Case Study

Medial Tibial Stress Syndrome

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Patient: 24 year old male Australian football player

Medial tibial stress syndrome (MTSS), often referred to as "shin splints" is a frequent overuse lower extremity injury, characterised usually by exercise induced pain along the posteromedial aspect of the distal two thirds of the tibia. "Shin splints" is a general term to describe a number of different potential pathologies. There are several predisposing factors for MTSS; having a poor technique, improper warmup routine, increasing training schedules before being ready to do, or high impact sports contribute as does training on hard surfaces or uneven terrain. A previous leg injury may increase risk of issues. Biomechanical factors can contribute in addition to footwear suitability and design for the activity being undertaken.

Current Situation

I recently saw a 24 year old state-level Australian Rules footballer with a 2-year history of bilateral shin pain. He presented with 2-year history of bilateral medial tibial stress syndrome, and occasional calf issues. He had been treated by a podiatrist when the injury initially presented itself, and was prescribed custom made rigid orthoses.

The patient could not tolerate the orthoses and after 6-months of trying, he removed them from his sport shoes. The patient continued to try and play but toward the end of the first season, was forced to miss 6-weeks of games. He had a further 6-week's rest in the off-season before commencing pre-season training again. In the meantime, he had changed his football boots and runners, had regular massage, and occasionally took anti-inflammatory medication for the pain. Mid-way through his second season, the patient visited our clinic after struggling with his shin soreness for 5-weeks.

Assessment

On examination, the patient appeared to have normal ranges of movement through the hip joint, no apparent leg length discrepancy, and slight hamstring tightness. He had normal range of movement in the sub talar and mid tarsal joints – although on the slightly stiffer side. He had adequate ankle joint dorsi flexion, and tight calves. He exhibited a moderate amount of foot pronation, and had not tolerated orthoses in the past. The pronation was a combination of rearfoot and midfoot, and he did exhibit a secondary internal tibial rotation.

Diagnosis

We assessed the mixed aetiology of bilateral medial tibial stress syndrome (MTSS), and deep posterior compartment syndrome.

Treatment

At the time of the consultation, the patient was issued a pair of Single Hard Formthotics with extended rearfoot wedges that were ground slightly at the distal edge of the wedges. He was advised to adjust to these mechanical changes over the first week and in the second week; he was to run in them in his runners. Once this was comfortable, he was advised to wear them in his football boots.

The patient was to continue the management plan that he was already doing – regular massage, stretching and post activity icing.

6-weeks after the initial consultation, the patient's symptoms were reviewed, and he presented a very happy young footballer. Whilst he still had an element of calf tightness, he was not experiencing any sharp medial shin soreness, and had been able to play the past 2 games in full without medication.

The patient was monitored for the following 6-months and continued to be pain free. After 9-months, the Formthotics were updated for his running shoes, and the older pair was worn in the football boots. The Formthotics were better tolerated by the patient when compared to the rigid devices.

MTSS is an impact-related pain, and I feel Formthotics are ideal to control some of the mechanical influences of the pains, without creating a "hard" platform within the sports shoe.