that the inflammation originates at the interface of bone and cartilage in the sacroiliac joint and bone and fibrocartilage in the enthesis. Macrophages and $CD4^+$ and $CD8^+$ T cells are present, and the proinflammatory cytokines tumor necrosis factor-α (TNF-α) and interleukin-23 (IL-23) are abundant.

Synovial tissue becomes inflamed, and osteoclasts are activated, leading to bone resorption, reminiscent of rheumatoid arthritis joint inflammation. Unlike in rheumatoid arthritis, early bone resorption is followed by a secondary phase during which osteoblast activity predominates, leading to new bone formation in periarticular bone (i.e., hyperostosis) and around joints (i.e., osteophytosis) or vertebral bodies (i.e., syndesmophytes). Ultimately, bony fusion of joints (ankylosis) occurs. The relationship between these paradoxical phases of bone resorption and proliferation is an area of active investigation.

CLINICAL PRESENTATION

Common Clinical Features of Spondyloarthritis

All forms of spondyloarthritis have considerable clinical overlap with one another and are most easily considered as a group of related disorders. Table 78-1 outlines the clinical features of these disorders. The cardinal clinical features common to all of them are inflammatory spine pain and an asymmetrical, predominantly lower extremity inflammatory joint or tendon disease. Inflammatory spine pain should be suspected in young patients (<40 years) who have an insidious onset of chronic low back pain or buttock pain associated with prolonged morning stiffness and relieved by exercise.

The characteristic peripheral joint disease involves one to four joints, usually in the lower extremities, and may be associated with tendon insertion inflammation (i.e., enthesitis) or sausage digits (i.e., dactylitis). Symmetrical polyarthropathy involving the upper extremities and clinically similar to rheumatoid arthritis is seen in some forms of psoriatic or inflammatory bowel disease–related spondyloarthritis. Anterior uveitis, enthesitis, dactylitis, psoriatic skin or nail changes, inflammatory bowel disease, a family history of spondyloarthritis, or a history of preceding gastrointestinal or genitourinary infection suggests spondyloarthritis. Subcutaneous nodules, rheumatoid factor, and antinuclear antibodies are usually absent.

In a given patient, the clinical features of these disorders may accumulate over a prolonged period. Some patients do not initially demonstrate the typical findings of a specific disorder. They are considered to have undifferentiated spondyloarthritis. Early disease can be subcategorized as predominately axial spondyloarthritis or predominately peripheral spondyloarthritis, depending on the site of the dominant symptoms. Many patients later have clinical findings consistent with a specific subtype of spondyloarthritis.

Inflammatory spine pain is the cardinal feature of axial disease and results from inflammation in the sacroiliac joints and spinal elements. Uncontrolled disease may lead to ankylosis (i.e., bony fusion) at sacroiliac joints and throughout the vertebral column, culminating in loss of spinal and costovertebral motion, deformity, and restrictive extrapulmonary physiology.

Enthesitis can occur in many different anatomic locations. They include spinous processes, costosternal junctions, ischial tuberosities, plantar aponeuroses, and Achilles tendons.

When peripheral arthritis of spondyloarthritis occurs, it frequently begins as an episodic, asymmetrical, oligoarticular process that often involves the lower extremities. The arthritis can progress and may become chronic and disabling. A unique feature of spondyloarthritis is the appearance of fusiform swelling of an entire finger or toe, referred to as *dactylitis* or *sausage digits*.

Anterior uveitis, or inflammation of the anterior chamber of the eye, is a common extra-articular manifestation of spondyloarthritis, especially among HLA-B27–positive patients. Acute bouts of uveitis are usually monocular, painful, and accompanied by eye redness and blurred vision. Recurrent attacks are common and can lead to blindness. Scleritis, episcleritis, and conjunctivitis are less commonly associated phenomena.

Spondyloarthritis may occasionally involve other organ systems and may cause significant morbidity and mortality. Aortitis, especially occurring in the ascending segment, can result in aortic insufficiency from aortic root dilation, aortic dissection, and cardiac conduction system abnormalities. Pulmonary fibrosis of the apical regions can occur, often in an insidious fashion. Spinal cord compression can result from atlantoaxial joint subluxation, cauda equina syndrome, or vertebral fractures. In rare cases, long-standing spondyloarthritis is associated with secondary amyloidosis.

TABLE 78-1 COMPARISON OF THE SPONDYLOARTHRITIS

FEATURES	ANKYLOSING SPONDYLITIS	POSTURETHRAL REACTIVE ARTHRITIS	POSTDYSENTERIC REACTIVE ARTHRITIS	ENTEROPATHIC ARTHRITIS	PSORIATIC ARTHRITIS
Sacroiliitis	+++++	+++	++	+	++
Spondylitis	++++	+++	++	++	++
Peripheral arthritis	+	++++	++++	+++	++++
Articular course	Chronic	Acute or chronic	Acute or chronic	Acute or chronic	Chronic
HLA-B27	95%	60%	30%	20%	20%
Enthesopathy	++	++++	+++	++	++
Extra-articular manifestations	Eye, heart	Eye, GU, oral and/or GI, heart	GU, eye	GI, eye	Skin, eye
Other names	Bekhterev's arthritis, Marie-Strümpell disease	Reiter's syndrome, SARA, NGU, chlamydial arthritis	Reiter's syndrome	Crohn's disease, ulcerative colitis	

Data from Cush JJ, Lipsky PE: The spondyloarthropathies. In Goldman L, Bennett JC, editors: Cecil textbook of medicine, ed 21, Philadelphia, 2000, Saunders, pp 1499–1507.

GI, Gastrointestinal tract; GU, genitourinary tract; HLA, human leukocyte antigen; NGU, nongonococcal urethritis; SARA, sexually acquired reactive arthritis; +, relative prevalence of a specific feature.