TIME'S UP ON HEEL PAIN:
PROCEDURE ALTERNATIVES FOR RECALCITRANT HEEL PAIN

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HEEL PAIN IN THE PODIATRIC PRACTICE

- >1 million visits per year in US
- Conservative pathways - 85% will get better
- What do you do with the recalcitrant patients?
WORKUP OF THE RECALCITRANT HEEL PAIN PATIENT

- Re-visit/Review past treatments
- Rule out other etiologies
- Conservative vs. Surgical
- Advanced/additional imaging – U/S, MRI  Identify “-osis” vs.“-itis'
- ~ 6 months active treatment
# SURGICAL LEVEL INTERVENTIONS

<table>
<thead>
<tr>
<th>Plantar Fascia</th>
<th>Achilles</th>
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<tbody>
<tr>
<td>Traditional Fasciotomy/Fasciectomy</td>
<td>Traditional Tenotomy and Repair</td>
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<tr>
<td>EPF</td>
<td>Detachment/Reattachment</td>
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<td>Shockwave Therapy</td>
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<tr>
<td>Radiofrequency Microdebridement/Coblation</td>
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<td>Ultrasonic Microdebridement</td>
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WHY THESE PROCEDURES?

- Less invasive
- Shorter P.O. course
- Less intensive healing course
- Targeted to fasciosis/tendinosis
- Results
ULTRASONIC MICRODEBRIDEMENT

- Ultrasound guided, percutaneous
- Cuts and removes the unhealthy tissue – focused aspiration of scar tissue
- Local anesthetic or MAC, single tx, outpatient
- No preop restrictions
ULTRASONIC MICRODEBRIDEMENT – THEORY AND APPLICATION

- Ultrasonic energy to tip of wand, cuts diseased tissue, spares healthy
- Harmonic resonance of diseased tissue different than healthy
- 18 gauge, foot pedal, single use, pen-like
- Longitudinal movement of needle at speed of sound “Jack hammer effect”
- Continuous saline irrigation and flushes unwanted tissue
- Ultrasound guidance to assure all unhealthy tissue is addressed
ULTRASONIC MICRODEBRIDEMENT – APPROACH

- PF – medial approach, incise w/11 blade, re-orient Microdebrider tip to reach all portions of diseased tissue
- Use long- and short-axis U/S views
- Achilles - U/S transducer longitudinal and horizontal to ID midsubstance tendinosis
- Microtip to hypoechoic region, reorient prn
ULTRASONIC MICRODEBRIDEMENT – POST OP

- Steri-strips, DSD
- Surgeon preference varies for WB - Sneaker vs CAM boot vs NWB (Achilles more conservative)
- Decrease activity – full activity 6 weeks
- OTC analgesia or minimal narcotic analgesia
ULTRASONIC MICRODEBRIDEMENT - RESULTS

- SINCE 2012 – procedure distribution has been comprised of:
  - 33% PF
  - 19% Achilles
  - 35% podiatric physicians
ULTRASONIC MICRODEBRIDEMENT – RESULTS

Ellis et al, JAPMA (manuscript accepted)

- Prospective Study 26 pts, 1 tx, avg cut time 4 minutes
- Symptoms avg 18 months
- NO complications 16 months f/u
- 88% pain relief at 1 and 16 months
- 92% would repeat procedure
ULTRASONIC MICRODEBRIDEMENT – RESULTS

Patel, AJ Ortho 2015

- Prospective Study 12 pts, > 6 months sx, 4 pts with failed EPF
- 12 months f/u, NO complications
- 92% pain free at 3 months and 12 months, improved pain scores
# ULTRASONIC MICRODEBRIDEMENT – PROS AND PITFALLS

<table>
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<tr>
<th>PROS</th>
<th>CHALLENGES</th>
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<tr>
<td>Minimally invasive</td>
<td>**Need proficiency with U/S</td>
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<tr>
<td>Short treatment time</td>
<td>Limited treatment area (vs multiple incisions)</td>
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<tr>
<td>Comparatively easier post op course</td>
<td>EBM evolving</td>
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<td>Low analgesia requirements</td>
<td></td>
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<tr>
<td>Addresses degenerative/unhealthy tissue</td>
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RADIOFREQUENCY COBLATION

- Percutaneous or Open
- Local anesthetic or MAC, single tx, outpatient
- Originally used with tennis elbow, rotator cuff
Stimulates and organizes angiogenesis, accelerates healing, enhances cell proliferation

Controlled plasma mediated RF energy through a conductive medium (saline)

Excited radicals in plasma break covalent molecular bonds $\rightarrow$ ablate soft tissue at low $T$

Ablation wand with foot pedal, single use, pen-like
RADIOFREQUENCY COBLATION – APPROACH

- Assuming percutaneous approach – localize point maximal tenderness PRIOR to sedation
- Mark treatment area/grid – 5 mm apart, maximum ~20
- 0.062 K wire
- Insert and engage wand
- Continuous saline
RADIOFREQUENCY COBLATION – POST OP

- Antibiotic ointment, adaptic, DSD
- Surgeon preference can vary on WB parameters
- Sneaker vs CAM boot vs NWB (Achilles or Open more conservative)
- Decrease activity
- OTC acetaminophen or minimal narcotic analgesia – early anti-nociceptor effect
- NO NSAID for 2 weeks prior and 6 weeks post – controlled inflammatory response
- No steroid for 1 month prior
RADIOFREQUENCY COBLATION - RESULTS

- Sean, et al – JFAS 2010 – 85% good to excellent results at 6 months
- 85% expectations met at 6 months (14 pts, 15 feet)

- Tay, et al – JFAS 2012 – At 1 year, AOFAS hindfoot scores same, expectation/satisfaction equal
- But VAS slightly better with Open vs. Percutaneous
RADIOFREQUENCY COBLATION - RESULTS

- Shibuya, N, et al – JFAS 2012 – Achilles
- 47 cases – 8-9 months follow up
- Reoperation rate 14.5%, Rupture 6%
- Cohort had increased BMI
# Radiofrequency Coblation—Pros and Pitfalls

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<th>Pros</th>
<th>Challenges</th>
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<tr>
<td>Minimally invasive</td>
<td>Surrounding tissue damage? (min)</td>
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<td>EBM of Achilles especially, evolving</td>
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<td>BMI related complications</td>
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Alternatives to “traditional” fasciotomy/tenotomy – Recalcitrant Fasciosis/Tendinosis

- Less invasive intra- and post-operatively
- Do not ignore the biomechanics, equinus, BMI
- Work/activity demands
- Full results can take time
- Limitations in Data
CITATIONS/RESOURCES

- www.mayoclinic.org
- Tenex Health Website
- Smith and Nephew website
- Ellis, et al. JAPMA (accepted manuscript) “Fasciotomy and Surgical Tenotomy for Chronic Achilles Insertional Tendinopathy.”
- Razdan and Vanderwoude “Ultrasound Guided Percutaneous Fasciotomy: A Novel Approach In Treating Chronic Plantar Fasciitis.” (Presentation at SIR 2015)
- Razdan and Vanderwoude “Ultrasound Guided Percutaneous Fasciotomy: A Novel Approach In Treating Chronic Plantar Fasciitis.” (Presentation at SIR 2015)
- Homozi, et al, JFAS 2011
- Brosky, T., Thomas, J. - PI Update 2007, Chapter 16 – Topaz Coblation of Achilles Tendon Pathology
THANK YOU!