

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**
- ~ 6 months active treatment

Identify “-osis” vs. “-itis”



SURGICAL LEVEL INTERVENTIONS

Plantar Fascia	Achilles
Traditional Fasciotomy/Fasciectomy	Traditional Tenotomy and Repair
EPF	Detachment/Reattachment
Shockwave Therapy	Shockwave Therapy
Radiofrequency Microdebridement/Coblation	Radiofrequency Microdebridement/Coblation
Ultrasonic Microdebridement	Ultrasonic Microdebridement

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/ I I 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

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

RADIOFREQUENCY COBLATION

- Percutaneous or Open
- Local anesthetic or **MAC**, single tx, outpatient
- Originally used with tennis elbow, rotator cuff



RADIOFREQUENCY COBLATION – THEORY AND APPLICATION

- 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 → 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

PROS	CHALLENGES
Minimally invasive	Surrounding tissue damage? (min)
Short treatment time	EBM of Achilles especially, evolving
Comparatively easier post op course	BMI related complications
Low analgesia requirements	
Addresses degenerative/unhealthy tissue	

SUMMARY

- 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.”
- Patel, M. “A Novel Treatment Method for Refractory Plantar Fasciitis.” Am J Ortho 2015
- Razdan and Vanderwoude “Ultrasound Guided Percutaneous Fasciotomy: A Novel Approach In Treating Chronic Plantar Fasciitis.” (Presentation at SIR 2015)
- Sean, et al, JFAS 2010, “Radiofrequency Microtenotomy for Plantar Fasciitis.”
- Tay, et al, JFAS 2012, “Topaz Open Technique More Effective Than Percutaneous”
- Rhim, B, Podiatry Today 2010, Vol 23 (12) “Bipolar Radiofrequency Microtenotomy as an Effective Alternative for Plantar Fasciosis”
- Kaplan, L, and Uribe, J. “The Effect of Radiofrequency on Articular Cartilage” Arthroscopy, 2000;16(1):2-5
- Shah, et al, 2016 J U/S Medicine” Percutaneous Ultrasound-Guided TOPAZ Radiofrequency Coblation: A Novel Coaxial Technique for the Treatment of Recalcitrant Plantar Fasciitis--Our Experience”
- Lucas, et al, JFAS 2015
- Homozi, et al, JFAS 2011
- Smith WB, et al, Clin Pod Med Surg 2017 “Midsubstance Tendinopathy, Percutaneous Techniques”
- Shibuya, N et al, JFAS 2012, “Is Percutaneous Radiofrequency Coblation for Treatment of Achilles Tendinosis Safe and Effective”
- Brosky, T., Thomas, J. - PI Update 2007, Chapter 16 – Topaz Coblation of Achilles Tendon Pathology
- Baravarian B, Podiatry Today, Vol 24 (5), 74-76, May 2011 “Essential Insights on Diagnosis and Treatment of Chronic Achilles Tendinosis.”
- Baravarian, B. Podiatry Today. Vol 30 (11), 38-47, Nov 2017, “A Closer Look at Alternative Therapies for Plantar Fasciopathy.”

THANK YOU!

