

## Why Motion Palpation Postgraduate Courses Are a Great Idea for Everyone: a Lesson in a Biomechanical Cause of Heel Spurs.

Heel spurs are a very common complaint and the causes are as varied as the people who get them. The textbooks include items such as micro and macrotrauma, traction of the structures of the plantar surface that insert or arise from the calcaneus, dysfunction of the twisted osteoligamentous plate and a host of other terms. The one fact that never seems to be mentioned is that heel spurs are a symptom of compensatory biomechanics secondary to a primary dysfunction somewhere else in the body.

A patient that presented to my clinic within the last few weeks was examined by myself and in the presence of a chiropractic college student doing her perceptorship for Logan College of Chiropractic. The patient, a middle-aged female who works in a distributing warehouse, developed bilateral heel spurs approximately seven years ago. (Only the positive and relevant facts pertaining to the spurs will be mentioned here.) The patient had seen her medical doctor, physiotherapist, podiatrist, two orthopedic surgeons, and a chiropractor. The chiropractor referred this patient to my office. The previous treatment included nine cortisone shots (five in the left heel and four in the right heel); physical therapy (all aspects of it); orthotics, special shoes and medications. None of these treatments worked! Why? Because all of the aforementioned treatments were directed at the symptoms and not at the cause of the problem. The pain was at the heel spur location but the cause was not and although she received symptomatic relief she was never cured of the ailment.

The orthotics were inspected and found to be nothing other than rear foot posted arch supports, helping only in the initial stages by introducing a new weightbearing situation to the foot, thereby altering the relationship between mechanoreceptor input and nociceptive input which results in "fooling" the nervous system and bringing temporary relief. This is exactly what happened, and after a few months she was as bad as when she started. The therapy and all other treatment were directed at the pain site and once again gave temporary relief. All of the treatment to this point is and was directed at the symptoms.

Examination of the patient revealed the following:

1. The right foot, during the squat test, displayed a hyperpronation of the transverse tarsal joint, a lateral foot flaring and an early heel off.
2. The right calcaneus and the talus, as a unit, were everted while maintaining a bisection of the Achilles' tendon to the base of the calcaneus at 90 degrees.
3. The right tibia rotated internally to its maximum on squatting and at 45 degrees the rotation caused a valgus formation of the knee joint to become significantly exaggerated. The popliteus was in spasm and the talus was hypomobile with respect to talar tilt.

4. The right femur in the acetabulum, because of the extreme rotation of the tibia, moved to an anterior and forward position causing a shift in the axis of rotation and a subsequent anterior rotation of the pelvis on the right side. All motion palpation joint-play tests for the hip joint were found to be positive with horizontal adduction and external rotation producing excruciating pain on challenge.
5. The firing order of the pre and posterior tibial muscles during heel strike to late mid-stance phase of gait were bilaterally asynchronous in nature and causing gait to be compensatory in nature.
6. The entire pelvis was shifted to the left with the left iliosacral joint rotated posterior in the neutral postural position and compensatory to the anteriorly rotated right ilium.
7. The left femur was in a position of relative external rotation and the tibia and rear foot displayed a lateral flaring throughout the gait cycle. Judets' views of the posterior rim of the acetabulum revealed a large spur formation and some degenerative joint destruction along the posterior rim and acetabulum itself.
8. The rear subtalar joint was hypomobile and eversion was not present in any of the stages of gait. The middle and anterior portions of the subtalar joint along with the navicular (talocalcaneonavicular joint) followed the concave convex rule and allowed for exaggerated compensatory mid-foot and fore foot pronation to maintain a line of progression through the triplanar axis of the subtalar joint. With the rearfoot dysfunctional the resultant ground reactive forces on the first ray complex, the windlass effect of Hicks, and the "lock up" of the converging axes of the transverse tarsal joint were all absent.
9. The arthrokinetic reflex was positive bilaterally for external rotation dominance and the patient displayed some low-grade right PSIS pain. The pain was totally obliterated utilizing the posterior rotation test of the pelvis (Mennell) to the left.

So what was the cause of the patient's heel spurs?

If we consider the chain of events starting from the right foot, we can be certain that the foot abnormalities are nothing other than an illusionary expression of the right knee and subsequent hyper-rotation of the tibia. The tibial motion was a consequence of the acetabular dysfunction and an attempt by the body to alter the weightbearing posture. The shift of the pelvis to the left is once again an attempt by the body to alter its weightbearing so as to be pain free. This shift also caused the left femur to compensate and therefore resulted in a lateral foot flare and a rear foot posterior subtalar joint hypomobility. The mid-foot and fore foot compensatory changes and the above mentioned biomechanical failures are nothing other than biomechanical pathologies that result in symptoms. The torsion on the twisted osteoligamentous plate that results from this state is more than enough to create the necessary traction on the calcaneus to result in a very large heel spur.

The primary cause, in case you missed it, is the right acetabular dysfunction. All of the other findings are to be considered secondary findings and, although important, are not the area of initial

treatment. The treatment was directed at correcting the arthrokinetic reflex of the hip joint first, as that is what maintains the dysfunction. The acetabular joint fixations were dealt with next, followed by the right iliosacral joint subluxation. The bilateral popliteal spasms and the firing order re-education followed next. The posterior joint of the subtalar joint was adjusted for its dysfunction in the following manner. The joint is a concave convex relationship and the direction of slide of the bone is in the opposite direction to the movement of the joint, therefore the calcaneus was adjusted to the talus in a clockwise direction with sagittal glide on a drop piece. The right talus was adjusted for medial talar tilt utilizing a long axis of extension and a drop piece. To give the patient some quick pain relief she was given a couple of ultrasound treatments. The orthotic/arch supports were trashed as they were ordered from a point of view of gross ignorance and lack of understanding of foot and body biomechanics.

The end result of this is a patient who is indeed happy and after only six visits is enjoying an almost pain free life for the first time in many years.

This type of rational thinking and diagnostic decision making is what is taught at all MPI seminars. MPI's commitment to providing you with the most up-to-date concepts and treatment protocols is why the seminars are changed on a continual basis. The above example is not an isolated case by any means, but I wonder how many doctors would have treated the symptoms. Chiropractic treats the cause -- if you can find it!

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