

can be started when the patient tolerates to prevent contractures and loss of strength.

ARTHRITIC CONDITIONS OF THE SPINE

Arthritic conditions of the spine, termed *spondyloarthropathies*, mainly affect the axial skeleton. Clinically, the patient has low back pain that increases with rest and improves with activity. Spondyloarthropathies have the following characteristics:

- They run in families.
- They are more common in men.
- Onset is before age 40 years.
- Patients generally have inflammatory arthritis of the spine or the large peripheral joints.
- Patients lack autoantibodies in the serum.
- They are associated with the presence of HLA-B27.²⁷

Ankylosing Spondylitis

Ankylosing spondylitis is a type of inflammation that affects the synovium of the spinal arthrodiar joints and all the joint ligaments of the spine at their insertion points into the bone (enthesitis). It begins in the sacroiliac joints in nearly all patients and spreads superiorly up the spine.²⁵ As the disease progresses, the spine becomes more rigid (ankylosed) and develops flexion deformities.²⁵ The disease also leads to formation of bony bridges called *syndesmophytes* between the vertebrae. Structurally, patients lose the lumbar curve, have reduced chest expansion, and have an increase in thoracic kyphosis.^{25,32} Other changes noted in radiographic imaging are squaring of vertebrae and destruction of the sacroiliac joints (Fig. 24-7).⁴⁴

Ankylosing spondylitis has a greater incidence in men, and the age of onset is usually in the late teens to early 20s.²⁵ Hypomobility is likely to be seen in men between ages 40 and 50 years and in women older than 50 years.³⁹ Patients with ankylosing spondylitis usually complain of alternating buttock pain that radiates down the thigh and that increases with rest but decreases with activity, a hot bath, or a shower.²⁵ Patients may show signs of peripheral arthritis, such as swelling, redness, and tenderness. Constitutional symptoms include fever, fatigue, weight loss, and elevated erythrocyte sedimentation rate.²⁵ Ankylosing spondylitis often is confused with sacroiliac arthritis; however, there are several differences between these two diseases (Table 24-2).

Management of Ankylosing Spondylitis. Management of ankylosing spondylitis includes physical therapy and drug therapy. It is suggested that early rehabilitation of ankylosing spondylitis improves functional mobility and posture reducing the impact of disability.^{25,26,28} Therapeutic exercise along with antiinflammatory drug therapy is important in managing ankylosing spondylitis. Benefits of exercise include improved mobility, posture, and function.^{26,28} Education is key to starting management of patients with ankylosing spondylitis. Patients should try to exercise when pain level is low and they are least tired. Starting an exercise session with heat application and light motion exercises can help loosen the joints and decrease pain for exercise.²⁵ Before starting the patient on a strengthening regimen, the therapist should always try to improve

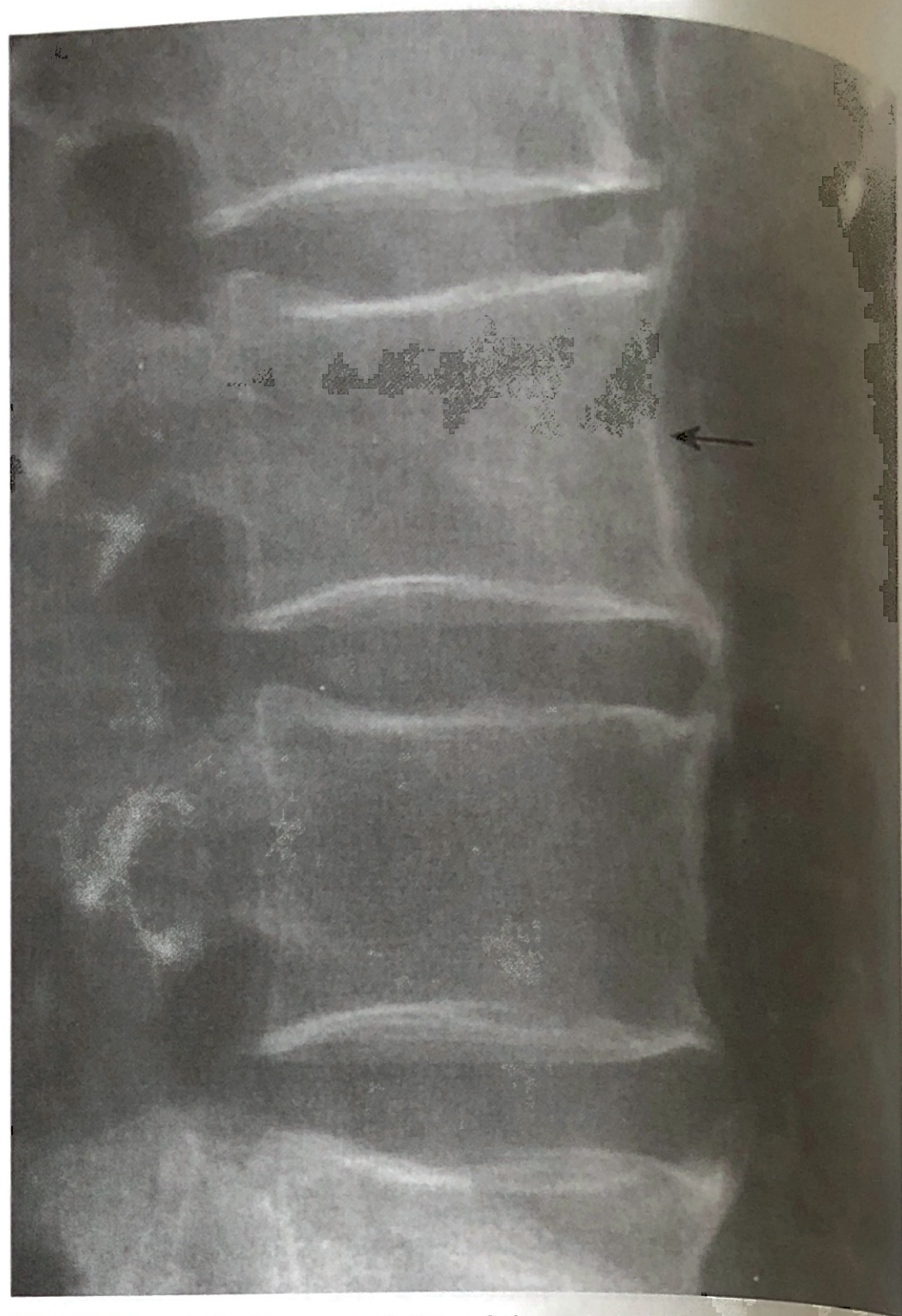


FIG 24-7 Ankylosing spondylitis of the spine. There is vertebral body squaring resulting from mineralization of the anterior longitudinal ligament, which fills in the normal anterior concavity of the vertebral body (arrow). (From Adam A, Dixon AK, Grainger RG, et al, editors: Grainger & Allison's diagnostic radiology: a textbook of medical imaging, ed 5, Philadelphia, 2008, Churchill Livingstone.)

mobility of the spine, which can reduce pain and stiffness in the patient.²⁵ Physical therapy should focus on stretching the anterior flexor muscles and strengthening the extensors. Specifically, therapy should focus on strengthening the postural muscles, back and neck extensors, shoulder retractors, and hip extensors and abductors.²⁵ A prone program is a good management option to stretch the anterior muscles.²⁵ Postural exercises are also beneficial, including standing against a wall with heels, buttocks, and shoulders touching the wall. Also, patients should try to sleep with as much extension as tolerable and lay prone at least 15 minutes a day.²⁵ Aquatic therapy is another management option that can help reduce discomfort and provide an avenue for relaxation, maintaining assisted ROM, and gentle strengthening.²⁵ Finally, breathing exercises are important because of the decreased chest expansion that occurs with ankylosing spondylitis.

Pharmacologic intervention usually includes NSAIDs to help decrease pain and stiffness, allowing for normal ADL and exercise. Indomethacin is the most effective NSAID used with ankylosing spondylitis for decreasing night pain and morning stiffness.^{25,27} Sulfasalazine, which reduces levels of acute phase reactants, may act as a "disease-modifying" agent. Sulfasalazine can decrease the