1 **TO TREAT OR TAKE THE BACK SEAT**

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2 **DISCLOSURES**

- Paid Consultant and Lecturer Bioventus
- Paid Consultant and Lecturer Arthrex
- Paid Consultant Zimmer
- Paid Consultant Tornier
- No impact on this lecture

3 **OBJECTIVES**

- Understand basic foot and ankle anatomy and how it correlates with common foot and ankle conditions.
- Identify common foot and ankle orthopedic conditions that exist and how to non-operatively manage them
- Offer different treatment strategies for basic foot and ankle pathologies and know when to refer to a specialist

4 **PLANTAR FASCIITIS/FASCIOSIS**

- Most common cause of heel pain
- > 1 million/year*
- Fascititis that becomes a fasciosis
- Medial plantar heel pain=MCT
- Start-up pain="first steps in the morning"
- Pain AFTER exercise not during
- Tarsal tunnel syndrome
- Obesity, GSC contracture, pes cavus
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* Goff J. Crawford J. Diagnosis and treatment of plantar fasciitis. Am Fam Physician 2011 Sep 15; 84(6):678-82

5 **REFER FOR A PLANTAR CALCANEAL SPUR?**

- Is it irrelevant
  - 1/10 have heel spurs; 1/20 (5%) with heel spurs have foot pain*
  - Significant association b/w plantar fasciitis and spur formation
- Plantar heel spurs can be classified by shape and size**

- 109 patients
- Heel spur shape and size correlated to function/pain before and after treatment
- Larger horizontal/more hook=greatest improvements

6 **PLANTAR FASCIITIS**

- Exam---touch the patient!
- Radiograph-mostly for alignment and ? Spur
- U/S and MRI
- Consider EMG/NCV

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So…. To treat or take the back seat?

8 **TREAT!!!!!**

- Activity modification
- RICE
- NSAID's
- Achilles, GSC and PF stretching*
- Night splints
- Arch supports
- CAUTION-CSI-LOW QUALITY evidence compared to placebo with slight reduction in pain at 1 mo(39 studies, 36 RCT's
  Cochrane Database Syst Rev. 2017 Jun; 2017(6).
- ESCWT
  Extracorporeal shock wave therapy is effective in treating chronic plantar fasciitis. Nov 2013. A meta-analysis of RCTs. Jiale Sun, MD,[a] Fuqiang Gao, MD,[b] YanhuaWang, MD,[c] Wei Sun, MD,[b,*]Baoguo Jiang, MD,[c,*] and Zirong Li,MD[b]
- BOTOX
  at 6 and 12 mos IBTA > saline; 0% IBTA group-surg and 12% saline group-surg
  Foot Ankle Int. 2017 Jan;38(1):1-7. doi: 10.1177/1071100716666364. Epub 2016 Oct 1.Treatment of Plantar Fasciitis With Botulinum Toxin.Ahmad
  •

9 **PLANTAR FASCIITIS TREATMENT**

- 84 Ortho MD's responded: @4 months
- 37(44%) favored PFSS
- 20(24%) supervised PT
- 17(20%) night splinting
- 3(4%) custom orthosis
- 2(2%) cast or boot immobilization

- 46(55%) surgery at 10 months
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Foot Ankle Int. 2012 Jun; 33(6):507-12. Preferred management of recalcitrant plantar fasciitis among orthopedic foot and ankle surgeons. DiGiovanni BF, Moore,AM, Zlotnicki JP, Pinney SJ.

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10 **RECOMMENDATION**

- Non-surgical treatment at least 9 months(90-95% improve at 12-18 months)
- Heel padding, orthosis, splinting, PT/stretching and NSAIDs

11 **THE LISFRANC**

- Jacques de Lisfranc de st. Martin-Napoleonic Army
- Can be high or low energy trauma
- Low energy OFTEN missed
- Keystone critical
- No connection of first to second metatarsal

12 **MECHANISM**

- Sports-football, soccer
- Twist and fall
- Hyperplantarflexed foot with axial load
- Fall from height
- MVC

13 **YOU NEED TO HAVE THE SUSPICION**

- Plantar ecchymosis
- Pain with palpation midfoot
- Abduction pain
- Piano Key test
- Single rise
- Fleck sign

14 **YOU MAY HAVE NOT SEEN IT BUT IT HAS SEEN YOU!**

- Get a weight bearing xray
- Comparison view
- Something looks suspicious or fracture=CT
- Normal xrays and suspicious exam=MRI
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So…. To treat or take the back seat?

16 **TAKE THE BACK SEAT AND REFER!!!**

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- Keep the patient NWB
- Splint/offload
- Will need surgical evaluation

17 **ACHILLES TENDINITIS/TENDINOPATHY**

- 6.5-18% runners
- Gastroc and soleus coaltion(tricepts surae)
- Spirals 30-150 degrees(medial fibers rotate posteriorly)
- No synovial sheath
- Crosses 3 joints
- PF of ankle
- Supinates ST joint
- 10 times body weight during running
-

Am J Sports Med. Mar-Apr 1978;6(2):40-50

18 **PERFUSION IS KEY**

- Distal OT junction
- Proximal MT junction
- Paratenon=tenovagium
- PTA
- Peroneal Artery
-
-
- Watershed area
-

J Orthop Res. 1998 Sep;16(5):591-6

Clinical Basic Science Concepts. Chicago, American Academy of Orthopaedic Surgeons, 1989

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19 **PERITENDINITIS**

- Burning pain during/after activity
- Diffuse tenderness, swelling
- Microtrauma
- Repetitive inflammation can lead to adhesion

20 **PERITENDINTIS**

- 82/109 overtrained

- Poor foot wear
- Hyperpronation(61/109)
- Poor flexibility (41/109)
- STRETCH!
-
-

Am J Sports Med June 1984 vol. 12 no. 3 179-184

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So…To treat or take the back seat??

22 **TREAT!!!**

- Rest, ice
- NSAIDS
- Activity modification
- Heel lift
- Brisement(controversial but low risk)
- Surgery last resort/exhausted non-op
- 109 runners
  - Rehab GSC, no immobilization, control pain/inflamm
  - 73 excellent, 12 good results with recovery by 5 weeks
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Am J Sports Med June 1984 vol. 12 no. 3 179-184

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23 **NON-INSERTIONAL ACHILLES TENDINOSIS**

- NON-inflammatory, degenerative
- Mucoid degeneration
- Milder pain/nodule/thickening
- Gradual onset, limited DF
- Overuse
- High heel counter
- Heel varus
- Tight achilles
- Cavus foot
-

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So…To treat or take the back seat?

25 **TREAT!!**

- NSAIDs, rest, ice, activity modification
- Wavering course
- Trial lift, PT, shoe modifications-supervised 2-3 months
- Fails all non-op=Surgery
- Role of PRP/BMAC

26 **ACHILLES RUPTURE**

- Largest tendon in the body
- Vulnerable to injury-"the achilles heel"
- Gastroc/soleus to calcaneus
- Most commonly watershed
- MTJ do better
- Not to be confused with "split tears"

27 **HISTORY IS PARAMOUNT**

- Did they have an injection?
- Antibiotic use?-Quinolones
- Pre-existing disease?
- Audible pop-"felt like I was kicked"
- Sometimes can walk
- "told it was just a sprain"
-
- IF YOU DON'T TAKE ANYTHING ELSE AWAY…DON'T PUT STEROIDS IN AN ACHILLES TENDON!! NOT WORTH IT!

28 **ALL I EVER *NEED* IS THE EXAM**

- Contour
- Palpable defect
- Thompson Test
- Matle's test

29 **MADE THE DIAGNOSIS, THEN WHAT?**

- EQUINUS!
- Boot/wedge, splint
- IF you get an MRI-make it STAT

30

So…To treat or take the back seat?

31 **BOTH!!!!!**

- YOU CAN ALWAYS FEEL COMFORTABLE REFERRING BUT….
- Great Level 1 evidence for non-op management*
- Athletes of any kind=refer
- I want/need quicker return to sport=refer
- Diseased tendon/rupture=refer
- Comorbid=can keep
- MTJ=can keep

** MUST DO FUNCTIONAL REHAB and FOLLOW PROTOCOL

32 **SUMMARY**

- Don't underestimate the power of the weight bearing Xray
- The vast majority of the "-itis" conditions in F&A can be treated non-operatively first
- Don't be part of the group of providers who most commonly miss achilles ruptures (not split tears) and Lisfranc injuries
- Develop a relationship with the surgeons to allow free communication and ask questions

33 **QUESTIONS?**

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34 **THANK YOU!**

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