It's a rare adult who hasn't suffered from sciatica at one time or another. Yet when these people seek care, most clinicians immediately think of disk disease or entrapment of the nerve root in the lateral recess (spinal stenosis). Many physicians unfortunately tend to overlook some of the common nondiskogenic causes of low back pain with radiation to the leg, thereby subjecting patients to unnecessary invasive diagnostic and therapeutic procedures.

Sciatica may well be a symptom of disk disease or root entrapment, but it may also portend a host of other common disorders. Many physicians consider low back pain and sciatica to be vague disorders. As a result, a patient with sciatica may receive only generic treatment: bed rest, muscle relaxants, analgesics, and physical therapy. If these do not work, the patient often seeks a second opinion, and the diagnostic workup continues. Sooner or later—and as costs mount—the insurance company requests a second opinion, and then a third. Often, the patient undergoes a myelogram, CT scan, or laminectomy—procedures that exact considerable expense and/or misery and that frequently prove unnecessary.

The truth is that most causes of sciatica lend themselves to specific and less costly therapy. Physicians who look for the non-diskogenic causes of sciatica can often clinic the diagnosis—and relieve the patient's pain—on the spot. However, the estimated 8 million Americans who are victims of low back pain and sciatica currently incur $5-6 billion dollars annually in diagnostic and therapeutic costs, not to mention $14 billion per year in days lost from work, worker's compensation, disability payments, and litigation. Dr. Namey's article helps physicians diagnose and treat the nine entities most commonly confused with disk disease or nerve root entrapment in a cost-effective manner. He emphasizes the clinical features of these disorders and helps distinguish them with a minimum of expensive and invasive tests. For each entity reviewed, Dr. Namey addresses the question of how to provide specific therapy in an outpatient setting and return the patient to optimum function.

The Non-Diskogenic Causes of Sciatica

To provide specific therapy for patients presenting with sciatica, physicians must consider a host of other syndromes that frequently mimic lumbar disk disease and go unrecognized. These conditions—sacroiliitis, piniform syndrome, iliolumbar syndrome, quadratus lumborum syndrome, trochanteric bursitis, ischiogluteal bursitis, facet syndrome, meralgia parasthetica, and fibrosis—may exist separately or in tandem with another back disorder. Each of these conditions (with the exception of meralgia parasthetica) occurs more commonly than a herniated nucleus pulposus.

Patients may also present with more than one underlying cause of sciatica. Degenerative disk disease often accompanies the lateral entrapment syndrome. Likewise, sacroiliitis, spondylitis, and paraspinal spasm sometimes occur in the same patient. Most physicians are also aware that back pain can mask psychological problems. Patients who are anxious, covertly depressed, or suffering from intrapsychic conflicts often present with a chief complaint of back pain.

Sacroiliitis: Possible Harbinger of The Seronegative Spondyloarthropathies

At least 2-3% of the population suffers from sacroiliitis, a frequent initial manifestation of one of the seronegative spondyloarthropathies. Most patients, however, do not develop manifestations of overt spine disease other than "lumbago," an old term for sacroiliitis.

Pathogenesis. Sacroiliitis presents most commonly in young people who are HLA-B27 positive and/or have ankylosing spondylitis, psoriatic arthritis, Reiter's disease, or arthritis related to inflammatory bowel disease. Reiter's disease commonly causes sacroiliitis in young men, which frequently precedes or follows heel pain, planar fascitis, metatarsalgia, or knee problems. A recent history of venereal infection (gonorrhea, Chlamydia, or both) is significant. Also, women with sacroiliitis often have had a recent episode of cystitis, cervicitis (possibly asymptomatic), or tubal infection.

The piriformis muscle is frequently the major site of pain in classic sacroiliitis (due to inflammation of its insertion into the lower third of the SI joint). Thus, piriformis syndrome may also occur secondary to sacroiliitis, causing classic manifestations of sciatica and complicating diagnosis (see below).

Diagnosis. Though sacroiliac's onset is usually subacute, patients often attribute its symptoms to trauma or work-related activities (the "simplest cause and effect")
Physical examination reveals tenderness over the sacroiliac joints. Frequently, anterior spinal flexion is decreased, and this is best documented by the Schöber test. Stressing the sacroiliac joint with lateral compression of the pelvis is painful, and the second stage of the two-stage Patrick’s test is frequently positive (Fig. 2). These maneuvers are not specific for sacroilitis, however.

Either the erythrocyte sedimentation rate (ESR) and/or C-reactive protein (CRP) levels are usually elevated, serving as markers of the degree of inflammation. Always obtain both of these studies before ruling out sacroilitis.

Radiographs may reveal erosions, sclerosis, bony bridging, and even fusion of the sacroiliac joints, but these changes are rarely overt in the early stages of the disease. Physicians who

*To perform the Schöber test, mark the patient’s skin in the midline at the level of the sacral dimples. Two additional marks are placed 5 and 10 cm below the first mark. Then, instruct the patient to bend forward as far as possible. Measure the distance between the upper and lower marks, and calculate the distance between the resting 15 cm and flexion measurement. If the marks move less than 5 cm, the patient’s lumbar spinal flexion is abnormally decreased.

FIGURE 2
TWO-STAGE PATRICK’S TEST

Have the patient lie supine on the table and place the foot of involved side opposite the knee. Place one hand on the flexed knee and the other hand on the anterior-superior iliac spine of the opposite side. Press down on these points, and the pain is elicited from the sacroiliac joint on the side of the anterior superior iliac spine.

suspect sacroiliitis in the face of normal x-rays should order a bone scan. Enhanced uptake of technetium phosphates in the sacroiliac joints indicates active sacroiliitis, and clearly active but asymptomatic sacroiliitis may also be evident.  

Management. Clinical management of sacroiliitis is threefold: identifying and treating the underlying disease, administering nonsteroidal anti-inflammatory drugs (NSAIDs) and, in some cases, injecting the affected-sacroiliac joints and/or piriformis muscle with corticosteroids and local anesthetics (see below).  

Identifying Piriformis Syndrome

Distinguishing piriformis syndrome—spasm, irritation, or inflammation of the piriformis muscle—from a herniated nucleus pulposus often proves confusing, since sciatica is common to both entities. The piriformis muscle arises from the pelvic surface of the sacrum at the sacroiliac capsule, crosses the sciatic nerve at the sciatic notch, and inserts on the upper border of the greater trochanter of the femur (Fig. 3). It externally rotates the femur and abducts the thigh when the limb is flexed.

Pathogenesis. Sacroiliitis, direct trauma, and arthritis of the hip joint are among the most common causes of piriformis syndrome. Mechanisms of injury can include: 1) inflammation of the muscle's insertion into the SI joint, 2) trauma of the muscle (a fall on the buttocks), or 3) spraining the hip attachment (via a fall on ice where the leg slides out laterally). The piriformis can also be a myofascial “trigger point” in the fibrositis syndrome (see below). All of these factors can cause sciatica because of the muscle's anatomic relationship to the sciatic nerve.

Diagnosis. Patients with piriformis syndrome frequently give a history of either 1) a minor twisting injury that occurs while lifting or carrying a heavy weight or 2) direct trauma to the buttock, such as a fall. As with a herniated lumbar disk, patients may complain of severe buttock pain that radiates down the back of the thigh to the knee and, sometimes, as far as the ankle, foot, or toes. Spasm of the left piriformis muscle can cause “rectal” pain, particularly with defecation or constipation. Women may also complain of perineal pain and dyspareunia or, more commonly, pain when separating the legs prior to intercourse.

Though straight-leg raising and Patrick's tests also are positive in lumbar disk disease, other physical findings are specific to piriformis syndrome. Look for 1) pain and weakness on resisted abduction/external rotation of the thigh and 2) persistent external rotation of the leg when the patient lies supine on the table. The affected extremity frequently reveals tonic external rotation of the affected extremity relative to the contralateral side (“positive piriformis sign”) (Fig. 4). Also look for tenderness on palpation of the muscles medial to the trochanter. Demonstrate pain on muscle contraction by asking the patient to sit on the examination table with knees apart, ankles together, and to attempt to resist the physician's attempt to bring the knees together.

On rectal examination, the piriformis muscle is usually exquisitely tender. Digital pressure applied to the unaffected side should not cause discomfort, but pressure to the involved piriformis muscle elicits a painful sciatic radiation.

Management. Injection of the piriformis muscle is both diagnostic and therapeutic. Before beginning the procedure, assemble a tray containing 1% lidocaine and either 1) a combination of 0.75% bupivacaine HCl (Marcaine) and one of the hydrocortisone derivatives or 2) Sarapin® (an aqueous distillate of Saracenia purpurea, the pitcher plant, which blocks pain fiber transmission, but not sensory or motor function). Also have on hand a 4 to 6-inch 20-gauge spinal needle and appropriate prepping material.

Position the patient with the affected side uppermost, with hips and knees flexed. Insert one finger of the non-dominant hand in the patient's rectum over the tender muscle between the sacrum and ischial spine. With the other hand, introduce the needle from the back, midway between the lateral aspect of the sacrum and greater trochanter. Direct the needle toward the finger in the rectum until you feel it just below the mucosa. Withdraw one centimeter, and inject 2-3 ml of lidocaine to ensure that the needle is not in the vicinity of the sciatic nerve. (Occasionally, the piriformis muscle "twitches" when the belly of the muscle is punctured, sending a shock down the leg, but this sensation disappears immediately). Then, inject 2-3 ml of bupivacaine/corticosteroid mixture or Sarapin®.

**FIGURE 3**
PIRIFORMIS SYNDROME

![Piriformis muscle and sciatic nerve](image)

The piriformis muscle crossing over the sciatic nerve. Consider the piriformis syndrome whenever a patient presents with sciatic pain.


**FIGURE 4**
POSITIVE PIRIFORMIS SIGN

![Positive piriformis sign on the left side](image)

"Positive piriformis sign" on the left side.
If the diagnosis of piriformis syndrome is correct, dramatic relief occurs within 10-15 minutes of injection. Some physicians argue, however, that injection of the piriformis "blocks" the sciatic nerve and does not necessarily discriminate between piriformis syndrome and primary sciatic neuritis. But successful injection excludes more proximal compression of the sciatic nerve (i.e., that secondary to a ruptured disk).

A caveat: Many patients experience numbness in the distribution of the sciatic nerve following injection. This abates quickly, but physicians should warn the patient about this possible effect. The patient should not leave the office unassisted and should certainly not attempt to drive. (The onset of action of Sarapin® is slower, so this effect may occur in a delayed fashion when this drug is used).

**Iliolumbar Syndrome: A Commonly Unrecognized Cause of Sciatica**

Iliolumbar syndrome—also known as lumbosacral sprain—is a frequently unrecognized cause of sciatica that results from inflammation, sprain, or tear of the iliolumbar ligament. This ligament bridges the transverse process of the fifth lumbar vertebra and iliac crest (Fig. 5). People who lift heavy objects while rotating the back—lifting carts off a truck, for example—are especially prone to the iliolumbar syndrome.

**Diagnosis.** Patients complain of pain that varies from a constant, dull ache aggravated by activity to extreme severity. Pain is usually localized to the posterior portion of one or both iliac crests (patients can often point to the precise site), but may spread across the iliolumbar region.

A careful musculoskeletal examination usually elicits the pathognomonic signs of iliolumbar syndrome. The most typical sign is tenderness on palpation of the posterior iliac crest on the involved side. Patients frequently have a discrepancy in leg length of 1.5 cm or more, and pain and sciatica are more pronounced on the side of the longer leg.

Increasing pain with lateral bending away from the involved side is the characteristic sign of iliomembranous syndrome.

Patients report pain in the iliac crest or directly below on straight-leg raising. To distinguish this pain from that associated with disk herniation, the physician should flex one of the patient's hips (with the knee also flexed) through its full range while holding the opposite leg down on the table. If this maneuver causes back pain on the involved side, the test is positive. (In the root compression syndrome, it causes only minimal discomfort, or even relief, since the sciatic nerve is relaxed and exerts less pull on the nerve root). Neurologic examination is normal in patients with iliolumbar syndrome.

**Management.** Local injection—best done with a combination of 1-2% lidocaine and 1-2 ml betamethasone—should relieve pain, thus confirming the diagnosis. Many patients require at least a 2-inch needle, but some need the full length of a 3 ½-inch spinal needle, so be prepared. Before injection, spray the surface of the skin with a "freezing" spray, such as ethyl chloride. Approach the patient from 1-2 cm above the insertion of the iliolumbar ligament at an angle that allows you to hit its insertion directly (Fig. 6). If the presumptive diagnosis is correct, the above tests should be negative. Obviously, patients who have a leg-length discrepancy must later be fitted for corrective shoes.

**Quadratus Lumbarum Syndrome**

Diagnosis of quadratus lumbarum—a condition related to, but less common than, iliolumbar syndrome—is relatively easy for physicians who are aware that the syndrome exists. The quadratus lumbarum muscle arises from the iliolumbar ligament and posterior iliac crest and inserts at the lower border of the last rib and the transverse processes of the lower four lumbar vertebrae. The mechanism of injury is unknown, but some experts believe that strain to the muscle on one side

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### COST COMPARISON OF LONG-ACTING NSAIDS

<table>
<thead>
<tr>
<th>Drug</th>
<th>Usual adult dose</th>
<th>Cost per 14-day course*</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diflunisal</td>
<td>Dolobid</td>
<td></td>
<td>Low potential for GI upset. Anti-inflammatory effect not as beneficial as some other NSAIDs</td>
</tr>
<tr>
<td></td>
<td>500 mg q12h</td>
<td>$17.50</td>
<td></td>
</tr>
<tr>
<td>Indomethacin</td>
<td>(Indocin-SR)</td>
<td></td>
<td>High potential for GI and CNS side effects. Not the first drug of choice for elderly</td>
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<tr>
<td></td>
<td>75 mg qd-bid</td>
<td>$10-20</td>
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<tr>
<td>Naproxyn</td>
<td>(Naprosyn)</td>
<td></td>
<td>Also approved for ankylosing spondylitis, tendinitis, bursitis</td>
</tr>
<tr>
<td></td>
<td>250-500 mg q12h</td>
<td>$14</td>
<td></td>
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<tr>
<td></td>
<td>250 mg q 12h</td>
<td>$14</td>
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<tr>
<td></td>
<td>375 mg q 12h</td>
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<tr>
<td></td>
<td>500 mg q 12h</td>
<td>$21.75</td>
<td></td>
</tr>
<tr>
<td>Piroxicam</td>
<td>(Feldene)</td>
<td></td>
<td>10 mg is more appropriate for small or elderly patients</td>
</tr>
<tr>
<td></td>
<td>10-20 mg qd</td>
<td>$11</td>
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<td></td>
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<td></td>
<td>20 mg qd</td>
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<td>Sulindac</td>
<td>(Clinoril)</td>
<td></td>
<td>May have fewer renal side effects</td>
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<td></td>
<td>150-200 mg q 12h</td>
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<tr>
<td></td>
<td>200 mg q 12h</td>
<td>$16.25</td>
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</tr>
<tr>
<td>Salsalate</td>
<td>(Disalcid)</td>
<td></td>
<td>Least likely to cause GI irritation, smallest potential for renal side effects and fluid retention. Probably less effective in sacroiliitis than other conditions</td>
</tr>
<tr>
<td></td>
<td>1.5 G q 12h</td>
<td>$15.75</td>
<td></td>
</tr>
</tbody>
</table>

*Based on current California retail prices.
results in rupturing a few fibers, with resulting hypertonicity and ischemia.\textsuperscript{13}

**Diagnosis.** The patient usually presents with posterior iliac tenderness with referred pain to the groin, inner or anterior thigh, and/or inner calf.\textsuperscript{15} Physical examination reveals tenderness on palpation of the affected muscle and/or when the patient bends to the contralateral side. Pain symptoms are virtually identical to those of iliolumbar syndrome, with two exceptions: 1) adjacent ipsilateral paraspinal muscle spasm is more common and 2) pressure on the middle of the 12th "floating" rib on the affected side causes pain in quadratus lumborum syndrome, because the quadratus attaches to this rib. This latter finding is the best distinguishing feature.

**Management** includes injection of the affected muscle and exercise. Either 1) 3-4 ml of lidocaine or 2) Sarapin\textsuperscript{\small*} with 1 ml of corticosteroid provides relief of pain. Inject the paraspinal area of the quadratus midway between the iliac crest attachment and the floating rib (both landmarks should be identified with marking pen). Also advise patients to begin passive stretching of the muscle, followed by an active exercise program.

**Trochanteric Bursitis**

Trochanteric bursitis is a form of pelvic girdle pain commonly misdiagnosed as a lumbosacral problem or arthritis of the hip. This entity is a frequent cause of sciatica in elderly patients.\textsuperscript{18} Many such patients also have a leg-length discrepancy but, unlike iliolumbar syndrome, the disease occurs on the "short" side. Trochanteric bursitis is also associated with osteoarthritis of the ipsilateral hip.\textsuperscript{19}

**Diagnosis.** Diffuse pain in the buttock and lateral thigh with marked point tenderness over the greater trochanter strongly suggests trochanteric bursitis. Patients most commonly complain of deep, aching pain, but may relate burning and tingling as well. They often report that lying on the affected side(s) is uncomfortable, as is sitting with the affected leg crossed over. Activity aggravates the pain and, though rest relieves it, the pain paradoxically worsens at night. In the elderly, referred pain may suggest an L5 nerve radiculopathy.

To examine for point tenderness, have the patient assume the lateral recumbent position with the painful side uppermost. Palpate the lateral aspect of the thigh from below the greater trochanter. Moving proximally, palpate the bony edge of the trochanter which, along with the bone above it, is covered by the trochanteric bursa. If firm pressure over the bursa causes pain and the other bony prominences are not painful, make the presumptive diagnosis of trochanteric bursitis.\textsuperscript{18}

Significant radiographic findings include periosteal "fluffing" on the lateral aspect of the involved greater trochanter. Occasionally, one may see calcification within the bursa itself.

**Management** consists of injecting a local anesthetic and a corticosteroid into the point of maximal tenderness at the trochanteric bursa (Fig. 7). First, palpate the "fall-off" point of the greater trochanter. The point to inject lies 1-2 cm below this line, between the anterior and posterior aspects of the femur. (It's helpful to "draw" the femur and the fall-off on the patient's skin). Inject the bursa with 1-2 ml of corticosteroids with 1-2 ml of lidocaine.

**Ischiogluteal Bursitis: The Classic Pain in The Arse**

Suspect ischiogluteal bursitis in patients with pain localized primarily to the buttock. Non-orthopedic physicians often misdiagnose this entity and, in particular, mistake it for a herniated lumbar disk.\textsuperscript{20}

**Diagnosis.** Ischiogluteal bursitis has earned its nickname with good reason. Patients complain bitterly of severe, unrelenting pain on the center of the buttck, which is aggravated by sitting or walking, is often accompanied by referred pain down the leg, and is unrelieved by bedrest.\textsuperscript{21}

**FIGURE 5**

**ILIOLUMBAR SYNDROME**

![Diagram of iliolumbar syndrome]

*Iliolumbar syndrome: iliolumbar ligament and quadratus lumborum muscle. Pain relief following local injection of the iliac crest at insertion of the iliolumbar ligament confirms the diagnosis of iliolumbar syndrome.*


**FIGURE 6**

**INfiltrATION OF THE Iliac CREST**

![Diagram of infiltration of the iliac crest]

One characteristic that differentiates ischiogluteal bursitis from a herniated lumbar disk is that patients give a history of "tossing and turning all night" in a futile effort to find a comfortable position. Patients with a herniated disk, in contrast, lie absolutely still so as not to exacerbate pain and spasm.21

On physical examination, the patient often presents the bedraggled appearance of one who has not slept. Tenderness is maximal at the ischial tuberosity, and the patient may sit on the examining table with the affected buttock elevated to avoid pressure on it. As with a herniated lumbar disk, the straight-leg raising test is positive, but Patrick's test, which is negative in disk disease, is also positive. Rectal examination, though difficult to perform on supine patients (they cannot flex their hips acutely), should still be performed. On the lateral rectal wall on the painful side, physicians may note an area of bulging, doughy-feeling, inflamed tissue.21 Pressure on this spot may cause such excruciating pain that the patient may scream inadventently.

Differential considerations include acute gout and pseudogout. Both of these conditions can affect the bursae and must be excluded as a precipitating cause.

Management. Patients suffering from ischiogluteal bursitis deserve the physician's best efforts at pain relief. Initial treatment includes at least three to four days of bed rest and NSAIDs. Advise the patient to sit on a pillow or soft "doughnut" when out of bed.

Patients in severe pain require injection of 2 ml of corticosteroid and 2-5 ml of 1% lidocaine into the bursa, which may need to be repeated as often as every two days. Relief occurs within hours of the injection, which should be done with the patient in the fetal position or leaning forward over a table. After the acute episode has passed, patients may experience perceived weakness of the foot and leg muscles for several weeks.

**Posterior Facet Syndrome: A Common Misdiagnosis**

Posterior facet syndrome—instability of the back—is a much-abused and maligned diagnosis. Yet some patients suffer back pain caused by chronic synovial inflammation and degenerative disease and instability in the facet joints, most frequently those of the L4-5 and the L5-S1 vertebrae (Fig. 8).22 Posterior facet syndrome often accompanies degenerative disk disease and spinal stenosis.13

**Diagnosis.** Patients with posterior facet syndrome usually complain of maximum pain in the lower back. This pain may radiate down the posterior thigh to the knee, but rarely below the calf (in contrast to sciatica associated with lumbar disk herniation). The pain is usually unilateral, despite the anatomy of the facet. It is aggravated by activity and helped somewhat by external bracing.

When examining the patient, look for limitation of spinal movements and tenderness at the lower lumbar, vertebral, and sacral regions. Lateral bending with extension of the spine often causes the most pain. Neurological examination is usually normal, but there may be slight diminution of sensation over one or more dermatomes. Oblique and lateral radiographic views with the patient in flexion may reveal the presence of abnormal posterior facets.15

**Management.** Refer patients with posterior facet syndrome for specific therapy, depending on the pathophysiologic processes involved. Options include injecting a local anesthetic and corticosteroid into the facet joints, manipulation of the spine, or surgical fusion. Only a

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**FIGURE 7**

**GREATER TROCHANTER AND ISCHIAL TUBEROSITIES**

Treatment of trochanteric bursitis consists of infiltration of local anesthetic and steroids into point of maximum tenderness at the trochanteric bursa.


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**FIGURE 8**

**POSTERIOR FACET SYNDROME**

Intervertebral foramen

Vertebral body

Facet joint

Posterior primary ramus

Posterior facet syndrome: lumbar vertebrae and a spinal nerve exiting an intervertebral foramen between disk and facet joint. Note innervation of facet joint by the posterior primary ramus of the spinal nerve.

neurosurgeon, orthopedist, or rheumatologist trained in injection of the facet joints should attempt injection, and then only under fluoroscopy.

**Meralgia Parasthetica**

Meralgia parasthetica—an entrapment neuralgia of a lateral femoral cutaneous nerve—is caused by a variety of disorders and can occasionally be confused with sciatica. Pressure along the nerve at any point by a tumor, infection, fetus, obesity, or traction, can produce symptoms.

**Diagnosis** of meralgia parasthetica usually poses little difficulty, although pinpointing the underlying cause may prove more problematic. Patients present with burning pain and/or paraesthesia—described as “pins and needles”—of the anterolateral aspect of the thigh. Symptoms are usually unilateral, but both thighs may be involved. The pain is usually associated with walking or long periods of standing and is relieved by rest. Firm pressure on the affected area may not cause discomfort, but a light brushing (such as that caused by clothing) often produces an unpleasant tingling sensation.

**Management.** If the nerve is involved as it passes over the brim of the iliac crest, a lateral femoral cutaneous nerve block (just below the anterosuperior iliac spine and iliopectineal ligament) is both diagnostic and curative. An ineffective block warrants the need for a more extensive neurological workup (including radiographs of the spine and, sometimes, myelography). Patients with refractory symptoms may eventually require a surgical section or neurolysis.

**Fibrositis: A Disabling But Treatable Syndrome**

For a half a century, clinicians believed that all back pain was attributable to fibrositis, a disorder characterized by musculoskeletal hyperalgesia and stiffness at characteristic trigger points (Fig. 9). This pain syndrome, a form of soft-tissue rheumatism, is not a true inflammatory process, since it is not associated with local leukocyte infiltration or changes in blood or serum characteristics of true inflammation.

Consider fibrositis in a patient with poor sleep and chronic pain, particularly if the patient is anxious, appears depressed, or manifests obsessive-compulsive behavior. Though it is a painful and debilitating disorder, it responds dramatically to non-specific or local therapy.

**Diagnosis.** In addition to describing widespread pains, patients with fibrositis usually have three sleep-related complaints, even if they do not admit to insomnia: (1) They 1) awaken with pain, 2) feel tired upon awakening, and 3) feel fatigued during the day. If at least two of these problems are not present, fibrositis is an unlikely diagnosis. Exhaustion may be the most disabling feature of fibrositis, but patients usually emphasize the pain and minimize the sleep disturbance.

Pain is widely distributed, but is usually predominant along broad areas of the cervical and lumbar spine and is aggravated by stimulation of “trigger points.” Another cardinal feature of the disease is a history of poor relief of pain from NSAIDs. All of the disorders discussed above will respond—at least in part to NSAIDs—but fibrositis does not.

Given this history, physicians unfamiliar with the signs of fibrositis may initially suspect psychiatric illness. However, certain cardinal features are reproducible from patient to patient with fibrositis and should always be sought. At least 16 points of maximal tenderness (“trigger points”) exist, which may be unknown to the patient. There may be marked areas of skin tenderness, particularly over the scapular area. Reactive hyperemia-visible evidence of pain in the region—is often present.

**Management** of fibrositis is multifaceted. Most patients respond to direct injection of the trigger points with either lidocaine or lidocaine with corticosteroid. Steroids alone prove of little value, since the condition is not a true inflammation, but including steroids with lidocaine helps to alleviate the pain of the injection.

Patients with depression or sleep disturbances may benefit from low-dose tricyclic antidepressants, L-tryptophan, and/or psychiatric referral. Amitriptyline (Elavil, Endep) 50-75 mg or doxepin (Sinequan, Adapin) 25-50 mg, given at bedtime, are sedating and promote sleep. L-tryptophan, 1.0-1.5 grams at bedtime, may also induce sleep in patients unable or unwilling to take antidepressants.

Finally, exercise has several benefits: it alleviates stress, promotes sleep, and generates a feeling of well-being. Aerobic exercise, particularly if done in the morning, helps patients feel better and aids sleep, which is essential to the correction of this disorder.

**Helping the Patient Avoid Further Disability**

In addition to specific therapy, all patients with sciatica benefit from some general measures. Encouraging aerobic activity is important, and swimming, dancing, and walking are all excellent forms of exercise. Also encourage patients to strengthen their abdominal muscles by performing modified sit-ups and by keeping these muscles taut while standing. Instruction in proper methods of lifting, bending, and carrying will also help patients avoid exacerbation of back pain.

Most non-diskogenic causes of sciatica—except fibrositis—respond favorably to a two-week course of NSAIDs. The main problem with these drugs is patient compliance; most people will not take medication several times daily for two weeks. To obviate this, prescribe a drug that requires only once or twice-daily dosing (see table). Most patients can

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**FIGURE 9**

**COMMON TRIGGER POINTS IN FIBROSITIS SYNDROME**

[Diagram showing various trigger points with labels: Low cervical, Supraspinatus, Trapezius, Costochondral junction, Low lumbar, Gluteus medius, Medial fat pads, Lateral condyle.]

Localization of some points of maximal tenderness (“trigger points”)

tolerate a 7-14 day course of NSAIDs, particularly if they take them with food or milk to avoid adverse gastrointestinal effects. Of the NSAIDs, salicylate (Disalcid) is the least irritating to the GI tract. Also, advise patients not to take aspirin in any form concurrently.

Narcotics have little place in the management of non-diskogenic sciatica. In most studies, they are inferior to NSAIDs for relief of this type of pain.

References

Physician Post-Test Questions
Choose the correct answer from your reading. You may have to go back and re-read the text. Each question has only one correct answer.

1. The most common cause(s) for piriformis syndrome include(s):
   a) trauma to the buttocks.
   b) sacroiliitis.
   c) arthritis of the hip.
   d) all of the above.
   Choose: a) 1, 2, 3, b) 1, 3 c) 2, 4 d) 4

2. Trochanteric bursitis is:
   1) best treated by injection with anesthetic and corticosteroids.
   2) most common in younger patients.
   3) sometimes associated with a leg-length discrepancy.
   4) best treated with NSAIDs.
   Choose: a) 1, 2, 3 b) 1, 3 c) 2, 4 d) 4

3. When a patient presents with suspected fibrosis, physicians should keep in mind that this disease is:
   1) usually psychogenic in origin.
   2) associated with pain and fatigue upon awakening.
   3) best treated with NSAIDs.
   4) usually associated with a physiologic sleep disturbance, even if the patient does not complain of insomnia.
   Choose: a) 1, 2, 3 b) 1, 3 c) 2, 4 d) 4

4. Which test(s) best differentiate(s) iliolumbar syndrome from quadratus lumborum syndrome?
   1) lateral bending
   2) anterior flexion
   3) response to injection
   4) pressure on the 12th floating rib
   Choose: a) 1, 2, 3 b) 1, 3 c) 2, 4 d) 4

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BASIC DIAGNOSTIC WORKUP FOR PATIENT PRESENTING WITH SCIATICA

History
• Pain: Time of onset, duration, character, factors that relieve or exacerbate pain
• Family history of back pain
• History of related diseases (colitis, psoriasis, peripheral arthritis, recent venereal infection)

Physical Examination
• Observation of patient’s gait
• Sacroiliac palpation
• Inspection for lumbar paraspinal spasm
• Anterior bending with Schöber test
• Lateral bending
• Patrick’s test (two-stage)
• Palpation of ischial and trochanteric bursae
• Palpation of sciatic notch
• Inspection for piriformis sign and performance of piriformis test
• Leg length measurement
• Pressure on floating rib
• Inspection of non-spinal and spinal points
• Rectal examination (loss of sphincter tone indicates nerve compression)
• Pelvic examination in women
• Inspection of shoes for abnormal wear. This is an important clue to both leg length discrepancy and altered gait, which may suggest a chronic underlying problem

Laboratory Evaluation*
• SMAC-20
• ESR
• C-reactive protein

Radiographs*: AP film of the pelvis

*In selected patients. See text for indications.
<table>
<thead>
<tr>
<th>Disorder</th>
<th>Symptoms</th>
<th>Physical signs</th>
<th>Diagnostic techniques</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diskogenic</td>
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<tr>
<td>Disk herniation</td>
<td>Low back pain with radiculopathy and paravertebral muscle spasm; pain</td>
<td>Restricted spinal movement; restricted spinal segment; and positive Laségue’s</td>
<td>EMG/NCS and CT or myelogram</td>
<td>(beyond scope of discussion)</td>
</tr>
<tr>
<td></td>
<td>aggravated by sitting, Valsalva’s maneuver, and sciatic stretch</td>
<td>test</td>
<td></td>
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<tr>
<td>Lateral entrapment</td>
<td>Buttock and leg pain with radiculopathy; pain often relieved by sitting,</td>
<td>Similar to disk herniation</td>
<td>EMG/NCS and CT with or without myelogram</td>
<td>(beyond scope of discussion)</td>
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<tr>
<td>syndrome (spinal stenosis)</td>
<td>aggravated by extension of spine</td>
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<td>Nondiskogenic</td>
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<tr>
<td>Sacrolilitis</td>
<td>Low back and buttock pain</td>
<td>Tender SI joint; positive lateral compression test; positive Patrick’s test</td>
<td>X-ray of the pelvis and frog leg view of the</td>
<td>Nonsteroidal anti-inflammatory drugs; SI joint</td>
</tr>
<tr>
<td></td>
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<td>often associated with peripheral arthritis</td>
<td>SI joint and bone scan; ESR and CRP may be</td>
<td>injection</td>
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<td></td>
<td>elevated</td>
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<tr>
<td>Piriformis syndrome</td>
<td>Low back and buttock pain with referred pain down the leg</td>
<td>Pain and weakness on resisted abduction/external rotation of thigh</td>
<td>Injection of the muscle with local</td>
<td>Injection of the muscle with local anesthetics and corticosteroid</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>anesthetics</td>
<td></td>
</tr>
<tr>
<td>Iliolumbar syndrome</td>
<td>Pain in iliolumbar ligament area (posterior iliac crest); referred leg</td>
<td>Tender iliac crest and increased pain with lateral bending</td>
<td>Local injection to iliac crest area</td>
<td>Local injection at insertion of iliac crest</td>
</tr>
<tr>
<td></td>
<td>pain</td>
<td></td>
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</tr>
<tr>
<td>Trochanteric bursitis</td>
<td>Buttock and lateral thigh pain; worse at night and with activity</td>
<td>Tender greater trochanter; R/O associated leg-length discrepancy</td>
<td></td>
<td>Local injection of trochanteric bursa; NSAIDs</td>
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<tr>
<td>Ischiogluteal bursitis</td>
<td>Buttock and posterior thigh pain; worse with sitting</td>
<td>Tender ischial tuberosity; straight leg-raising test and Patrick’s test positive; R/O associated leg-length discrepancy</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Bed rest and local injections; NSAIDs</td>
<td></td>
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<tr>
<td>Posterior facet syndrome</td>
<td>Low back pain</td>
<td>Lateral bending in spinal extension increases pain</td>
<td>CT</td>
<td>Referral for local injection under fluoroscopy; Manipulation; NSAIDs</td>
</tr>
<tr>
<td>Meralgia paresthetica</td>
<td>Lateral thigh paresthesia</td>
<td>No motor findings, tenderness below anterosuperior iliac spine</td>
<td></td>
<td>Local infiltration around the nerve</td>
</tr>
<tr>
<td>Fibrositis syndrome</td>
<td>Difficulty sleeping, anxiety, and depression; multiple trigger points</td>
<td>Trigger-point tenderness maximal at defined sites</td>
<td></td>
<td>Antidepressants and trigger-point injections; aerobic exercise, stretching</td>
</tr>
</tbody>
</table>


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