Body One
PHYSICAL THERAPY

MEDIAL TIBIAL STRESS SYNDROME

Medial tibial stress syndrome (MTSS) is prevalent in patients who engage in repetitive running and jumping activities. Intrinsic risk factors described in the literature are pes cavus or planus, excessive pronation, leg length discrepancy, and muscle inflexibility (especially of the soleus). Extrinsic factors include improper shoewear, hard training surfaces, inadequate conditioning, or any sudden change in exercise parameters.

History and Clinical Exam:
Symptoms may arise from periostitis due to chronic excessive traction of the soleus at the periosteal-fascial junction, stress fracture or stress reaction of the bone, or chronic posterior compartment syndrome. Osseous involvement has been linked to mechanical stresses occurring during bony adaptation when osteoclastic activity temporarily exceeds osteoblastic activity.

The hallmark of medial tibial stress syndrome is exercise-induced pain at the posteromedial tibia. Palpation usually reveals tenderness at the middle-to-distal third of the medial tibial border. Weak and painful plantar flexion may also be noted.

Diagnosis:
The differential diagnosis for leg pain in an active population includes stress fracture, periostitis, muscle strain or tear, tendinopathy, chronic compartment syndrome, interosseous membrane strain or tear, nerve or artery entrapment syndromes, radiculopathy, and vascular disease.

If patients do not respond to initial conservative care, further diagnosis can be facilitated by radiographs, MRI, bone scintigraphy, or compartment pressure measurements. However, both bone scanning and plain films may fail to detect early stages of injury or stress microfracture, so the clinician must depend on history and palpation.

Treatment:
Successful conservative management of MTSS must address not only symptoms but the biomechanical imbalances and training errors which contribute to stress overload. Physical therapists may perform a biomechanical exam to identify structural and functional deformities, and provide orthotic or shoewear recommendations. Patients should be guided through a cross-training program to maintain the highest possible painfree level of activity while protecting

injured tissues. Stretching and strengthening exercises must be judiciously implemented to prevent excessive stresses on healing bone and connective tissue.

Body One Physical Therapy is dedicated to progressive and evidence-based therapeutic techniques. Please contact us at 581-1890 with any questions.

References

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