Rehabilitation of a Rower Diagnosed With Undifferentiated Spondyloarthropathy

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SPONDYLOARTHROPATHIES are defined as chronic inflammatory rheumatic diseases that affect bony insertions of ligaments and tendons, the axial skeleton, including the sacroiliac joints, and non-articular structures.\(^4\) Diagnosis of undifferentiated spondyloarthropathy is extremely rare, with a prevalence of only 0.67% in the general population.\(^3\) The condition is more common in females, and the average age at diagnosis is 53 years.\(^3\) The purpose of this report is to educate athletic trainers about the spondyloarthropathies and their treatment.

**Case Report**

A 17-year-old female high school senior rower presented left knee pain, back pain, and bilateral hip pain, which was more severe in her right hip. The knee and back pain began two weeks prior to evaluation, and the hip pain had been present for a year and a half. The hip pain initially presented during running, but was absent during rowing. Over time, the hip pain during rowing progressed to 6/10 on a numerical pain scale (NPS). Her knee pain fluctuated between 2/10 and 3/10 on the VAS during activities of daily living. Prior to examination by the athletic trainer, she was seen by a family physician and multiple orthopedic physicians. There was no consensus and interventions were unsuccessful. After an MRI, she was properly diagnosed with spondyloarthropathy by a rheumatologist.

Postural assessment revealed a forward head position, kyphotic shoulder posture, and diminished lordotic curvature of the lumbar spine. Active range of motion of the hips and knees was pain-free, but active lumbar flexion and extension while standing was limited due to pain. Passive left knee flexion was limited by 10 degrees, with a firm end-feel; passive left knee extension was limited by 5 degrees, with a firm end-feel; passive right hip flexion was limited by 15 degrees, with a firm end-feel; and right passive hip adduction was limited by 5 degrees, with a firm end-feel. All other motions were within normal limits. The physical examination also revealed a positive Thomas test for hip flexor tightness and a positive Ober’s test for iliotibial band tightness. Gait assessment revealed a Trendelenburg gait. Strength assessment and lower quarter neurological function were within normal limits. Distal lower extremity pulses were normal. A magnetic resonance image revealed bilateral hip joint effusion, but no identifiable pathology of the lower back. Radiographs did not demonstrate any evidence of periosteal bone formation.

**Key Points**

- Undifferentiated spondyloarthropathy is uncommon in the general population.
- Undifferentiated spondyloarthropathy involves genetic and environment factors that create a predisposition for development of chronic inflammation.
- Patient education, postural awareness, core strengthening, and flexibility training are important components of an effective treatment plan.
When evaluating a patient with such signs and symptoms, the differential diagnosis should include juvenile rheumatoid arthritis, spondylolysis, spondylolithesis, tumor, lupus, and undifferentiated spondyloarthritis. The athlete’s final diagnosis was undifferentiated spondyloarthritis.

A seven-week rehabilitation program was initiated with the following goals: decreasing pain, improving flexibility, improving core strength, and making a full return to rowing. The patient was prescribed an anti-inflammatory medication, Sulfasalazine, for pain and post-exercise cryotherapy was administered to reduce pain and inflammation. Lower extremity and low back flexibility training was performed before and after all rehabilitation exercise routines. Patient education included in-depth instruction pertaining to maintenance of proper postural positioning during activities of daily living and proper techniques for performance of various stretches to isolate the muscle groups of the lower extremity (see Table 1).

The patient was limited in her running endurance training during the first three weeks of rehabilitation and then was gradually allowed to run longer distances. During the fourth week, a core-strengthening program was initiated, which consisted of pelvic/core position awareness exercises, bridge exercises, and prone extension exercises, with progressively more challenging variations to maintain interest. The core-strengthening program was performed six times per week, along with a dynamic warm-up regimen that consisted of the flexibility exercises previously introduced. At the end of the program, the patient was able to participate in rowing at a very comfortable level, and she was highly satisfied with the extent to which the program had increased her functional abilities.

**Discussion**

Spondyloarthropathies are a group of disorders which include, but are not limited to, ankylosing spondylitis, Reiter syndrome, reactive arthritis, psoriatic arthritis, spondyloarthritis (with associated inflammatory bowel disease), and undifferentiated spondyloarthritis. Spondyloarthropathies have an unknown etiology, but environmental and genetic factors clearly play a role in its occurrence. 1-4

Signs and symptoms of this group of chronic inflammatory disorders include fatigue, fever, weight loss, inflammatory back pain, peripheral enthesitis (i.e., inflammation of ligament and tendon insertion sites), lordotic lumbar posture, and kyphotic thoracic posture. Extraarticular signs and symptoms can involve the cardiovascular, pulmonary, renal, neurologic, and gastrointestinal systems.

Undifferentiated spondyloarthritis is diagnosed when a patient does not fit any of the criteria for other spondyloarthropathies within the group of disorders. 1,2,3 The process of making the diagnosis involves use of the Undifferentiated Spondyloarthritis Modified Amor Criteria. 4 By a three to one ratio, the condition is more commonly diagnosed in females. The onset is insidious and extraarticular manifestations are uncommon with undifferentiated spondyloarthritis. In many cases, radiographs do not provide any indication of the existence of an inflammatory disorder. 1

A patient’s symptoms can be present intermittently, but more than 70% of patients have symptoms that are constant and ongoing. 1 The typical treatment regimen for undifferentiated spondyloarthritis includes

| Table 1. Treatment Progression – Specific to Athletic Training Rehabilitation |
|---------------------------|---------------------------------|
| Time Frame | Goals and Treatment |
| Weeks 1–2 | • Rest from activity  
|  | • Pain reduction  
|  | Cryotherapy (as needed)  
|  | • Patient education  
|  | Treatment progression  
|  | Postural adjustments  
|  | Proper ergonomics |
| Week 3 | • Dynamic warm-up progression (some examples)  
|  | Lunge variations  
|  | Cross leg touch downs  
|  | • Flexibility training with lower extremity focus  
|  | Hamstring  
|  | Iliopsoas  
|  | Gastrocnemius/Soleus Complex  
|  | Quadricep |
| Weeks 4–7 | • Core Strengthening  
|  | Pelvic/core awareness exercise  
|  | Bridges with progressions  
|  | Prone extensions with progressions  
|  | • Improve cardiovascular fitness |