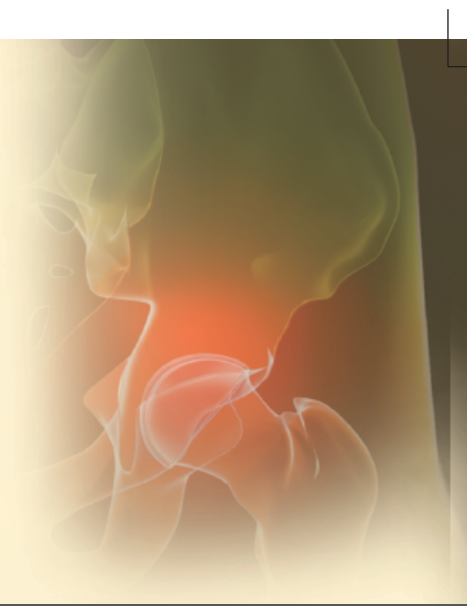


Rheuma Facts

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Current News

Stress an important factor in fibromyalgia

Stress can exacerbate the symptoms of fibromyalgia in females, Australian research shows.

The study of 98 female patients with FM who were matched with 35 healthy female controls found that higher levels of stress were associated with higher levels of fibromyalgia symptoms.

Perceived stress was significantly associated with the characteristics of fibromyalgia including pain, sleep changes, fatigue, and cognitive dysfunction, authors Katrina Malin and Geoff Littlejohn from Monash Medical Centre reported.

Interestingly, higher levels of stress was associated with higher levels of fibromyalgia symptoms in the healthy controls and the fibromyalgia group.

“This fits with the concept of fibromyalgianess, where the different components of the condition may be present at different levels in different persons and only when they reach a certain threshold do they reach criteria for FM fibromyalgia, as seen in the ACR 2010 clinical diagnostic criteria for the disorder,” they wrote in *Clinical and Experimental Rheumatology*.

“Stress appears to have a central role in modulating key “up-stream” processes in fibromyalgia,” they said.

Speaking to Rheumatology Update, Dr. Littlejohn said their findings suggested that better management of stress in general was likely to lessen FM symptoms of pain, sleep, fatigue and poor cognition.

“Whether stress is a cause or effect it should be appropriately managed in patients with FM e.g. using techniques to gain better control, less catastrophization, more exercise, and other stress management strategies,” he said.

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The evaluation of the elderly person with acute Low Back pain

Summarized by:

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Most of us will experience back pain, a chronic illness with a high likelihood of recovery and recurrence. Back pain is second only to upper respiratory infection as the symptom most likely to precipitate a clinic visit. The prevalence of back pain in the geriatric population is estimated to be more than 70%.

As with many other clinical conditions, the cause, course, and evaluation of back pain in elderly people is different than in younger people. An elderly patient with a very first episode of low back merits close evaluation.

Degenerative changes in the lower back constitute a normal feature of aging, but these changes by themselves do not cause back pain. In younger people, back pain may be caused by distortion of the gel-like disks sandwiched between the vertebrae of the lower back. With aging, these disks lose much of their water content and are less likely to become distorted. However, this disk desiccation allows adjacent vertebrae to approximate each other and increases the wearing of the articular cartilage. Osteophytes may compress nerve roots and encroach on the spinal canal.

History

Look for Signs of Systemic Disease and Referred Pain.

One basic strategy is to first search for worrisome symptoms of systemic disease or clues to referred low back pain that would require immediate, sometimes urgent, imaging and specialized evaluations and consultations. These conditions tend to be non-mechanical (referred) low back pain or mechanical back pain with 1 or more red flags.

Once systemic causes of low back pain have been ruled out, 2 subgroups remain: pure mechanical low back pain and acute radicular low back pain, also known as sciatica.

Uncomplicated Mechanical Low Back Pain. Elderly people with back pain most commonly have uncomplicated mechanical low back pain. The discomfort tends to localize to the lumbosacral area and worsens with stretching, twisting, walking, or bending. The pain may cause aching in the buttock or thigh and rarely radiates below the knee. It is relieved by rest if the person can find a comfortable position in bed. The patient may report being awakened from sleep when turning over or changing position.

Acute Radicular Back Pain (Sciatica). Acute radicular low back pain radiates or shoots down one leg. The discomfort is often characterized as sharp, tingling, shooting or "electrical" and may be exacerbated by coughing, straining, sneezing. It may occur in several ways, depending on the nerve roots affected. The pattern of weakness (if present) in the lower extremity is an important clue to the site of the neurologic dysfunction. Significant unilateral thigh and leg weakness suggests involvement by multiple nerve roots or peripheral nerves (although most peripheral nerve processes are not usually associated with back pain).

The common causes of sciatica in elderly people include the following:

- **Spinal stenosis:** Spinal stenosis, the narrowing of the spinal canal, typically develops as a person ages and the disks become drier and start to shrink. At some point in this process, any disruption, such as a minor injury that results in disk inflammation, can cause impingement on the nerve root and trigger pain. Pain from spinal stenosis can occur in both legs or can occur as sciatica.
- **Spondylosis and spondylolisthesis.** Spondylosis occurs when the fourth or fifth lumbar vertebrae degenerate or develop small fractures. As it progresses, the spine can become unstable, leading to spondylolisthesis, in which one vertebra slips forward over the other and causes sciatica. The condition occurs mostly in older individuals, with women having a higher risk than men.

THE FOCUSED HISTORY

Because low back pain is an almost ubiquitous complaint, one of the goals of the evaluation is to differentiate typical mechanical back pain from discomfort caused by other diseases. Important historic clues to be considered in all patients are the following:


- Nature of the pain
- Presence of other signs or symptoms with the back pain
- Location of the pain; and
- Time course of the pain.

Although we actually know relatively little about the precise cause of low back pain, an artificial but very useful consideration is to determine whether low back pain is related to the mechanical function of the lower back or related to other causes, notably systemic problems. In mechanical low back pain, the discomfort is often precipitated by lifting, twisting, or bending (or other activities that put mechanical stress on the low back), and it is relieved by rest. Most referred back pain from the abdomen, pelvis, or retroperitoneum is not mechanical. (Likewise, the pain from incipient herpes zoster is not mechanical.) Any pain with fever or that interrupts sleep is a cause for concern.

The Presence of Symptoms or Signs outside the Back

Certain clues should raise red flags that an underlying systemic disease or referred pain from other conditions may be present. A particularly worrisome sign for underlying problems is pain that causes the person to get out of bed and pace at night. Of importance, low back pain that is constant and does not improve over time merits additional consideration for problems beyond mechanical ones.

Signs of Infection. Fever with back pain suggests a potentially



serious infection, such as epidural abscess, septic diskitis, osteomyelitis, bacteremia, or bacterial endocarditis.

Indications of Malignancy. Prolonged back pain with weight loss or anorexia increases the likelihood of the presence of a malignancy, particularly in older people with a history of cancer. In fact, low back pain can be a sign of metastatic disease in an elderly patient with a history of previous malignancy.

Bowel or Bladder Dysfunction. The presence of new bowel or bladder dysfunction raises the probability of spinal cord disease.

Adverse Effects of Medications. Low back pain may also be related to adverse effects of medications that the patient is taking. For example, if the patient is receiving corticosteroid medications, the back pain may be related to a vertebral compression fracture. Patients taking anticoagulant drugs may have low back pain caused by retroperitoneal hemorrhage.

The Location of the Pain

Have the patient show you where the back pain is localized and describe where it radiates. Most patients with low back pain will indicate that the most severe discomfort is confined in the midline above the gluteal crease (lumbosacral spine) or to one side.

Areas of pain radiation can sometimes help to localize the primary site of disease. As examples:

- Low back pain radiating to the flank suggests a process in the lower chest, gall bladder, kidney, ureter, or retroperitoneal space
- Painful radiation to the groin may imply disease in the ureter, gastrointestinal tract, inguinal area, testicle, ovary, hip, or vascular system
- If the pain radiates to the buttocks or thighs, radiculopathy or vascular or pelvic disease is more likely.

A useful rule of thumb is that intra-abdominal and retroperitoneal conditions tend to refer pain to the lumbar region, and pelvic disorders refer pain to the sacral region.

Note: Acute back pain primarily located above T12 is not considered low back pain and may reflect disease elsewhere such as the cervical or thoracic spine, aorta, pancreas, gall bladder, or chest. Such conditions are beyond the scope of this monograph.

The Time Course

An important historic consideration is whether the low back pain is chronic or acute. Low back pain that is constant and does not improve over time merits additional consideration.

Back pain that progressively and insidiously worsens over weeks (or months) without relief suggests serious illness.

Psychosocial and Emotional Factors

It is important to appreciate the patient's attitude towards the back pain. Most patients can give a precise description of the pain and concisely state any precipitating and relieving factors. Is the person anxious, fearful, stoic, or histrionic in describing the discomfort? A person with complicated emotional issues may describe the pain in vague, inconsistent terms.

Of note, evidence now strongly suggests that psychosocial and emotional factors are better predictors of low back pain outcomes than either physical examination findings or severity and duration of pain. Psychosocial factors that may predict poorer low back pain outcomes include depression, passive coping strategies, job dissatisfaction, higher disability levels, or somatization. Identifying such factors may help target appropriate interventions such as intensive multidisciplinary rehabilitation.

THE PHYSICAL EXAMINATION

The goal of the physical examination is to obtain key information (often in the most parsimonious manner) to confirm or reorient the initial clinical impression. The patient needs to be undressed completely so that the entire spine can be observed for posture and contour. Look for signs of comorbid illness such as obesity, weight loss, or chronic lung disease; scars from previous back surgery; or occasionally, the unilateral vesicular rash of herpes zoster.

Of note, be aware that although the patient's history may sound completely typical for uncomplicated mechanical low back pain, finding an exquisitely sensitive spinous process on examination increases the likelihood of infection or malignancy.

Initial Observations

Important information is obtained simply from watching the patient's pattern of movement. The following are some of examples of what to watch for:

- If the patient with acute back arrives in a wheelchair, be on alert for other concerns. This may be the presentation of someone in ill health. Individuals with back pain almost never prefer a wheelchair because of the way it positions the sitter and the frequent bumps, which tend to aggravate the discomfort.
- A patient who arises from a chair to shake your hand with one hand on his or her back above a bent leg suggests the presence of sciatica (Minor sign)
- Patients with vertebral compression fractures may walk slowly and carefully

- Individuals with radicular pain often move with an awkward delicacy and frequently keep moving or pacing while the medical history is being taken; and
- Patients with uncomplicated mechanical low back pain may walk normally but prefer to stand or lie supine.

Check for Abnormal Spinal Curvature

Back pain may be related to abnormal spinal curvature that may be seen as follows:

- Scoliosis is curvature of the thoracic spine in the lateral dimension and looks like an "S" from the back. The spinous processes rotate in the direction of the concavity and the convex shoulder is often elevated, the scapula is more prominent, and the pelvis is tilted
- Kyphosis progression may suggest thoracic compression fractures of osteoporosis. A transverse abdominal crease is usually evident on abdominal examination, which can suggest vertebral compression fractures
- A sharp angle of the spinal curvature with kyphosis is called a gibbus deformity
- Weak back muscles or hip disorders can produce lordosis of the lower thoracic spine
- Loss of lumbar lordosis suggests lumbar compression fractures; and
- Stiff lumbar lordosis that does not straighten with forward flexion suggests musculoskeletal low back pain. Note that the pelvis is tilted in lumbosacral disease and horizontal in sciatica (Vanzetti sign).

Palpation

After inspecting the spinal contour, palpate the spinous processes from the cervical region to the lumbar area. Consider the following:

- Mechanical back pain usually has no palpable abnormalities but may be associated with paravertebral muscle spasm
- Feeling an anterior step-off or displacement of a spinous process on its adjacent lower neighbor suggests spondylolisthesis
- Exquisite tenderness over any spinous process suggests compression fracture, epidural abscess, septic diskitis, or metastatic cancer. With this finding, imaging studies are usually indicated
- If the patient reports pain when the physician slides his or her thumbs medially from the posterior superior iliac spines, muscle strain should be considered

- Pain on moving laterally from the midline suggests inflammation such as from an abscess (Mennell sign)
- Skin tenderness over the right flank suggests acute cholecystitis (Boas sign)
- Skin tenderness over one side along a dermatome suggests herpes zoster or diabetic thoracoabdominal syndrome
- Tenderness over the greater trochanter suggests trochanteric bursitis; and
- Tenderness over the ischial tuberosity suggests ischiogluteal bursitis (weaver's bottom).

Range of Motion

The next part of the physical examination is determining back range-of-motion by assessing symmetry, quality of movement, and associated pain. The basic motions are flexion and extension, lateral bending to each side, and rotation to each side. The fundamental question is "do any of these maneuvers produce or exacerbate the back pain?" Pain with back motion suggests a mechanical problem. No limited or painful back range-of-motion essentially rules out uncomplicated mechanical low back pain and raises the possibility of referred pain or systemic illness.

Back flexion (bending forward with the legs straight) limited by stiffness or pain with failure to reverse the lordotic curvature suggests mechanical back pain with paravertebral muscle strain. Low back extension (arching the back) usually exacerbates mechanical back pain (by stretching the paravertebral muscles) but can also worsen referred pain from the retroperitoneal or pelvic areas.

Lateral flexion and rotation can sometimes worsen the pain of radiculopathy produced by disk herniation. Disk herniation lateral to the affected nerve root may produce pain (or exacerbate it) when the person bends toward the affected side, whereas herniation medial to the nerve root will be more painful when the patient bends away from the affected side.

DETERMINING PRESENCE AND SEVERITY OF NERVE ROOT DYSFUNCTION

All patients with back pain should have a screening neurologic evaluation including motor function, perineal and lower extremity sensation, deep tendon reflexes, and Babinski reflexes. This brief screening primarily focuses on checking for lower spinal cord dysfunction, long tract signs, and motor and sensory patterns of sciatic nerve involvement.

In more than 90% of patients with back and leg pain caused by a prolapsed lumbar disk compressing a nerve root, the herniations occur at the L4/L5 and L5/S1 levels. A focused



examination includes straight leg raise testing and a neurologic examination that includes evaluation of knee strength and reflexes, great toe and foot dorsiflexion strength, foot plantarflexion and ankle reflexes, and distribution of sensory symptoms. These tests should be done to assess the presence and severity of nerve root dysfunction.

Screen for Lower Spinal Cord Dysfunction

Check for lower spinal cord dysfunction by first lightly touching the perineum and the anal sphincter with your gloved finger. Any perianal sensory defect or a lack of an anal sphincter "wink" is a medical emergency and suggests a cauda equina lesion or lower spinal cord compression. This testing is especially important to perform in patients with bilateral buttock or leg pain.

Look for Long Tract Signs

Check carefully for Babinski reflex. The spinal cord ends at L1 or L2, and therefore conditions below this level do not cause positive long tract signs, such as the Babinski reflex, but this is beyond the scope of this monograph.

Motor Testing of the Lower Extremity

Motor testing of the lower extremity usually provides objective information to identify the location of potential lumbosacral lesions. Joint movement requires 2 opposing movements involving 4 adjacent nerve roots:

- Hip movement involves L2-L3 for flexion and S1-L5 for extension
- Knee movement involves L3-L4 for extension and L5-S1 for flexion
- Ankle movement involves L4-L5 for flexion and S1 for extension
- Some foot movements are mediated through a single nerve root:
 - Foot inversion is primarily innervated by L4
 - Great toe dorsiflexion is supplied by L5
 - Foot eversion is predominately S1.

Table 1 offers examples of testing procedures for typical nerve root enervations associated with lower extremity movements.

Table 1. Lower Extremity Activity, Nerve Root Innervation, and Testing Procedure

Activity	Nerve Root Enervation	Testing Procedure
Hip flexion	L2-L3	Have the sitting patient raise the knee against resistance
Hip extension	S1-L5	Have the prone patient raise the leg off the examining table and then against resistance
Hip adduction	L2-L4	Try to push the sitting patient's knees apart while the patient resists
Hip abduction	L5-S1	Try to push the sitting patient's knees together while the patient resists
Knee flexion	L5-S1	Have the sitting patient flex the bent knee against resistance
Knee extension	L3-L4	Have the sitting patient straighten the bent leg against resistance
Plantar flexion	L5-S1	Have the patient rise up on the tiptoes
Foot dorsiflexion	L4- L5	Have the patient rock back on the heels

Low back pain sometimes involves the nerve roots forming the sciatic nerve. Table 2 summarizes some of the patterns.

Table 2. Neurologic Findings in Lumbosacral Nerve Roots

Spinal Level	Pain	Numbness	Weakness	Reflexes
L4 root	L4 dermatome	Medial knee and calf	Knee extension, foot dorsiflexion	Reduced knee jerk
L5 root	L5 dermatome	Between great and first toe	Foot and big toe dorsiflexion	No change
S1 root	S1 dermatome	Lateral foot and sole	Foot eversion	Reduced ankle jerk
Midline disk herniation	Bilateral legs	Perineum	Bowel, bladder dysfunction	Reduced anal wink

Have the patient perform the following flexion maneuvers for locating possible nerve damage or muscle weakness contributing to back pain:

- Check active plantar flexion with knee at 90 degrees (have the patient step on the gas). Weakness suggests S1 nerve root damage or tibial nerve dysfunction, tibiotalar ankle sprain, gastrocnemius muscle tear, Achilles tendon damage, or tendonitis
- Check active dorsiflexion of the foot against resistance. Weakness suggests foot drop (L5), tibiotalar ankle sprain, and extensor tendonitis
- Check ankle inversion against resistance. Weakness suggests foot drop (L5), subtalar ankle sprain, and anterior tibialis tendonitis
- Check ankle eversion against resistance. Weakness suggests superficial peroneal nerve problem (S1), subtalar ankle sprain, and peroneal retinaculum sprain; and
- Check dorsiflexion of the great toe. Weakness suggests foot drop or L5 lesion, first metatarsal phalangeal joint problem, and extensor hallucis longus tendonitis.

The following tests are used for identifying the source of radiculopathy.

Testing for L4 Radiculopathy. Stretch the femoral nerve by having the patient lie on the side with the painful leg in the air. Hold the knee in extension and hyperextend the hip by 15 degrees. Passively flex the knee. Pain in the anterior thigh with this procedure suggests L4 radiculopathy.

Now check active knee extension. Weakness suggests L4 radiculopathy. If weakness is present, then check for a sensory defect over the medial malleolus.

Testing for L5 Radiculopathy. Next, check ankle dorsiflexion by having the patient walk on the heels. Weakness suggests foot drop or an L5 radiculopathy. Check for sensory loss over the great toe and dorsal foot to confirm.

Testing for S1 Radiculopathy. Finally check plantar flexion by having the patient rise up on the toes. Weakness or inability suggests a S1 radiculopathy. Check for sensory loss over the lateral malleolus and the plantar aspect of the foot. Confirm by checking for diminished ankle jerk. If the ankle jerk is increased, this suggests a contralateral upper motor neuron lesion.

Sensory Examination

Three types of sensation are tested in the lower extremity. Light touch, which is transmitted through the anterior spinothalamic tracts, is tested using an artist's paintbrush. Vibration and position sensation, which travel up the posterior columns, are tested using a tuning fork and by toe proprioception. Lumbosacral disease never affects these posterior columns. Pain and temperature travel up the lateral spinothalamic tracts, and these are tested by pinprick and temperature sensation (hot or cold).

Locating the Sensory Abnormality. The location of the sensation depends on the sensory dermatome or the area supplied by a spinal accessory nerve. Sensory loss implies interruption of the sensory fibers below the sensory level. The pattern of a combined motor and sensory loss can help to localize the site of the lesion. In radicular back pain, most of the sensory changes in low back pain represent involvement of a single nerve root. Testing the sensory distribution patterns can be helpful, although the lack of sensory loss does not rule out a specific nerve root process because dermatomes overlap. Moreover most sensory disturbances in the leg are caused by lesions involving the peripheral nerves rather than the nerve roots. Patterns of sensory loss are shown in Table 3.

Table 3. Patterns of Sensory Loss With Peripheral Nerve Lesions

Location of Sensory Loss	Peripheral Nerve	Nerve Root Derivation	Associated Findings
Lateral thigh	Lateral femoral cutaneous	L2-L3	
Posterior thigh	Posterior femoral cutaneous	S1-S2	
Medial leg	Saphenous	L2-L4	
Medial thigh	Obturator	L2-L4	Loss of thigh adduction
Anteromedial thigh and leg	Femoral	L2-L4	Loss of knee extension; diminished knee jerk
Foot	Sciatic	L4-S1	Loss of foot dorsiflexion and inversion; reduced ankle jerk
Dorsal foot	Peroneal	L4-S1	Loss of foot dorsiflexion and eversion



Screening Sensory Examination. The sensory examination requires significant patient cooperation. Perineal sensation has already been emphasized and should be tested in most (if not all) elderly patients with back pain.

Generally, distal sensation is tested first unless the patient has a specific sensory complaint. If the patient does have a specific complaint, have him or her draw it out or outline it and begin testing in the center of the area defined. Otherwise testing the foot provides the most useful information.

- Test pinprick and light touch sensation over the dorsal (L5), medial (L4), and lateral (S1) foot
- Test vibration sense by placing the tuning fork on the great toe. (Sometimes it is useful to first touch the tuning fork on a bony prominence at the patient's elbow or wrist to give a sense of the vibration.) Let the patient's toes warm up if the weather is cold. Decreased vibration sense at the great toe suggests peripheral neuropathy. If the sensation is abnormal, then move up the leg to the ankles and then the patella. Vibration can only reliably be tested over bony prominence. When testing vibration, use a 128-Hz tuning fork. A 256-Hz tuning fork may be more sensitive for pernicious anemia; and
- Next, evaluate great toe proprioception by moving it. The patient should have the eyes closed or shielded from seeing the direction of movement. Hold the patient's toe by its sides. Move it toward the patient's head in a large upward movement and then move the toe downward away from the head. Have the patient say the direction of movement (up or down). Now perform the test by moving the toe about 2 millimeters and note the response. The small movements and holding the toe by the sides are worth stressing. If proprioception of the great toe is lost, the patient's problem is more complex than lumbosacral disease, which does not affect the posterior columns that communicate the proprioceptive information to the brain.

Straight Leg Raises

Various provocative maneuvers can be performed to test for radiculopathy or nerve root impingement. The straight leg raises are important provocative tests. Have the patient lie supine, with the pelvis flat and both feet on the examining table. Slowly elevate each foot while keeping the leg straight, causing passive flexion of the hip. It is important that the other foot remain flat to reduce pelvic rotation. This test stretches the L5 and S1 nerve roots and will cause pain in the distribution of

these roots when they are irritated or compressed.

Early pain (within 10 degrees) in the low back on straight leg raise suggests strain of the low back muscles (Demianoff sign). Pain between 30 and 60 degrees suggests sciatica or radicular low back pain. Pain at greater than 40 degrees is seen in musculoskeletal (tight hamstring) or radicular low back pain (Goldthwait sign). No pain to 90 degrees is the norm. Repeat the test with the foot passively dorsiflexed. The interpretation is the same.

Other Provocative Testing

Louvel Sign. Have the patient cough or perform Valsalva maneuver. An increase in the back pain implies radiculopathy.
Patrick Test. With the patient supine, place the patient's ankle on the contralateral knee and then gently press down on the flexed knee, abducting the hip. This useful test tends to localize the discomfort to the site of disease. Pain in hip with this maneuver this suggests degenerative joint disease of the hip. Consider sacroiliitis if the test causes radiating pain from the low back down the leg. Pain felt in the lower spine suggests a vertebral compression fracture.

Additional Signs of Sciatica

Other signs of sciatica include the following:

- Pain on the contralateral side when the nonpainful side is flexed at the thigh with the leg held in extension (Fajersztajn sign)
- Loss of sensation on the lateral portion of the foot (Szabo sign)
- Pain on adduction of the thigh (Bonnet sign)
- Pain in the buttocks when the great toe is hyperextended (Turyn sign); and
- Pain in the lower back or down the leg when the patient is supine (Linder sign).

To differentiate sciatica from a hamstring injury, flex the hip with the leg straight until it feels painful and then dorsiflex the foot. A hamstring pull will not be painful with this maneuver, whereas in patients with sciatica, the pain will increase (Bragard leg sign).



LABORATORY AND IMAGING TESTS

Patients with worrisome or "red flag" findings on history or physical examination require aggressive evaluation and usually timely neuroimaging studies of the lumbosacral spine. They may also need urgent consultations with orthopaedic or neurosurgeons.

Laboratory tests may also be indicated; for example, blood tests may include complete blood count, calcium and phosphorus levels, serum protein electrophoresis, prostate specific antigen, and alkaline phosphatase.

Note: Clinicians should not feel the need to routinely obtain imaging or other diagnostic tests in patients with nonspecific low back pain. Recent guidelines recommend imaging tests (magnetic resonance imaging and computed tomography) for patients with signs or symptoms of radiculopathy or spinal stenosis only if they are potential candidates for surgery or epidural steroid injections. The challenge is that elderly people are a special subgroup not directly addressed by these guidelines and we know that malignancy and infection are more common in elderly people.

Managing Mechanical Low Back Pain

Patients with uncomplicated mechanical low back pain make up the largest subgroup and usually can be managed conservatively without initial back imaging. Follow-up examination in 1 to 2 weeks usually shows improvement in more than 90% of patients. Lack of any improvement merits additional evaluation and imaging studies.

Therapy for uncomplicated mechanical low back pain is individualized and generally focuses on symptom relief. Depending on the nature of the disability, brief bed rest of 1 to 2 days may be considered, but prolonged bed rest is not indicated. Because of rapid deconditioning, prolonged bed rest may compromise the patient's return to former levels of activity. Acetaminophen or nonsteroidal anti-inflammatory drugs are useful if precautions are taken and no contraindications exist. One to 2 weeks of scheduled dosing is preferable to taking analgesics when the pain flairs. Narcotics are usually not required except for some vertebral compression fractures. As one patient remarked, one thing worse than a backache is being constipated with a backache. Local heat may be helpful, but care must be taken to avoid thermal injury.

For patients who do not improve with self-care options, certain nonpharmacologic therapies have proven benefits. For acute low back pain, spinal manipulation has been helpful. For

chronic or subacute low back pain, helpful therapies may include intensive interdisciplinary rehabilitation, exercise therapy, acupuncture, massage therapy, spinal manipulation, yoga, cognitive-behavioral therapy, or progressive relaxation.[4] Once the pain is significantly relieved, low stress activities such as walking, stationary biking, or swimming can be recommended. Physical therapy is often helpful.

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Pros and cons about the management of Back pain

Summarized by:

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Advanced Imaging

The Recommendation: Do not recommend advanced imaging (e.g., MRI) of the spine within the first 6 weeks in patients with nonspecific acute low back pain in the absence of red flags.

The Rationale: Advanced imaging within the first 6 weeks of developing symptoms, in the absence of red flags, has not been shown to improve patient outcomes; however, it does significantly increase costs. Examples of red flags include trauma history, unintentional weight loss, immunosuppression, cancer history, steroid or intravenous drug use, osteoporosis, age older than 50 years, presence of a focal neurologic deficit, and progression of symptoms.

A 6-week course of conservative management is reasonable in the absence of radicular symptoms or progressive pain.

Conservative measures include brief (24-48 hours) bed rest with initiation of physical therapy. Medications, such as nonsteroidal anti-inflammatory drugs (NSAIDs) and muscle relaxants, are often beneficial. In patients who are sensitive to NSAIDs, analgesics such as tramadol can be used instead. Use of a cane while walking can help unload the back. Gradual introduction of stretching and strengthening of core muscles should be started. A lumbosacral corset might be helpful during the first 2-3 days, but the patient should be weaned after that.

Red flags are important guideposts that should alert clinicians that a more serious issue may be present. History of trauma, associated fever and chills, immunosuppression, history of cancer, osteoporosis, history of intravenous drug abuse, and progressive symptoms are the major red flags not to ignore.

Elective Spinal Injections

The Recommendation: Do not perform elective spinal injections without imaging guidance, unless contraindicated.

The Rationale: Elective spinal injections should be performed under imaging guidance using fluoroscopy or CT with contrast enhancement (except when contraindicated) to optimize needle placement, diagnostic accuracy, therapeutic efficacy. Not using imaging guidance may result in inappropriate, and thereby less effective, medication placement and the need for

additional future care and cost.

Leave Nerve and Muscle Function Alone

The Recommendation: Do not use electromyography (EMG) and nerve conduction studies (NCS) to determine the cause of axial lumbar, thoracic, or cervical spine pain.

The Rationale: EMG and NCS are measures of nerve and muscle function. They may be indicated when there are symptoms that raise concern about neurologic injury or disorder, such as the presence of leg or arm pain, numbness, or weakness associated with compression of a spinal nerve. Because spinal nerve injury is not a cause of neck, mid-back, or low back pain, EMG and NCS have not been found to be helpful in diagnosing the underlying causes of axial lumbar, thoracic, and cervical spine pain.

Cut Back on Bed Rest

The Recommendation: Don't recommend bed rest for more than 48 hours when treating low back pain.

The Rationale: In patients with low back pain, bed rest exceeding 48 hours in duration has not been shown to be of benefit.

Bed rest is a double-edged sword. Short-term bed rest is beneficial. Longer-term bed rest, meaning longer than 48 hours, can be detrimental because it causes weakness of the para-spinal muscles and deconditioning. For uncomplicated low back pain, every attempt should be made to encourage stretching and strengthening of core muscle groups as soon as possible; an appropriate rehabilitation program should be initiated quickly.

Ankylosing Spondylosis

(What Is It?)

Summarized by:

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Ankylosing spondylitis (AS), a spondyloarthropathy, is a chronic, multisystem inflammatory disorder involving primarily the sacroiliac (SI) joints and the axial skeleton. The outcome in patients with a spondyloarthropathy, including AS, is generally good compared with that in patients with a disease such as rheumatoid arthritis.

Ankylosing spondylitis is a form of arthritis that mainly affects the lower back. It causes inflammation and damage at the joints, and first affects the sacroiliac joints between the spine and the pelvis. It also can affect other areas of the spine and other joints, such as the knee. Eventually, inflamed spinal joints can become fused, or joined together so they can't move independently. The word spondylitis refers to inflammation of the spine; ankylosis means fusion or the melding of two bones into one.

Ankylosing spondylitis is relatively rare. It affects about 1 in 1,000 people. It may run in families, although its cause is not understood. It most commonly strikes otherwise healthy young men. Men get this condition 10 times more often than women. The disorder most often appears between the ages of 20 and 40, but can develop in children.

Pathology:

The primary pathology of the spondyloarthropathies is enthesitis with chronic inflammation, including CD4+ and CD8+ T lymphocytes and macrophages. Cytokines, particularly tumor necrosis factor- α (TNF- α) and transforming growth factor- β (TGF- β), are also important in the inflammatory process by leading to fibrosis and ossification at sites of enthesitis.

Signs and symptoms

Key components of the patient history that suggest AS include

the following:

- Insidious onset of low back pain - The most common symptom
- Onset of symptoms before age 40 years
- Presence of symptoms for more than 3 months
- Symptoms worse in the morning or with inactivity
- Improvement of symptoms with exercise

General symptoms of AS include the following:

- Those related to inflammatory back pain - Stiffness of the spine and kyphosis resulting in a stooped posture are characteristic of advanced-stage AS.
- Peripheral enthesitis and arthritis
- Constitutional and organ-specific extra-articular manifestations

Fatigue is another common complaint, occurring in approximately 65% of patients with AS. Increased levels of fatigue are associated with increased pain and stiffness and decreased functional capacity.

Extra-articular manifestations of AS can include the following:

- Uveitis
- Cardiovascular disease
- Pulmonary disease
- Renal disease
- Neurologic disease
- Gastrointestinal (GI) disease
- Metabolic bone disease

Diagnosis

The diagnosis of AS is generally made by combining the clinical criteria of inflammatory back pain and enthesitis or arthritis with radiologic findings.

Radiography

Radiographic evidence of inflammatory changes in the SI joints and spine are useful in the diagnosis and ongoing evaluation of AS.

Bamboo spine



Bilateral Sacroiliitis





Early radiographic signs of enthesitis include squaring of the vertebral bodies caused by erosions of the superior and inferior margins of these bodies, resulting in loss of the normal concave contour of the bodies' anterior surface. The inflammatory lesions at vertebral entheses may result in sclerosis of the superior and inferior margins of the vertebral bodies, called shiny corners (Romanus lesion).

Power Doppler ultrasonography can be used to document active enthesitis. In addition, this technology may be useful in the assessment of changes in inflammatory activity at entheses during the institution of new therapies

MRI and CT scanning

Magnetic resonance imaging (MRI) or computed tomography (CT) scanning of the SI joints, spine, and peripheral joints may reveal evidence of early sacroiliitis, erosions, and enthesitis that are not apparent on standard radiographs.

Management

Pharmacologic therapy

Agents used in the treatment of AS include the following:

- Nonsteroidal anti-inflammatory drugs (NSAIDs)
- Sulfasalazine
- Tumor necrosis factor- α (TNF- α) antagonists
- Corticosteroids

Surgical therapy

The following procedures can be used in the surgical management of AS:

- Vertebral osteotomy - Patients with fusion of the cervical or upper thoracic spine may benefit from extension osteotomy of the cervical spine
- Fracture stabilization
- Joint replacement - Patients with significant involvement of the hips may benefit from total hip arthroplasty

Quiz

