

Shin splints in athletes

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“Shin splints” (medial tibial stress syndrome; MTSS) is one of the most common acute and overuse leg injuries seen in runners and ballistic sports. Whilst not clearly understood, the pathology is thought to represent a periosteal stress or inflammatory reaction.

Clinical presentation

Typically there is dull pain over the posteromedial lower half to one third of the tibia. Early on, symptoms are present at the beginning of activity, subsiding after warm up. As the condition worsens symptoms persist for longer: in more severe cases symptoms persist on cool-down and may even be present at rest. Pain may last for several hours or days after exercise and be present during normal activities, including walking.

A comprehensive history should be obtained to evaluate the athlete's weekly exercise routine, running mileage, intensity, pace, terrain and footwear.

Careful attention should be paid to recent changes in training. A common scenario is an increase in intensity or duration, or running on hard or uneven surfaces. Risk factors include being female, and previous lower limb injury. Recovery time ranges from four weeks to 18 months but recurrence is common.

Differential diagnosis

Tibial stress fractures generally present with more localised tenderness, particularly on weight bearing, usually over the mid or anterior third of the tibia – pain at night, on percussion, at rest and on walking is more likely.

Anterior compartment syndrome presents with exercise-related pain, with or without neurological symptoms. The patient will point to the anterolateral lower leg. A posterior compartment syndrome is generally described as being further posterior and more over the soft tissues, compared to MTSS. The symptoms should resolve within minutes on cessation of activity, with no post-exercise tenderness. Pain lasting for up to two days has been observed clinically. MTSS and compartment syndrome may co-exist.

Diagnosis of MTSS is clinical and usually straightforward. If there is uncertainty, particularly concern about a stress fracture, bone scintigraphy and MRI are the investigations of choice.

Treatment and prevention

Quality research in this area is limited. There is some (albeit conflicting) evidence for shoe inserts and orthotics. Appropriate footwear, replaced every 800-1100 km of activity is important. Training factors, including adjustments to loading, graded

exercise, cross-training, muscle stretching and strengthening and biomechanical correction have anecdotal evidence or clinical endorsement, but limited supporting evidence.

With a strong index of suspicion of significant ligament injury, early referral is suggested. ●

References available on request.



Case study

A 20-year-old recreational female volleyball and basketball player, doing seven hours of activity a week, complains of pain in the middle one-third of the posteromedial tibia after prolonged running. Biomechanical running style analysis shows habitual running on toes with no heel strike (forefoot contact running). Adopting heel-toe running style led to symptom resolution.