



RAFIOFRECUENCIA EN CIRUGIA PIE Y TOBILLO

Dr. De los Mozos
Hospital Universitario de Alava

CONCEPTO

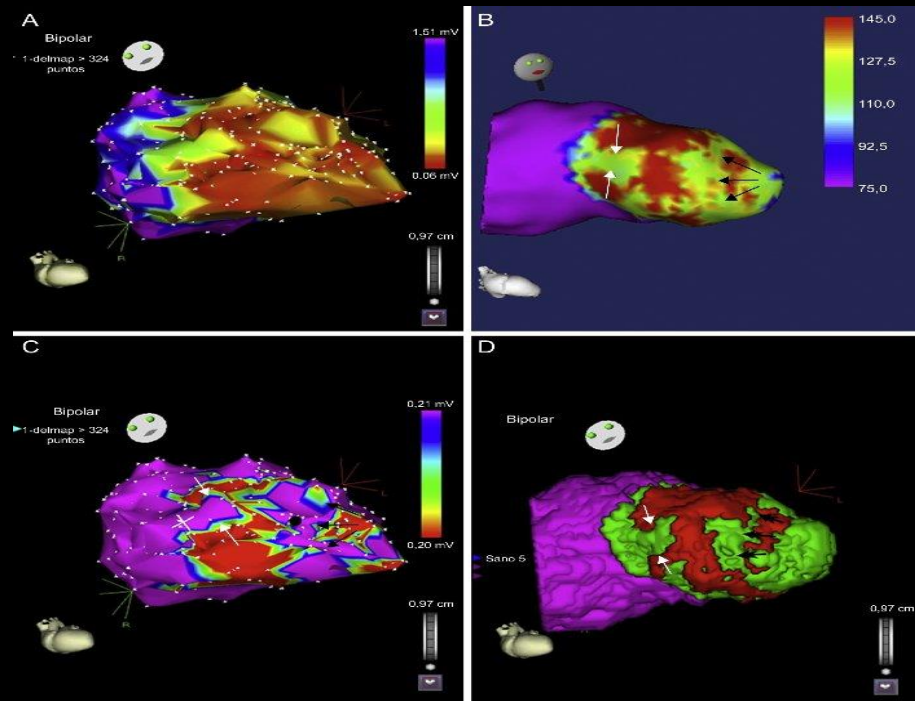
La radiofrecuencia (RF) es una técnica mínimamente invasiva empleada en el tratamiento de procesos dolorosos agudos y crónicos, en el que a través de una sonda que emite corriente eléctrica, se procede a aplicarla en tejidos blandos dañados desde un punto de vista vascular



CONCEPTO

Inicialmente fue estudiada para su uso en **infartos de miocardio**, dada su capacidad para revascularizar áreas infartadas, aumentar los niveles de factor de crecimiento endotelio vascular y su aparente efecto anestésico por destrucción local de los nervios

local de los nervios



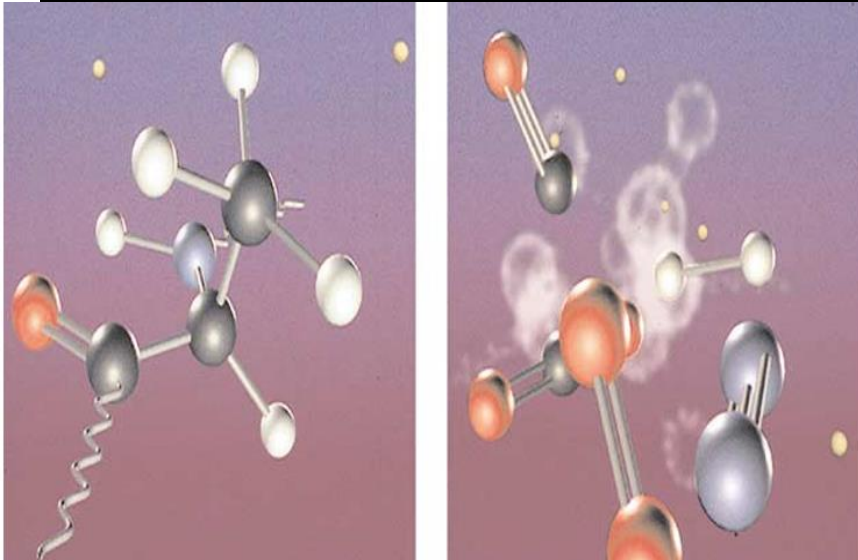
CONCEPTO



Descomposición eléctrica

Plasma

Moléculas de agua se rompen en radicales H y OH excitados



VEGF / RGF
Microvascularización

CONCEPTO

Sus aplicaciones actuales pasan por áreas tan diversas como:

1. *Unidades del dolor* – simpatectomías lumbares, radiculalgias, etc..-,
cardiología – ablación de fascículos de conducción cardiaca aberrantes -
2. *Gastroenterología* – esófago de Barret -
3. *Oncología* – tratamiento de tumores digestivos, urológicos, óseos y
pulmonares principalmente -

TIPOS DE RF

Según el modo de estimulación:

1. RF Térmica o convencional

Aplicación de corriente eléctrica de alta frecuencia a través de aguja aislada en su totalidad salvo en la punta, cuyo paso genera coagulación térmica del tejido



TIPOS DE RF

Según el modo de estimulación:

2. RF Pulsada

Aplicación de corriente de radiofrecuencia en pulsos, con *pausas de microsegundos*



TIPOS DE RF

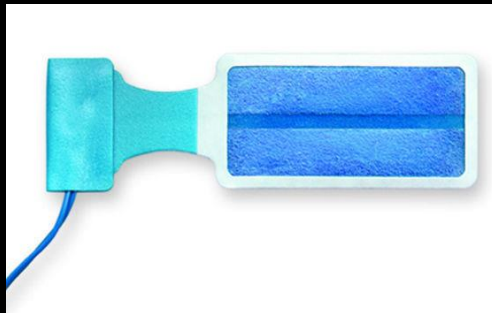
Según el modo de disposición del circuito

1. RF. Monopolar

Aplicación de RF convencional o pulsada en la que la energía fluye del electrodo hacia la placa base, situada en la superficie corporal del paciente

2. RF Bipolar

Aplicación de RF mediante dos electrodos, sin placa base, fluyendo la energía entre ambos electrodos, ampliando el área de lesión



TIPOS DE RF

Otros tipos de RF

1 RF enfriada o “cooled RF”

Consiste en el empleo de cánulas especiales que por un dispositivo especial utilizando un líquido, enfrían la punta de electrodo logrando mayor lesión tisular



TIPOS DE RF

Otros tipos de RF

2 RF coablativa

Vaporización que se utiliza en la sección de tractos fibrosos, como en la artroscopia



APOYO DE LITERATURA



FASCITIS PLANTAR

Se trata de la causa más frecuente de dolor en talón, y se estima que 1 millón de visitas anuales al médico se produce por este motivo en EEUU

60.000.000 \$



22% aproximadamente de los corredores deportivos la han sufrido

Aproximadamente 109.000.000 resultados
Resultados de [evolution running](#)



FASCITIS PLANTAR

El periodo de recuperación total puede llegar a los dos años, aunque muchos pacientes mejoran a los 9 meses

RHB

Infiltraciones

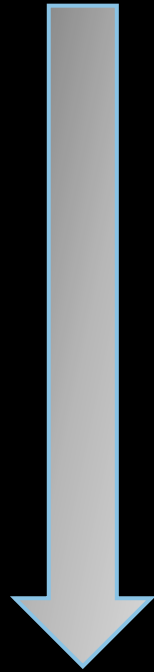
Estiramientos fascia y gastrocnemios

AINES

Ortesis



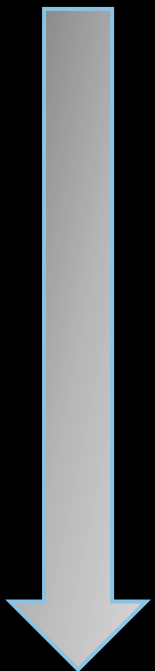
FASCITIS PLANTAR



Falta células inflamatorias
Proliferación fibroblastos
Redes de colágeno desorganizadas

FASCIOSIS PLANTAR

OBJETIVOS RADIOFRECUENCIA



Mejora entorno vascular
Remodelación del colágeno
Angiogénesis

VEFG Factor crecimiento vascular endotelial

RGF Factor crecimiento fibroblástico



Effect of radiofrequency microtenotomy on degeneration of tendons: An experimental study on rabbits



Taner Gunes MD^{a,*}, Erkal Bilgic MD^a, Mehmet Erdem MD^b, Bora Bostan MD^a,
Resit Dogan Koseoglu MD^c, Seyyid Ahmet Sahin MD^d, Cengiz Sen MD^e

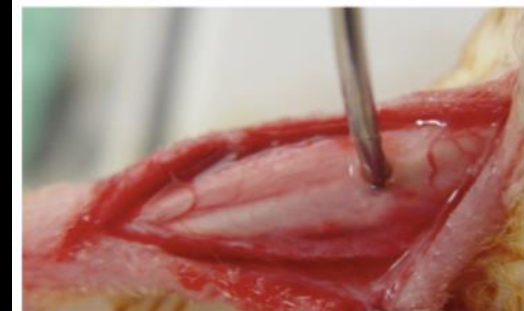
^a Gaziosmanpasa University School of Medicine, Department of Orthopaedics and Traumatology, Tokat, Turkey

^b Sakarya University School of Medicine, Department of Orthopaedics and Traumatology, Sakarya, Turkey

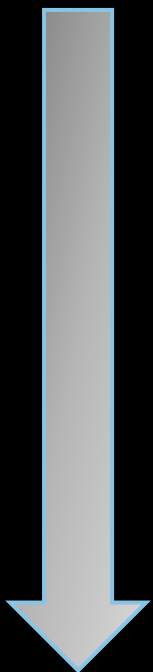
^c Gaziosmanpasa University School of Medicine, Department of Pathology, Tokat, Turkey

^d Erbaa State Hospital, Clinic of Orthopaedics and Traumatology, Erbaa, Tokat, Turkey

^e Istanbul University, Istanbul Medical School, Department of Orthopaedics and Traumatology, Istanbul, Turkey



OBJETIVOS RADIOFRECUENCIA



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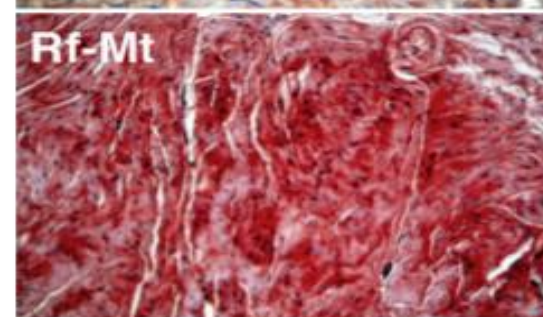
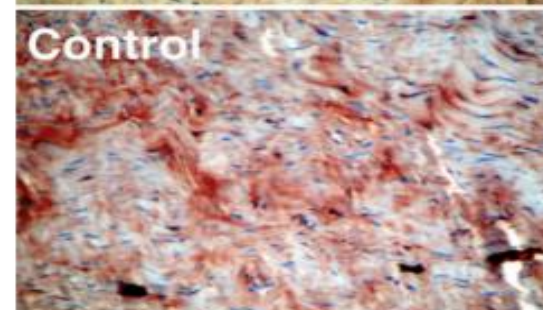
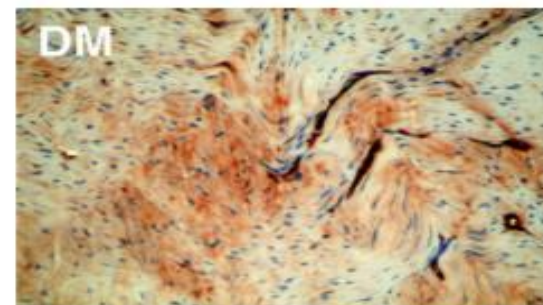
^a Gaziosmanpasa University School of Medicine, Department of Orthopaedics and Traumatology, Tokat, Turkey

^b Sakarya University School of Medicine, Department of Orthopaedics and Traumatology, Sakarya, Turkey

^c Gaziosmanpasa University School of Medicine, Department of Pathology, Tokat, Turkey

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^e Istanbul University, Istanbul Medical School, Department of Orthopaedics and Traumatology, Istanbul, Turkey

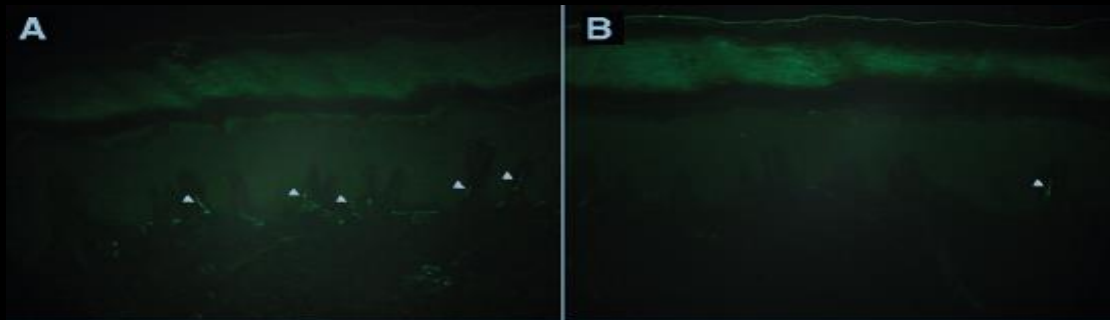


TALALGIA

Nerve Regeneration After Radiofrequency Application

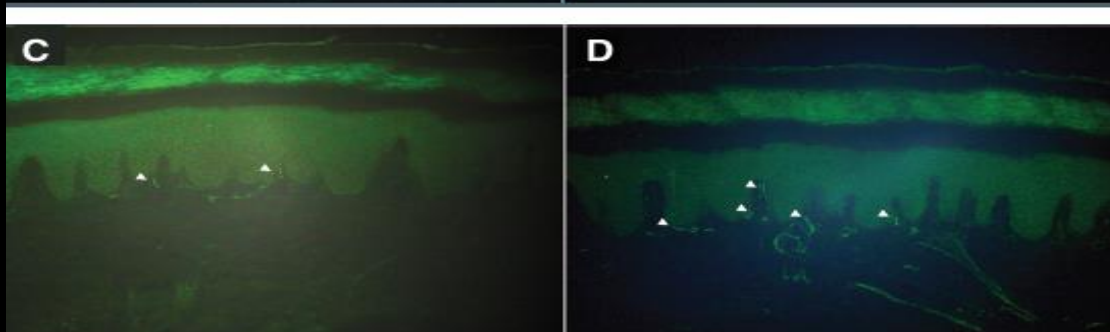
Nobuyasu Ochiai,^{*} MD, PhD, James P. Tasto,[†] MD, Seiji Ohtori,[‡] MD, PhD, Norimasa Takahashi,[‡] MD, PhD, Hideshige Moriya,[‡] MD, PhD, and David Amiel,^{*§} PhD
From the ^{*}Department of Orthopedic Surgery, University of California San Diego, La Jolla, California, [†]San Diego Sports Medicine & Orthopedic Center, San Diego, California, and the [‡]Department of Orthopedic Surgery, Graduate School of Medicine, Chiba University, Chiba, Japan

Día 0



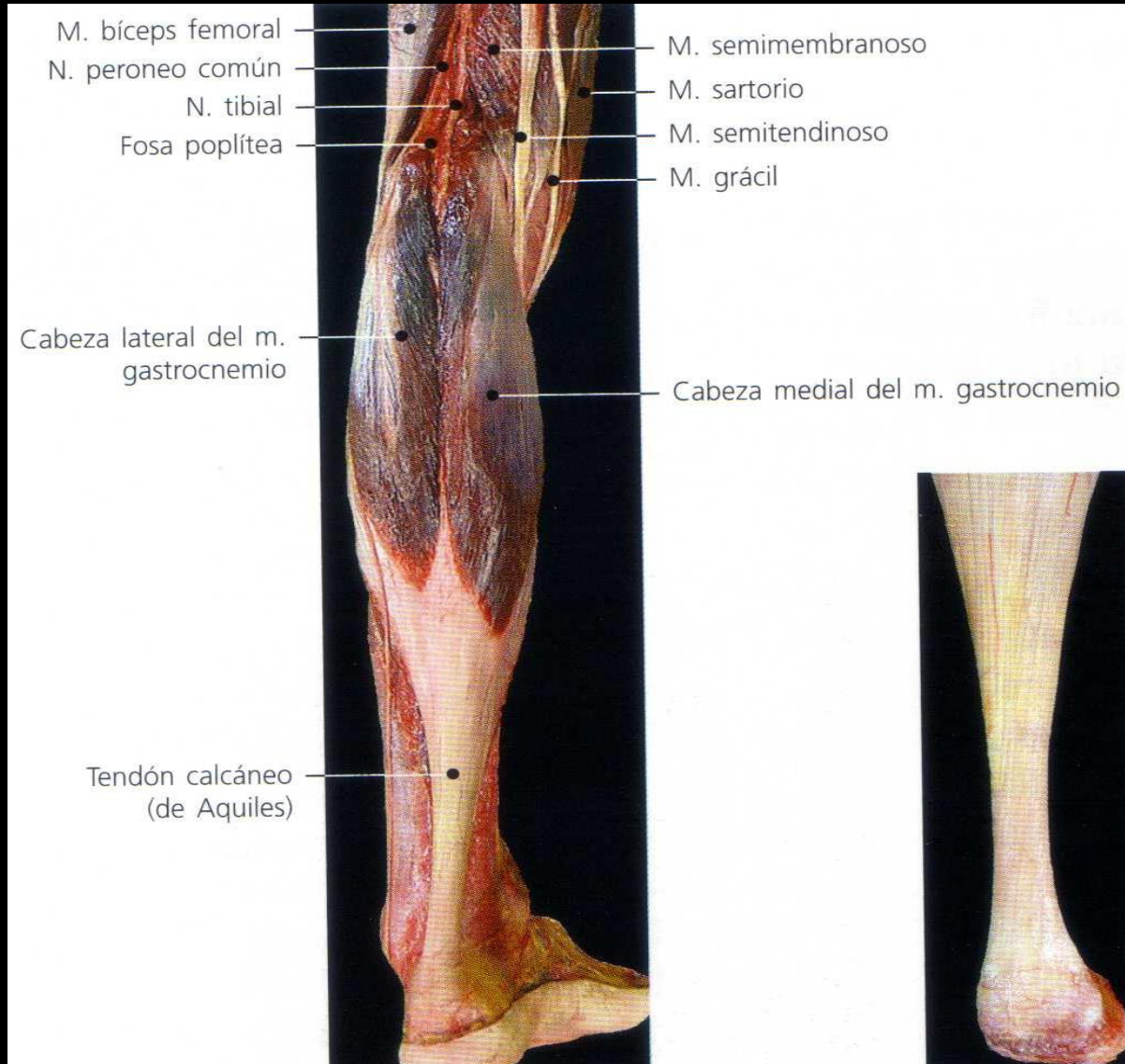
30 días

60 días



90 días

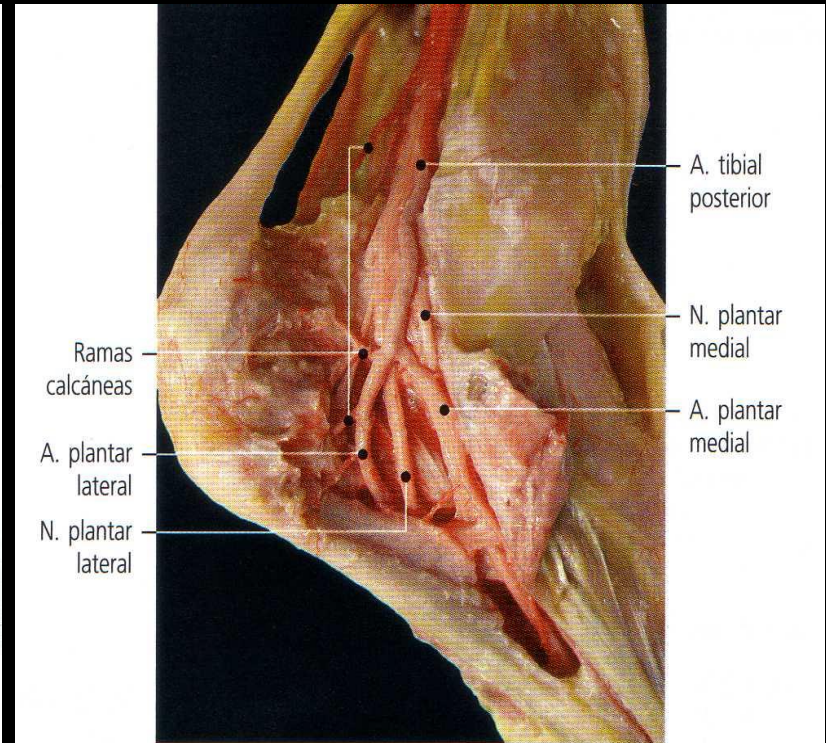
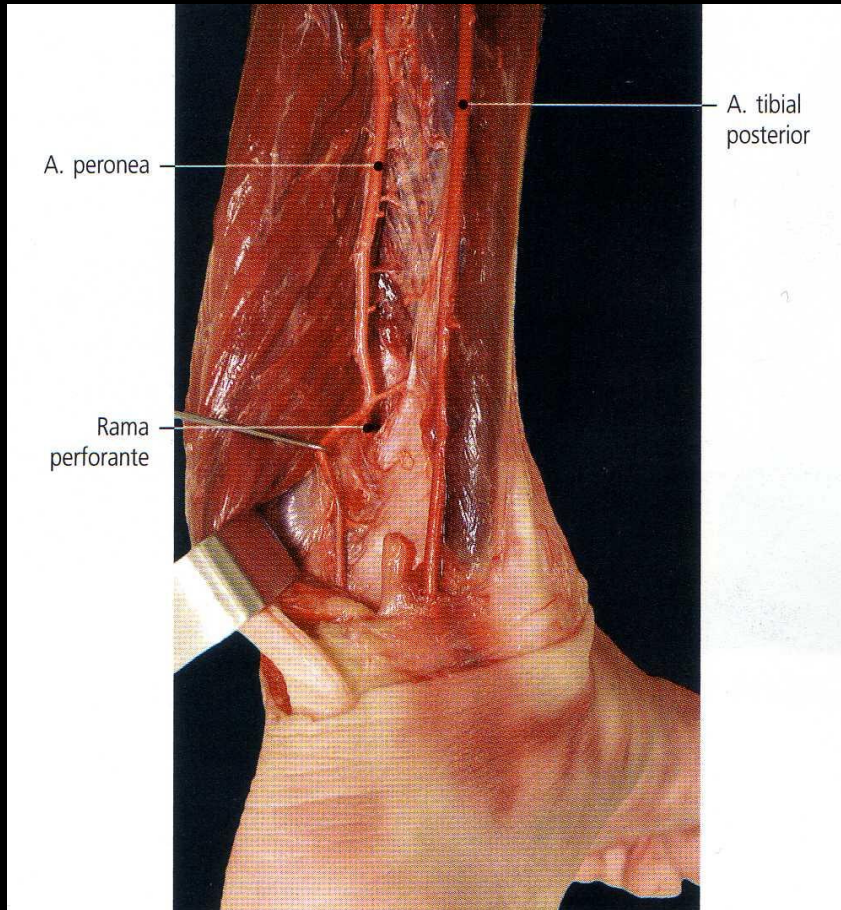
TENDINOPATIA AQUILES CRONICA



TENDINOPATIA AQUILES CRONICA

FACTORES ANATÓMICOS

- Déficit Vascular a 2-8 cms de inserción calcánea



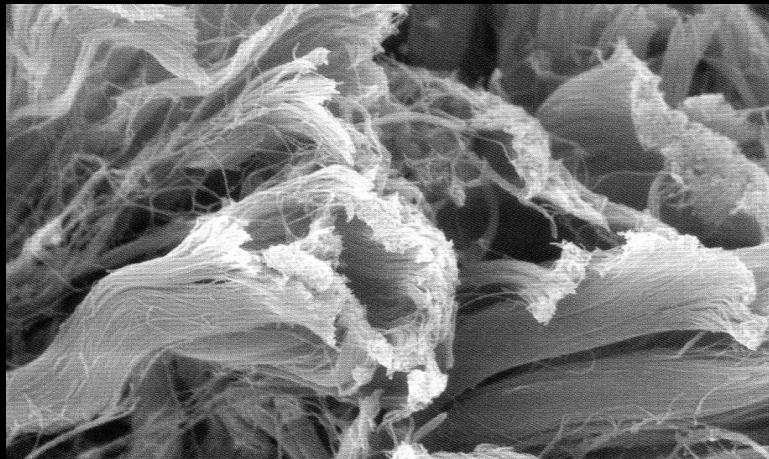
TENDINOPATIA AQUILES CRONICA

FACTORES MECANICOS

- -Corredores
- - Obesos
- - Pies planos / cavos

FACTORES BIOLÓGICOS

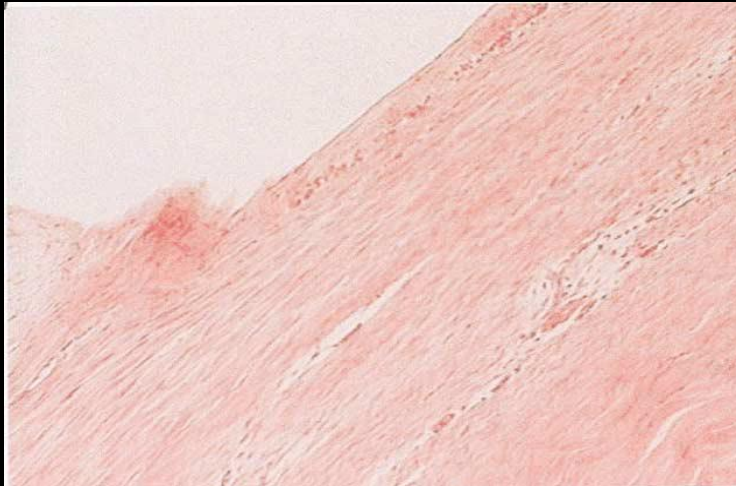
- - Quinolonas
- - Esteroides
- - Infiltraciones corticoides
- - Isotretinoína
- - Patología Metabólica, reumática e infecciosa



Colágeno tipo I / Colágeno tipo III

Fibroblastos / Miofibroblastos

TENDINOPATIA AQUILES CRONICA



The Tendon Treatment Center: New Horizons in the Treatment of Tendinosis

James P. Tasto, M.D., Jeffrey Cummings, M.D., Virgil Medlock, M.D.,
Frederick Harwood, Ph.D., Renee Hardesty, L.V.N., and David Amiel, Ph.D.

The Journal of Arthroscopy and Related
Surgery. Vol 19, N° 10 (December, Supp1)
2003: 213-223.

TÉCNICA APLICACIÓN TENDONES



TÉCNICA APLICACIÓN TENDONES



Topaz MicroDebrider (ArthroCare Corporation, Austin, Tx)



TÉCNICA APLICACIÓN TENDONES

Topaz MicroDebrider (ArthroCare Corporation, Austin, Tx)

Sonda diámetro de **0,502 mm**

Radio de acción de **2,5 mm**

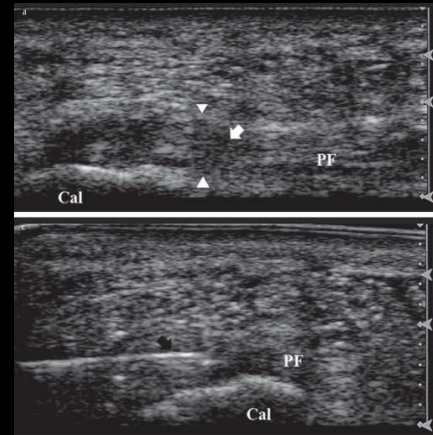
Trasmite la corriente eléctrica a **175 V**

Tiempo **0,5 segundos** en cada aplicación

Gota suero salino estéril cada **2 o 3 segundos**



TÉCNICA APLICACIÓN TENDONES



TÉCNICA APLICACIÓN NEUROPATIAS



NeuroTherm NT100 (NeuroTherm,
Wilmington, MA)

TÉCNICA APLICACIÓN NEUROPATIAS

NeuroTherm NT100 (NeuroTherm,
Wilmington, MA)

Colocación sonda

Sensación de hormigueo con un voltaje menor de 0,5V

Posición " modo lesión"

Temperatura de 90°C , realizando una ablación térmica de 90 segundos

Variabilidad anatómica

Repetición en 1-3 puntos diferentes, por posibles variaciones anatómicas de los nervios



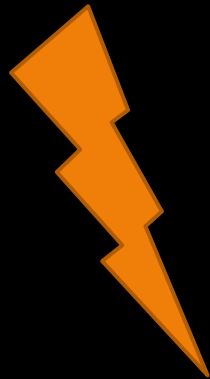
RESULTADO LITERATURA – CRITERIOS EXCLUSION/ INCLUSION

Table 1. Inclusion and Exclusion Criteria for the Study.

Criteria for Inclusion	Criteria for Exclusion
<ol style="list-style-type: none">1. Heel pain located at the plantar medial aspect of the heel for at least 6 months2. Calcaneal spur on the x-ray and/or plantar fasciitis on the MRI3. Patients who have undergone at least 2 of the conservative treatment options below at least 3 months ago<ul style="list-style-type: none">• Stretching exercises and ice treatment• Oral anti-inflammatory and heel pad• Physical therapy• Steroid injections• Night splints• Extracorporeal shockwave therapy4. Patients who benefited from trial local anesthetic injection	<ol style="list-style-type: none">1. Prior surgery in the heel area/region2. History of trauma or fracture of the calcaneus3. Patients with peripheral neuropathies and radiculopathy proven by electromyography studies or physical examination4. Patients with peripheral vascular ischemia5. Open wound or infection in the heel area/region6. Calcaneal lesions including benign tumors7. Severe fat pad atrophy, calcaneal bursitis, and skin abnormalities around the heel8. Pregnancy9. Patients with severe arthritic changes



RESULTADO LITERATURA – FASCIA PLANTAR

Lucas & cols - III	Sorensen & cols - IV	Sian & cols	Hormozi & cols - IV	Weil & cols
111	21	48	16	10
83,6%	86%	71%	78%	90%
33,3	3	12	15	12
FFI 2,4 - 37	AOFAS 22 -59	AOFAS 43-80	AOFAS 52 -82	AOFAS 57 -84



The Journal of Foot & Ankle Surgery 54 (2015) 179–182

Contents lists available at ScienceDirect


 The Journal of Foot & Ankle Surgery 

journal homepage: www.jfas.org

Intermediate-Term Results of Partial Plantar Fascia Release With Microtenotomy Using Bipolar Radiofrequency Microtenotomy

Douglas E. Lucas, DO¹, Scott R. Ekroth, MD², Christopher F. Hyer, DPM, MS, FACFAS³

¹Fellow, Orthopedic Foot and Ankle Department, Stanford University School of Medicine, Stanford, CA
²Attending Physician, Physician's Clinic of Iowa, Cedar Rapids, IA
³Fellowship Director, Advanced Foot and Ankle Surgical Fellowship, Orthopedic Foot and Ankle Center, Westerville, OH

 CrossMark

Todos los **pacientes fumadores, diabéticos y trabajadores** pendientes compensación económica fueron del grupo éxito

RESULTADO LITERATURA – FASCIA PLANTAR

Lucas & cols - III

111

83,6%

33,3

FFI

2,4 - 37

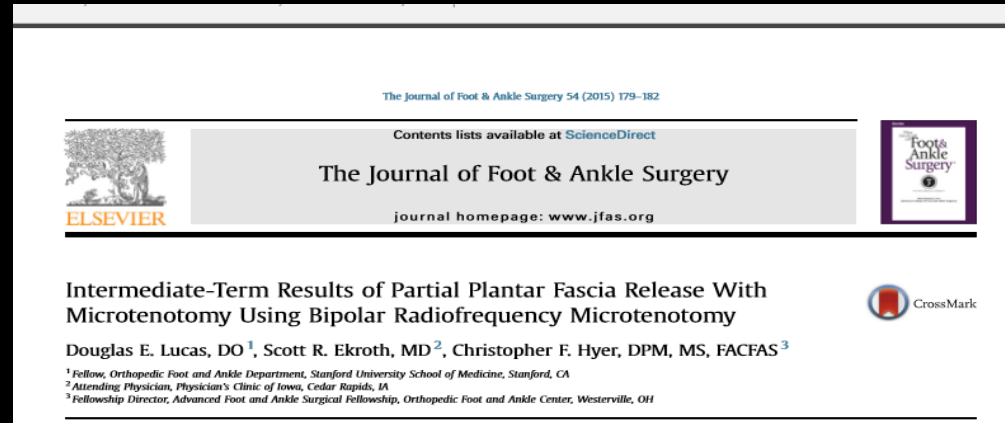


Table
Demographic and clinical patient characteristics (n = 61)

Variable	Overall (n = 61)	Success [*] Group (n = 51)	Failure [†] Group (n = 10)
Demographic data			
Female sex	44 (72.1)	38 (74.5)	6 (60.0)
Age at surgery (y)	46.9 ± 11.0	47.2 ± 10.7	45.5 ± 12.8
Body mass index (kg/m ²) [‡]	30.8 ± 6.3	31.1 ± 6.5	29.3 ± 5.6
Left operative side	35 (57.4)	29 (56.9)	6 (60.0)
Tobacco use	6 (9.8)	6 (11.8)	0 (0.0)
Diabetes mellitus	2 (3.3)	2 (3.9)	0 (0.0)
Workers' compensation	1 (1.6)	1 (2.0)	0 (0.0)
Nonoperative treatment period before surgery (mo)			
Median	13.0	11.0	21.0
Range	4.0 to 178.0	4.0 to 178.0	7.0 to 178.0
Interval from surgery to final follow-up visit (mo)	33.3 ± 8.6	33.8 ± 8.4	30.7 ± 9.5
Outcomes			
Revision	1 (1.6)	0 (0.0)	1 (10.0)
Complications	0 (0.0)	0 (0.0)	0 (0.0)
Would repeat procedure, if needed	49 (80.3)	49 (96.1)	0 (0.0)
Pain VAS score at final follow-up visit			
Median	0.0	0.0	6.0
Range	0.0 to 10.0	0.0 to 5.0	0.0 to 10.0
FFI score			
Median	3.1	2.4	37.4
Range	0.0 to 97.1	0.0 to 25.7	0.0 to 97.1

Abbreviations: FFI, foot function index; VAS, visual analog scale.

Data presented as n (%) or mean ± standard deviation, unless otherwise noted.

* Defined as patients who were satisfied with the procedure and would recommend it to a friend.

† Defined as patients who were dissatisfied with the procedure and would not recommend it to a friend.

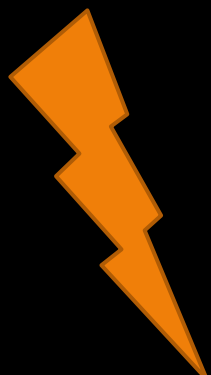
‡ Body mass index data were missing for 2 patients (n = 59), 1 patient in each group.

La **mediana de puntuación de EVA** en el grupo de éxito fue 0,0 (rango de 0,0 a 5,0), y la mediana de puntuación de EVA en el grupo de fracaso fue de 6,0 (rango de 0,0 a 10,0), una diferencia significativa ($p < 0,001$).

También se observó una diferencia significativa en el **índice de la función del pie** entre los grupos de éxito (mediana 2,4, rango 0,0 a 25,7) y fracaso (mediana 37,4, rango de 0 a 97,1) ($p < 0,001$).

RESULTADO LITERATURA – FASCIA PLANTAR


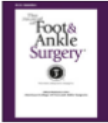
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FFI	AOFAS	AOFAS	AOFAS	AOFAS
2,4 - 37	22 -59	43-80	52 -82	57 -84



Tendinitis TFLH mantenida

The Journal of Foot & Ankle Surgery 50 (2011) 165–170

Contents lists available at ScienceDirect

 The Journal of Foot & Ankle Surgery 

journal homepage: www.jfas.org

Percutaneous Bipolar Radiofrequency Microdebridement for Recalcitrant Proximal Plantar Fasciosis ☺

Matthew D. Sorensen, DPM¹, Christopher F. Hyer, DPM², Terrence M. Philbin, DO³

¹ Fellowship Trained Foot and Ankle Surgeon, Summit Orthopedics, St. Paul, MN
² Fellowship Co-director, Advanced Foot and Ankle Surgery Fellowship, Orthopedic Foot and Ankle Center, Westerville, OH
³ Fellowship Trained Foot and Ankle Surgeon, Orthopedic Foot and Ankle Center, Westerville, OH

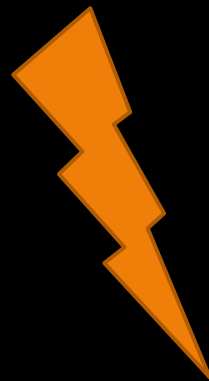
Table 2
Comparison of AOFAS hindfoot scores (N = 21)

Preoperative AOFAS Hindfoot Score	Postoperative AOFAS Hindfoot Score	P Value
22.10 ± 12.96	59.57 ± 13.23	<.0001

Abbreviation: AOFAS, American Orthopaedic Foot & Ankle Society.

RESULTADO LITERATURA – FASCIA PLANTAR

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Foot and Ankle Surgery 18 (2012) 287–292

Contents lists available at SciVerse ScienceDirect



Foot and Ankle Surgery

journal homepage: www.elsevier.com/locate/fas



Open technique is more effective than percutaneous technique for TOPAZ radiofrequency coblation for plantar fasciitis

Kae Sian Tay MBBS*, Yung Chuan Sean Ng MBBS, MRCS(Edin), MMed(Orth Surg), FRCS(Edin), Inderjeet Rikhranj Singh MBBS, FRCS (Glasg), FAMS, Keen Wai Chong MBBS, MRCS (Edin), M Med (Ortho), FRCS (Edin)(Ortho)

Department of Orthopaedic Surgery, Singapore General Hospital, Outram Road, Singapore 169608, Singapore

Técnica **Abierta** mejores resultados que **Percutánea**

RESULTADO LITERATURA – FASCIA PLANTAR

Sian & cols

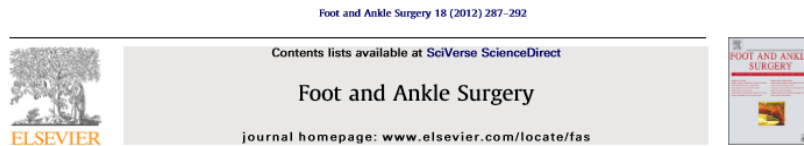
48

71%

12

AOFAS

43-80



Open technique is more effective than percutaneous technique for TOPAZ radiofrequency coblation for plantar fasciitis

Kae Sian Tay MBBS*, Yung Chuan Sean Ng MBBS, MRCS(Edin), MMed(Orth Surg), FRCS(Edin), Inderjeet Rikhranj Singh MBBS, FRCS (Glasg), FAMS, Keen Wai Chong MBBS, MRCS (Edin), M Med (Ortho), FRCS (Edin)(Ortho)

Department of Orthopaedic Surgery, Singapore General Hospital, Outram Road, Singapore 169608, Singapore

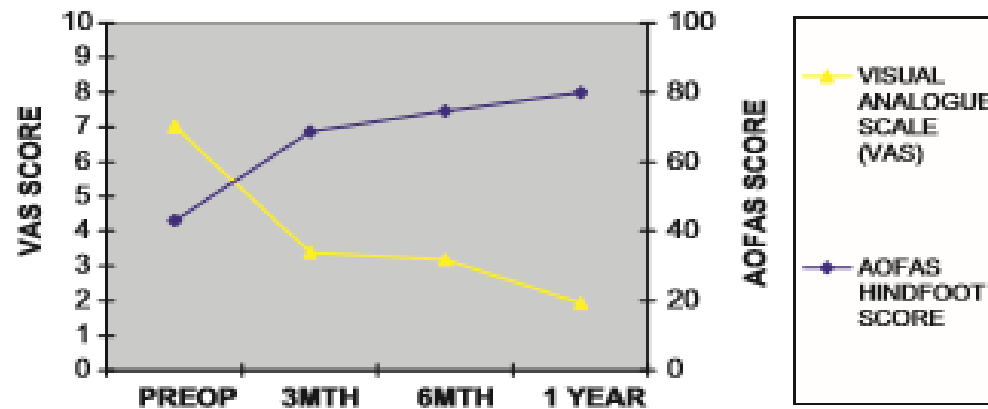
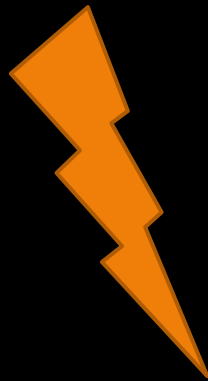


Fig. 3. VAS pain score/AOFAS hindfoot scores over follow-up period.

Mediana de puntuación de EVA y escala AOFAS
Con significación estadística ($p < 0,001$)

RESULTADO LITERATURA – TENDINITIS AQUILEA

Yeap & cols	Arnal Burro & cols	Shibuya & cols - IV
15	17	47
93%	94%	-
6	12	8
AOFAS 48 - 91	Nirschl Pain 4-1	-



Journal of Orthopaedic Surgery 2009;17(3):325-30

Radiofrequency coblation for chronic foot and ankle tendinosis

Ewe Juan Yeap,^{1,2} Keen Wai Chong,² William Yeo,² Inderjeet Singh Rikhranj²

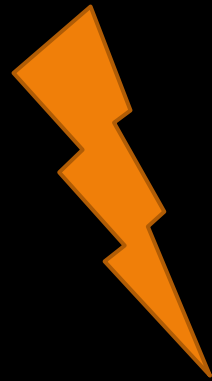
¹ Department of Orthopaedics and Traumatology, Tuanku Fauziah Hospital, Kangar, Malaysia

² Department of Orthopaedic Surgery, Singapore General Hospital, Singapore

Técnicas quirúrgicas **asociadas**
Aplicación **diferentes tendones**

RESULTADO LITERATURA – TENDINITIS AQUILEA

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93%	94%	-
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AOFAS 48 - 91	Nirschl Pain 4-1	-



Aquiles **zona I**
 Cirugía **abierta** - deportistas



Revista Española de Cirugía Ortopédica y Traumatología

www.elsevier.es/rot



ORIGINAL

Tratamiento quirúrgico de la tendinopatía aquilea crónica no insercional en corredores mediante el uso de radiofrecuencia bipolar

J. Arnal-Burró ^{a,*}, D. López-Capapé ^b, C. Igualada-Blázquez ^a,
 A. Ortiz-Espada ^b y A. Martín-García ^c

^a Servicio de Cirugía Ortopédica y Traumatología, Hospital General Universitario Gregorio Marañón, Madrid, España
^b Servicio de Cirugía Ortopédica y Traumatología, Clínica CEMTRO, Madrid, España
^c Servicio de Cirugía Ortopédica y Traumatología, Hospital Universitario Infanta Leonor, Madrid, España

RESULTADO LITERATURA – TENDINITIS AQUILEA

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The Journal of Foot & Ankle Surgery 51 (2012) 767–771

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journal homepage: www.jfas.org



Is Percutaneous Radiofrequency Coblation for Treatment of Achilles Tendinosis Safe and Effective?

Naohiro Shibuya, DPM, MS, FACFAS¹, Jakob C. Thorud, DPM, MS², Jon M. Humphers, DPM³, J. Marshall Devall, DPM, FACFAS⁴, Daniel C. Jupiter, PhD⁵

¹Associate Professor of Surgery, Texas A&M Health Science Center, College of Medicine; Acting Chief, Section of Podiatry, Department of Surgery, Central Texas VA Health Care System; Staff, Scott and White Memorial Hospital and Clinics, Temple, TX

²Second Year Resident, Scott and White Memorial Hospital, Texas A&M Health and Science Center, Temple, TX

³Third Year Resident, Scott and White Memorial Hospital, Texas A&M Health and Science Center, Temple, TX

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⁵Assistant Professor of Surgery, Texas A&M Health Science Center, College of Medicine; Research Scientist, Scott and White Memorial Hospital, Central Texas VA Health Care System, Temple, TX



Aquiles zona II

Tasa reintervención 15% - Ruptura tendinosa 6%

RESULTADO LITERATURA – Nervio plantar lateral Nervio calcáneo medial

Cozzarelli & cols - IV	Cione & cols II	Arslan & cols II	Erken & cols IV
82	75	37	29
89%	79,7%	88%	85,7%
12 a	18 m	12 m	24 m
VAS 8 -0	VAS 9-1	VAS 6-1	VAS 9,2 – 1,8



328 Foot & Ankle Specialist December 2010

< **Clinical Research** >

A 12-Year Long-Term Retrospective Analysis of the Use of Radiofrequency Nerve Ablation for the Treatment of Neurogenic Heel Pain

John Cozzarelli, DPM, FACFAS,
Ronald J. Solitto, DPM, MD, FACFAS,
Jyotsna Thapar, DPM, and
John Caponigro, DPM

Repetición de la técnica en 4 casos

RESULTADO LITERATURA – Nervio plantar lateral Nervio calcáneo medial

Cozzarelli & cols - IV	Cione & cols II	Arslan & cols II	Erken & cols IV
82	75	37	29
89%	79,7%	88%	85,7%
12 a	18 m	12 m	24 m
VAS 8 -0	VAS 9-1	VAS 6-1	VAS 9,2 – 1,8

ORIGINAL RESEARCH

A Retrospective Study of Radiofrequency Thermal Lesioning for the Treatment of Neuritis of the Medial Calcaneal Nerve and its Terminal Branches in Chronic Heel Pain

Joseph A. Cione, DPM, DABPS, FACFAS; John Cozzarelli, DPM, DABPS, FACFAS and Christopher Jay Mullin, DPM, DABPS, FACFAS



Dolor recurrente en 5 casos



RESULTADO LITERATURA – Nervio plantar lateral Nervio calcáneo medial

Cozzarelli & cols - IV	Cione & cols II	Arslan & cols II	Erken & cols IV
82	75	37	29
89%	79,7%	88%	85,7%
12 a	18 m	12 m	24 m
VAS 8 -0	VAS 9-1	VAS 6-1	VAS 9,2 – 1,8



The Journal of Foot & Ankle Surgery xxx (2016) 1–5

Contents lists available at ScienceDirect

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journal homepage: www.jfas.org

Original Research

Treatment of Chronic Plantar Heel Pain With Radiofrequency Neural Ablation of the First Branch of the Lateral Plantar Nerve and Medial Calcaneal Nerve Branches

Aydın Arslan, MD¹, Tuba Tulay Koca, MD², Ali Utkan, MD³, Resit Sevimli, MD⁴, İbrahim Akel, MD⁵

¹ Orthopaedic Surgeon, Department of Orthopaedics, State Hospital, Malatya, Turkey
² Physical Therapy and Rehabilitation Specialist, Department of Physical Therapy and Rehabilitation, State Hospital, Malatya, Turkey
³ Orthopaedic Surgeon, Department of Orthopaedics, Ankara Numune Training and Research Hospital, Ankara, Turkey
⁴ Orthopaedic Surgeon and Assistant Professor, Department of Orthopaedics, Inonu University, Turgut Ozal Medical Center, Malatya, Turkey
⁵ Orthopaedic Surgeon and Associate Professor, Department of Orthopaedics, Kent Hospital, Izmir, Turkey

Fracaso ondas de choque 28

Fracaso infiltraciones corticoides 22

RESULTADO LITERATURA – Nervio plantar lateral Nervio calcáneo medial


Cozzarelli & cols - IV	Cione & cols II	Arslan & cols II	Erken & cols IV
82	75	37	29
89%	79,7%	88%	85,7%
12 a	18 m	12 m	24 m
VAS 8 -0	VAS 9-1	VAS 6-1	VAS 9,2 – 1,8

Prospective Study of Percutaneous Radiofrequency Nerve Ablation for Chronic Plantar Fasciitis

Foot & Ankle International
2014, Vol. 35(2) 95–103
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fai.sagepub.com

H. Yener Erken, MD¹, Semih Ayanoglu, MD¹, Ibrahim Akmaz, MD¹,
Kaan Erler, MD¹, and Ahmet Kiral, MD¹

DISCUSION - REPRODUCIBLE



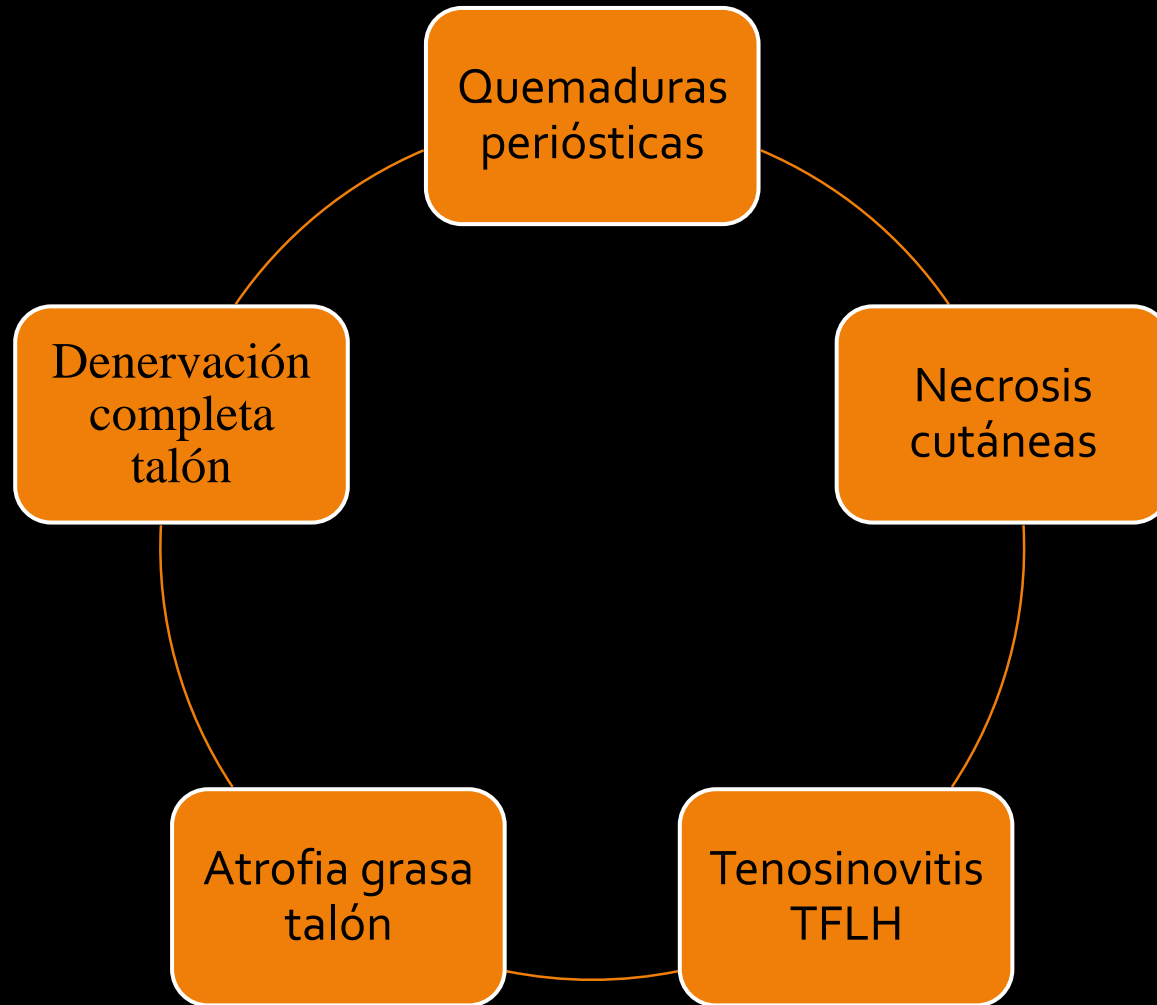
Escasa curva de aprendizaje

Consola y Kit básico transportable

Escasas complicaciones graves

Cortos plazos de recuperación

DETALLES TÉCNICOS – COLOCACIÓN DE LA SONDA TALON



DETALLES TÉCNICOS – COLOCACIÓN DE LA SONDA ZONA II AQUILES

Foot and Ankle Surgery 18 (2012) 287–292

Contents lists available at SciVerse ScienceDirect



Foot and Ankle Surgery

journal homepage: www.elsevier.com/locate/fas



Open technique is more effective than percutaneous technique for TOPAZ radiofrequency coblation for plantar fasciitis

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 Inderjeet Rikhranj Singh MBBS, FRCS (Glasg), FAMS,
 Keen Wai Chong MBBS, MRCS (Edin), M Med (Ortho), FRCS (Edin)(Ortho)

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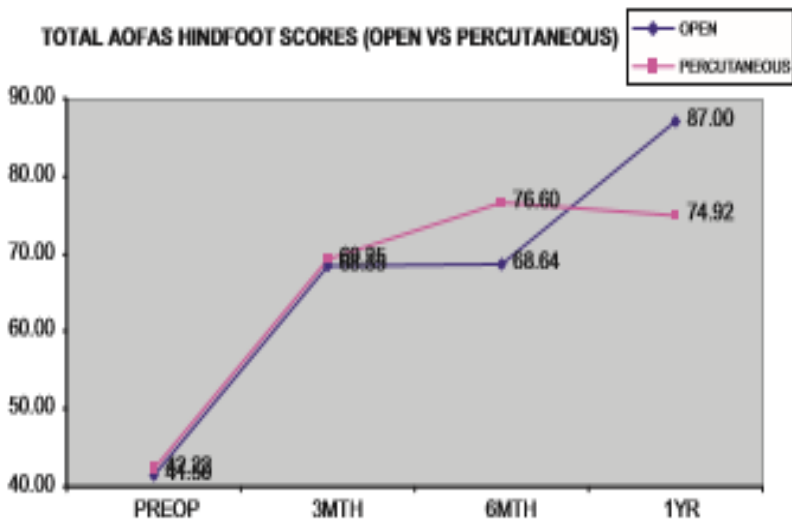


Fig. 6. Comparison of AOFAS hindfoot scores (open versus percutaneous technique).

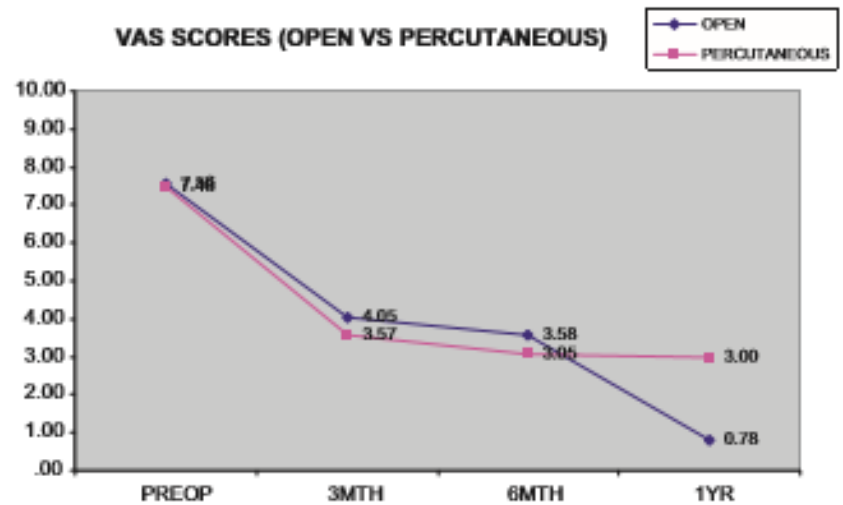


Fig. 5. Comparison of VAS scores (open versus percutaneous technique).

DETALLES TÉCNICOS – COLOCACIÓN DE LA SONDA ZONA II AQUILES

The Journal of Foot & Ankle Surgery 51 (2012) 767–771



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The Journal of Foot & Ankle Surgery

journal homepage: www.jfas.org



Is Percutaneous Radiofrequency Coblation for Treatment of Achilles Tendinosis Safe and Effective?

Naohiro Shibuya, DPM, MS, FACFAS¹, Jakob C. Thorud, DPM, MS², Jon M. Humphers, DPM³, J. Marshall Devall, DPM, FACFAS⁴, Daniel C. Jupiter, PhD⁵

¹Associate Professor of Surgery, Texas A&M Health Science Center, College of Medicine; Acting Chief, Section of Podiatry, Department of Surgery, Central Texas VA Health Care System; Staff, Scott and White Memorial Hospital and Clinics, Temple, TX

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Reintervención 15%
Ruptura tendón 6%

770

N. Shibuya et al. / The Journal of Foot & Ankle Surgery 51 (2012) 767–771

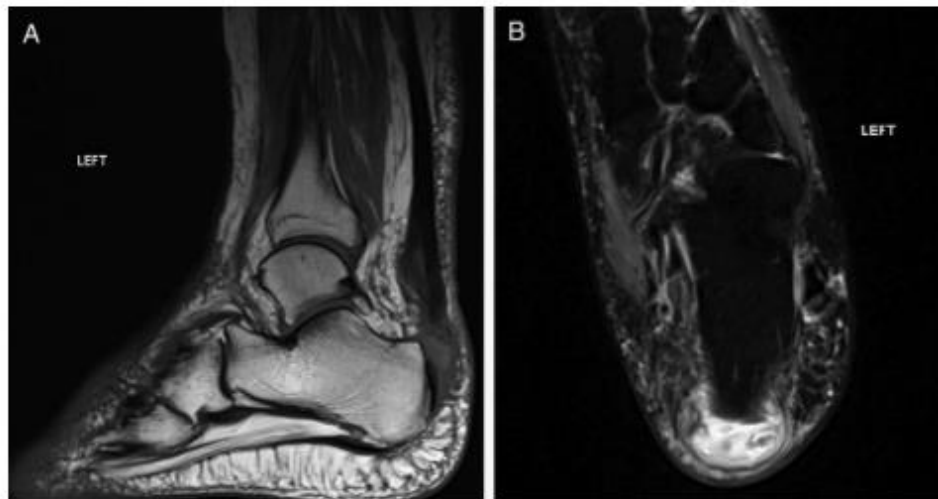


Fig. 2. A patient-sustained Achilles tendon rupture 3 months after the coblation therapy. (A) This T1 magnetic resonance image is showing a 2.7-cm gap at the rupture site near the Achilles insertion. (B) An oblique axial, T2 magnetic resonance image shows a section void of Achilles tendon.

DETALLES TÉCNICOS – COLOCACIÓN DE LA SONDA ZONA II AQUILES

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Chronic Achilles Tendon Overuse Injury: Complications After Surgical Treatment

An Analysis of 432 Consecutive Patients

Mika Paavola,*†‡§ MD, Sakari Orava,|| MD, PhD, Juhana Leppilahti,* MD, PhD,
 Pekka Kannus,‡ MD, PhD, and Markku Järvinen,*† MD, PhD

*From the *Department of Surgery, Tampere University Hospital, Tampere, †Medical School and the Institute of Medical Technology, University of Tampere, Tampere, ‡Accident and Trauma Research Center and the Tampere Research Center of Sports Medicine, UKK Institute, Tampere, Finland, ||Tohtoritalo 41400 Hospital, Turku, Finland, and §Department of Surgery, Oulu University Hospital, Oulu, Finland*

Reintervención 3,2 %

TABLE 1
 Distribution of Complications by the Surgical Diagnoses

Diagnosis	Number of patients	Complication							
		Skin necrosis	Superficial wound infection	Seroma formation	Hematoma	Fibrotic reaction/scar formation	Sural nerve irritation	New partial rupture	Deep vein thrombosis
Peritendinitis	171	8	5	5	1	3	4		1
Retrocalcaneobursitis, insertion tendinopathy, or both	107	1	1		2	1			
Partial tendon rupture	92	5	5		1	1		1	
Tendinosis, tendinitis	50				1				
Anomalous soleus muscle	9								
Tendon xanthoma	3								
Total	432	14	11	5	5	5	4	1	1

DETALLES TÉCNICOS – COLOCACIÓN DE LA SONDA ZONA II AQUILES

ORIGINAL RESEARCH

Surgery for Chronic Achilles Tendinopathy Yields Worse Results in Nonathletic Patients

Nicola Maffulli, MD, PhD, FRCS(Orth), Vittorino Testa, MD,† Giovanni Capasso, MD,‡
Francesco Oliva, MD,§ Alessio Sullo, MD,|| Francesco Benazzo, MD,¶ Renato Regine, MD,**
and John B. King, FRCS††*

TABLE 2. Clinical Results 37.2 Months (Range 29 to 58 Months) After the Index Operation

	Nonathletic Patients (N = 48)	Athletic Patients (N = 45)
Clinical evaluation		
Pain		
None	25	32
Mild, occasional	12	4
Moderate	8	9
Severe	3	0
Activity limitations		
None	24	38
Limited	14	5
recreational but not daily activities		
Limited	10	2
recreational and daily activities		
Satisfaction		
Satisfied	23	40
Satisfied—minor reservations	10	3
Satisfied—major reservations	9	2
Dissatisfied	6	0
Overall results		
Excellent	25	32
Good	8	10
Fair	7	3
Poor	8	0

IMC alto – No deportistas
Sexo femenino

Reintervención 18,8% / 8,9 %
No rupturas tendinosas

CONCLUSIONES

- El mecanismo de la RF en tejido conectivo y nervioso está claramente definido en estudios in vivo e in vitro.
- Los resultados clínicos de su aplicación en fascitis plantares, neuropatías plantares y tendinitis de Aquiles obtienen una mejora de la calidad de vida de los pacientes de forma constante.
- La ejecución técnica precisa evita complicaciones derivadas de la malposición de la sonda de RF.
- Faltan estudios comparativos entre la RF y otros nuevos tratamientos de estas patologías para establecer un algoritmo de tratamiento estándar.



Dr. Roberto de los Mozos
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