive with sciatica than with fascia lata syndrome. Sciatica will respond to treatment of the causative lesion. Fascia lata syndrome usually has a cause in the back, but also responds to deep steady pressure on the spastic muscles.

Exercise should be a part of the program for treatment of a troublesome back, and it can be started even when the condition is acutely painful. A series of graded exercises should be started with the easiest ones and progress to harder ones as the back improves. A simple exercise that can be done with even a painful back consists of getting on the floor on hands and knees and gently swaying the but-

tocks back toward the heels and then forward. Nothing is forced; motion is kept within limits that cause pain. What is important is that some motion is obtained, and this helps circulation. As the back pain lessens, the patient can get into calisthenics, push-ups, bending over, side-to-side bending, backward bending, and the rocker, which is done by lying prone, raising the chest and the thighs, and rocking on the abdomen. It is advisable to exercise in the morning. If the patient then can get in some walking, bicycling, swimming, or other activity that he enjoys, he should be encouraged to do so.

While the cause of the pain is being treated, some relief may be given by medication. Percodan works, and that plus 5 mg. of Valium at night will permit a restful sleep. The blood should be given a chance to circulate and the patient encouraged to ambulate, not vegetate.

Summary. An attempt is made to provide some guidance in the handling of common disorders of the lower part of the back with the osteopathic concept in mind. An essential part of that concept is that the body will, given half a chance, use its great curative powers. The physician should help, not supplant, the natural healing process.

Traction with absolute bed rest circumvents the natural healing process. It favors stasis, the beginning of disease, not healing. Ambulation, with crutches if necessary, helps to maintain circulation. This is elementary, but traction and absolute rest are still used and favored by some physicians.

Some techniques of osteopathic manipulation and joint sclerotherapy are given. These procedures supplement one another and are not mutually exclusive. The value of exercise on a regular basis and of some medication for relief are discussed.

References

1. Arey, L.B., et al., Eds.: Dorland's illustrated medical dictionary. Ed. 23. W.B. Saunders Co., Philadelphia, 1957

2. Chamberlain, W.E.: The symphysis pubis in the roentgen examination of the sacroiliac joint. Am J Roentgenol Radium Ther Nucl Med 24:621-5, Dec 30

3. Mead, S.: A century of the abuse of rest. JAMA 182:344-5, 27 Oct 62

4. Deitrick, J.E., Whedon, G.D., and Shorr, E.: Effects of immobilization upon various metabolic and physiologic functions of normal men. Am J Med 4:3-36, Jan 48

5. Lindblom, K., and Hultqvist, G.: Absorption of protruded disc tissue. J Bone Joint Surg (Am) 32:557-60, Jul 50

6. Asher, R.A.J.: The dangers of going to bed. Br Med J 2:967-8, 13 Dec 47

7. Nahum, L.H.: The rest dogma. Conn Med 27:134-6, Mar 63

8. Gartland, J.J.: Letter to Blue Cross of Philadelphia, 2 Feb 72

9. Hollinshead, W.H.: Anatomy for surgeons. Ed. 2. Harper & Row, New York, 1969, vol. 3, The back and limbs

Petter, C.K.: Methods of measuring the pressure of the intervertebral disc. J Bone Joint Surg 15:365-8, Apr 33, cited by Hollinshead[9]