Metatarsalgia: Predislocation syndrome Vs. Neuroma
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Richard E. Hammond, DPM, FACFAS

-Fellow American College of Foot and Ankle Surgeons
-Diplomate American Board of Podiatric Surgery
• Metatarsalgia????

Predislocation Syndrome

or

Neuroma???
Metatarsalgia

• Related conditions
  – Morton’s Neuroma
  – Lesser MTP Joint capsulitis
  – Predislocation syndrome/Ruptured plantar plate
  – Hammertoe deformities
  – Metatarsal stress Fx
  – Osteoarthritis
  – Rheumatoid Foot
  – Pes Cavus
  – Pes Planus
Neuroma

- Inflammation of the plantar common interdigital nerve of the foot.
  - Morton’s neuroma (3\textsuperscript{rd} intermetatarsal space)
    - Second intermetatarsal space thought to have near same frequency – or does it?????
Neuroma

• Symptoms:
  – Burning
  – Aching
  – Radiating
  – Numbness
  – Tingling
  – “Clicking” sensation
  – Swelling
Neuroma

- Etiology
  - Inappropriate shoe gear
  - Pes planus
  - Pes cavus
  - Direct trauma/repetative microtrauma
Neuroma

• Treatment
  – Orthotics
  – Wider shoes
  – Flat shoes
  – Physical therapy
Neuroma

• Treatment

  – NSAID’s
  – Corticosteroids (systemic)
  – Corticosteroid injections
  – Sclerosing Injections: 100% Dehydrated alcohol
Neuroma

• Treatment
  – Surgery:
    • Decompression
    • Neuroma excision
      – Dorsal vs. Plantar
    – Stump Neuroma
Predislocation Syndrome / Ruptured Plantar Plate

Figure 2: Tear in the bottom of the Plantar Plate
A. Normal
B. Hammertoe
Predislocation Syndrome / Ruptured Plantar Plate
Predislocation Syndrome / Ruptured Plantar Plate

• Etiology:
  – Direct trauma
  – Deformity:
    • Hammertoe/clawtoe
    • Pes Cavus
  – Repetative microtrauma
Evaluation:
Dorsal Drawer Test
Testing

- Radiographs
- MRI
- Sonogram
- Triphasic bone scan (only if stress fracture suspected) (not usually performed)
Testing

Radiographs:
Testing

- MRI
Grading of Plantar Plate Ruptures

- Grade 0= MTP joint alignment; pain but no deformity. Reduced toe purchase. Negative drawer test. Plantar plate or capsular attenuation.

Grading of Plantar Plate Ruptures

- Grade 1 = Malalignment at MTP; medial deviation with widening of web space. Swelling of MTP joint, loss of toe purchase, mild positive drawer test. Transverse distal tear (<50%) and/or mid substance tear.
Grading of Plantar Plate Ruptures

• Grade 2= Moderate malalignment; medial, lateral, dorsal, with hyperextension of the toe. MTP pain, no toe purchase, moderate positive drawer (>50% subluxable). Transverse distal tear (>50%) and/or midsubstance tear.
Grading of Plantar Plate Ruptures

- Grade 3=Severe malalignment; dorsal or dorsal medial deformity; second toe overlaps the hallux; may have flexible hammertoe. Joint and toe pain, no toe purchase, very positive drawer sign, dislocatable MTP joint. Transverse and/or longitudinal extensive tear (may involve collateral ligaments).
Grading of Plantar Plate Ruptures

- Grade 4= Dorsomedial or dorsal dislocation; severe deformity with dislocation, fixed hammertoe. Joint and toe pain, no swelling, no toe purchase, dislocated MTP joint, fixed hammertoe. Extensive tear with button hole (dislocation); combination of transverse and longitudinal plate tear.
Treatment

- NSAID’s
- Corticosteroids
  - Oral
  - No injections
- Padding
- Strapping
- Immobilization
- Physical Therapy
- Orthotics
- Surgery
Surgery

• Hammertoe Repair
  – Arthrodesis PIP joint

• Flexor Digitorum Longus Tendon Transfer or Primary Repair of Plantar Plate

• Metatarsal Osteotomy
FDL Tendon Transfer
Surgery

• Primary Repair of Plantar Plate
  – Plantar Approach
  – Dorsal Approach
Plantar Plate Repair
Plantar Plate Repair
Plantar Plate Repair
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