Plantar Fascitis

36 years in the NBA

Frequency of Plantar fasciitis

- Ranged over the years of 2-4% of the NBA players / year
- Plantar fasciitis vs Rupture or tear of Plantar fascia
  - 7 players in 1997 in the NBA
- Foot type:
  - Pes Planus-Karl Malone
  - Pes cavus-Mark Eaton
  - “normal”-John Stockton

Special Thanks

Rupture

- Plantar fascia ruptures usually present with the sound/feeling of a “pop”
- Acute pain
- Eccyhmosis and swelling
- Inability to push-off of the foot or to fully weight-bear without significant pain.
- Once the fascia is ruptured, little can be done to repair it and it usually is left to form scar tissue to bridge the gap created.

Treatment of the rupture

- Usual treatment after rupture consists of the use of a removable walking boot and crutches for the athlete to remain non-weight bearing for 1-2 weeks.
- Once the athlete can bear weight pain free in the walking boot (1-2 weeks), they may dispense with the use of the crutches
- Continue with the boot (1-2 weeks), finally transitioning to (supportive) shoes when able.
  - A shoe with proper shank will greatly diminish pain with ambulation
  - Orthotic control post recovery but not immediately with shoe gear

Treatment options?

- Platelet Rich Plasma or PRP injections?
- One study presented at the AAOS meeting in 2012 showed earlier improvement and longer lasting improvement in comparing a single injection of steroid in a group of patient's vs a single PRP injection in a group of patients. (Monto R. Platelet-Rich Plasma is More Effective than Cortisone for Chronic Severe Plantar Fasciitis Paper presented at AAOS 2012)

Implications of plantar fascial rupture

- Uncontrolled “endoscopic” fascial release
- Once the fascia is healed it is almost always longer, at the medial & or central band, than it was prior to rupture.
- While this may decrease local medial and plantar heel pain-
- It may create some instability issues to the foot:
  - Lateral column pain (medial column less stable-thus more pressure to the lateral column.
  - May place more pressure to forefoot from pronatory changes due to medial column lengthening, thus higher risk of stress fracture to metatarsal region.
  - Hammertoe deformity?

Orthotics

- Custom foot orthoses, if prescribed correctly, can combat most of the forces that will lead to chronic plantar fascitis as well as plantar fascia rupture before and after occurrence.
- Ruptures do still occur in some athletes who are wearing orthotics.
- The shoe has a profound influence upon the orthotic.
- The orthotic needs to be worn full time, not just “game” time.
- If the orthotic is not giving the control or relief that you expect, recast the foot for a new device.
  - Orthotic material: polypropylene (low density vs high density)
    - Soft vs hard material. (early scar tissue-soft, 12 weeks firmer orthotic)

What not to do-Larry Krystkowiak

Karl Malone

- 2 time NBA MVP
- 2nd leading scorer in hx of NBA (behind Kareem)
- 18 seasons with Utah Jazz
- NBA All star 14 times
- All defensive team 4 times
- All star game MVP 2 times

John Stockton

- Hall of Fame
- 11 time NBA All star
- 5 time all defensive NBA
- NBA all time record for Assists (3,000 more than Jason Kidd in 2nd place)
- NBA all time record for steals

Shoe Gear in NBA

NBA Shoes

- Stockton played 1997 NBA finals in Tennis shoes- that had a strong shank
- Karl would often changes shoes at half time (new shoe)
  - Ripped uppers frequently
- Proper shoe gear has a strong relationship to the performance and stability of foot function within the shoe. (1997-8, 7 fascial ruptures)
- This being said, much has changed with the use and function of shoe gear. Shoes have gotten much lighter (not unlike the changes to running shoes — think minimalist).

Shoe gear fatigue

- In my experience, most runners are encouraged to replace shoe gear every 350 to 500 miles, depending upon the size and weight of the runner, and his or her running environment
- average runner will spend approximately 66 hours running to accumulate 500 miles on a pair of running shoes (8 minute/mile pace times 500 miles).

Basketball shoe fatigue

- the average high school or college basketball athlete will easily work out 72 hours per month----Shoe should be replaced MONTHLY!
- Basketball shoes are now made of the same types of materials, namely ethyl vinyl acetate (EVA) or a polyurethane midsole and harder outer sole material. These materials all have a fatigue/compression factor that greatly influences function of the foot and stress delivered to bone and adjacent soft tissue structures

Utah Jazz shoes

- On the Utah Jazz, I recommend that players change shoes at least every two weeks and that the larger players (250-300 lbs.) change their shoes at least weekly, if not sooner.
- Not uncommon for Karl Malone to go through 2 pair of shoes in a game-torn uppers, upper coming loose from the sole material.
- As the player accumulates hours of wear on the shoe, the leather or synthetic uppers slowly begin to stretch and/or fatigue in response to the repetitive rotational forces as well as the considerable moisture buildup that occurs.

Shoe fatigue

- midsole material slowly deforms or compresses in response to the repetitive ballistic starting and stopping of the workout or game.
- As these external forces to the shoe continue, the rotational movement of the foot within the shoe slowly increases the motion and velocity, and thus slowly begins to decrease in its ability to diminish the external forces to the foot structure.
- Indeed, worn out shoe gear is certainly one of the great causes of metatarsal stress fractures (jones fracture) and plantar fasciitis.

Changes over the years

- 1979 No one was using an orthotic with the Utah Jazz
- 1990 53% of players in the NBA wear using an “orthotic”
- 1979 Most common shoe was the Chuck Taylor Converse shoe
- 1979 All players wore a high top basketball shoe
- 1991 70% of players wore a high top basketball shoe
- 2019 10% of players wear a high top basketball shoe
- 2019 45% wear mid high top basketball shoe
- 2019 45% wear low top basketball shoe

No shank in the shoe?

- Would place a 1/16 inch clear (low density) polypropylene plastic shank, glued to the inner sole of the shoe, the replace the top cover.
  - 2 inches wide from heel to just behind 2nd metatarsal head (beveled).