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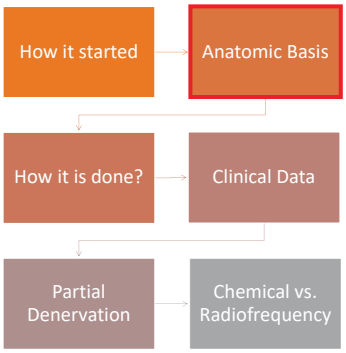
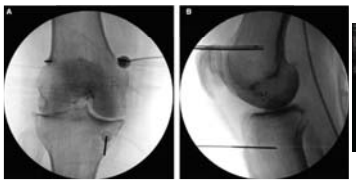
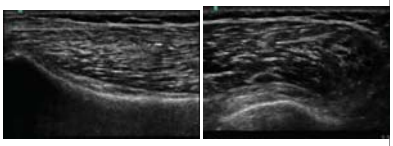
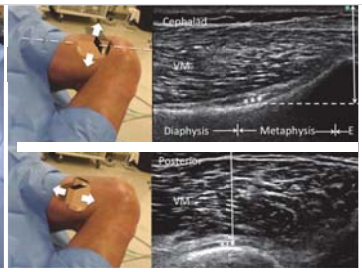
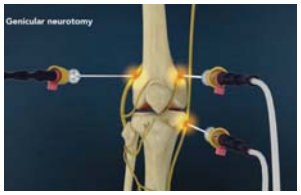


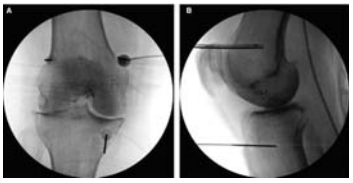


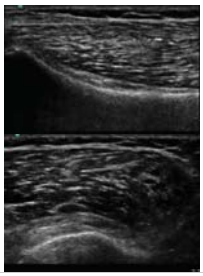




Palisade







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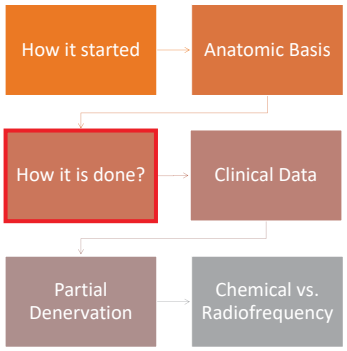
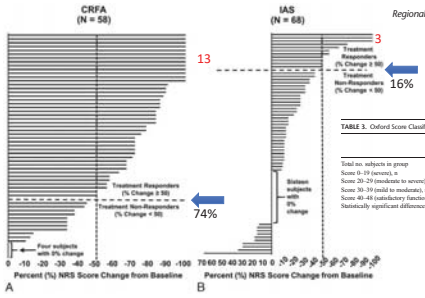


Radiofrequency Procedures to Relieve Chronic Knee Pain
An Evidence-Based Narrative Review

Anuj Bhatia, MBBS, MD, FRCA, FRCPC, FIPP, FFPMRCA, EDRA, CIPS, Philip Peng, MBBS, FRCPC,† and Steven P. Cohen, MD‡*

Regional Anesthesia and Pain Medicine • Volume 41, Number 4, July-August 2016



Prospective, Multicenter, Randomized, Crossover Clinical Trial Comparing the Safety and Effectiveness of Cooled Radiofrequency Ablation With Corticosteroid Injection in the Management of Knee Pain From Osteoarthritis

Tim Davis, MD, Eric Loudermilk, MD,† Michael DePalma, MD,‡ Corey Hunter, MD,§ David Lindley, DO,|| Nilesh Patel, MD,** Daniel Choi, MD,†† Marc Soloman, MD,‡‡ Anita Gupta, DO, PharmD,§§ Mehul Desai, MD,|||| Asokumar Buvanendran, MD,*** and Leonardo Kapural, MD, PhD†††*

Regional Anesthesia and Pain Medicine • Volume 43, Number 1, January 2018

TABLE 3. Oxford Score Classification Distributions

	Baseline		1 mo		3 mo		6 mo	
	CRFA	IAS	CRFA	IAS	CRFA	IAS	CRFA	IAS
Total no. subjects in group	76	75	67	69	65	68	58	67
Score 0–19 (severe), n	51	47	6	8	2	17	3	25
Score 20–29 (moderate to severe), n	25	27	16	27	17	36	12	30
Score 30–39 (mild to moderate), n	0	1	26	26	26	13	20	10
Score 40–48 (satisfactory function), n	0	0	19	8	20	2	23	2
Statistically significant difference	No ($P = 0.54$*)		No ($P = 0.56$)		Yes ($P < 0.00011$)		Yes ($P < 0.00011$)	

Systematic Review and Meta-Analysis of 12 Randomized Controlled Trials Evaluating the Efficacy of Invasive Radiofrequency Treatment for Knee Pain and Function

BioMed Research International
Volume 2019, Article ID 9037510, 14 pages

Tao Hong,[1] Haiyuan Wang,[2] Guangxiao Li,[3] Peng Yao,[1] and Yuanyuan Ding[1]

Genicular nerve ablation: a systematic review of procedure outcomes for chronic knee pain

Lauren Zeitlinger, DO, Judith Kopinski, MD and Thomas DiPasquale, DO

Current Orthopaedic Practice
Volume 30 • Number 5 • September/October 2019

Systematic Review of Radiofrequency Ablation for Management of Knee Pain

Current Pain and Headache Reports (2019) 23: 55

Vwaire Orhurhu[1] · Ivan Urits[1] · Ravi Grandhi[2] · Alaa Abd-Elsayed[3]

NEUROMODULATION & INTERVENTIONAL SECTION

Radiofrequency Procedures for the Treatment of Symptomatic Knee Osteoarthritis: A Systematic Review

Prabjit Ajrawat, H.BKin,* Lenny Radomski, MD,* Anuj Bhatia, MD, MBBS, FRCA, FRCPC,†,‡,§ Phillip Peng, MBBS, FRCP,† Nikhil Nath,* and Rajiv Gandhi, MD, MSc, FRCSC*

Pain Medicine, 21(2), 2020, 333–348

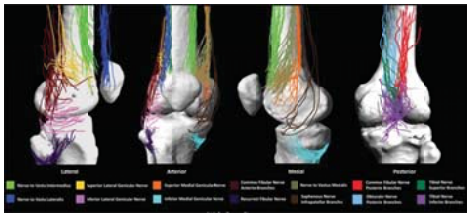
The Effectiveness and Safety of Genicular Nerve Radiofrequency Ablation for the Treatment of Recalcitrant Knee Pain Due to Osteoarthritis: a Comprehensive Literature Review

Quinn Tate[1] · Aaron Conger[1] · Taylor Burnham[1] · Daniel M. Cushman[1] · Richard Kendall[1] · Byron Schneider[2] · Zachary L. McCormick[1]

Current Physical Medicine and Rehabilitation Reports (2019) 7:404–413

13 RCT, 2 PC, 7P, 11 case series

Areas that is not clear



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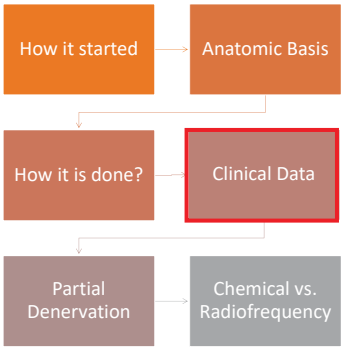
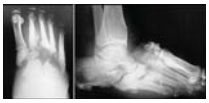


Charcot joint



- Systemic disease
- Affect both nervous and vascular system

Partial Denervation

RECONSTRUCTIVE

Partial Joint Denervation I: Wrist, Shoulder, and Elbow

A. Lee Dellon, M.D., Ph.D.
Baltimore, Md.

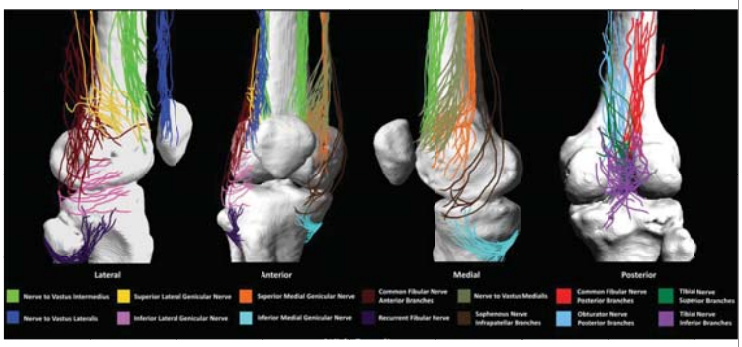
Background: Partial joint denervation is the concept of preservation of joint function and relief of joint pain by interrupting the neural pathways that transmit the pain message from the joint to the brain. When traditional, non-operative, musculoskeletal approaches fail, the surgical approach may require joint fusion or replacement arthroplasty. The purpose of this article is to extend these concepts from the wrist to the elbow and shoulder.

RECONSTRUCTIVE

Partial Joint Denervation II: Knee and Ankle

A. Lee Dellon, M.D., Ph.D.
Baltimore, Md.

Background: Partial joint denervation is the concept of preservation of joint function and relief of joint pain by interrupting neural pathways that transmit the pain message from the joint to the brain. Partial denervation of painful wrist, elbow, and shoulder joints was described in part I. Application of these principles to the knee and ankle is described in part II.
Methods: Cadaveric anatomical studies identified innervation of the knee and the ankle (sinus tarsi) to provide a guide to nerve blocks and surgical intervention. Patients were evaluated who had sports injuries, trauma, osteoarthritis, or previous arthroplasty/scope procedures of the knee and/or ankle who failed to respond to traditional musculoskeletal approaches.
Results: The results obtained for partial joint denervation of the upper ex-



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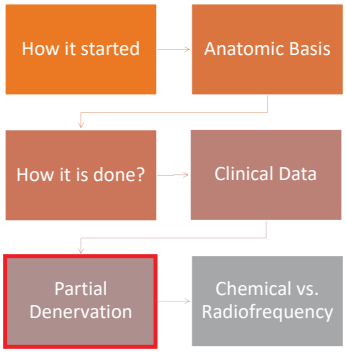

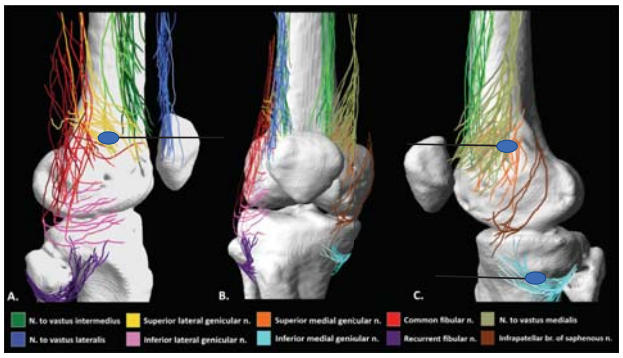

ORIGINAL ARTICLE

Chemical Ablation of Genicular Nerve with Phenol for Pain Relief in Patients with Knee Osteoarthritis: A Prospective Study

Roberta Cristina Risso, MD*; Leonardo Henrique Cunha Ferraro, MD, PhD*; Thiago Nouer Frederico, MD*; Philip W. H. Peng, MBBS, FRCPC†; Marcus Vinicius Luzo, MD, PhD*; Pedro Debieux, MD, PhD*; Rioko Kimiko Sakata, MD, PhD*

*Federal University of São Paulo, São Paulo, Brazil; †Toronto Western Hospital, University of Toronto, Toronto, Ontario, Canada

Table 3. Pain Intensity (range)

Baseline (T_0)	7 (6 - 8)
2wks	4 (3 - 5)*
1mos	4 (2 - 5)*
2mos	4 (3 - 5)*
3mos	4 (2 - 5)*
6mos	4 (3 - 6)*

Table 2. WOMAC SCORE-subscale and composite Pain >50% relief is 46% at 6 months

WOMAC Subscale	Baseline	2wks	1mos	2mos	3mos	6mos
Pain	9(8-13)	6(4-7)*	4(2 - 6)*	5(2-6)*	3(2-6)*	4(2-8)*
Stiffness	4(2-6)	1(0-3)*	1(0-2)*	1(0-2)*	0(0-2)*	0(0-2)*
Function	32(26-44)	15(11-25)*	13(9-18)*	13(7-18)*	11(7-19)*	13(9-21)*
Composite Score	45(35-62)	23(16-34)*	19(13-25)*	18(10-26)*	16(9-29)*	17(12-26)*

Table 4. Number of Patients with Side Effects and Complications

	2 weeks	1 month	2 months	3 months	6 months
Local pain	2 (5%)	0	0	0	0
Hypoesthesia	6 (14%)	0	0	0	0
Swelling	13 (30%)	5 (12%)	0	0	0
Bruise	9 (21%)	0	0	0	0

Summary

- Intra-articular injection:
  - steroid, VS, and PRP
  - efficacy and limitations
- Genicular nerves ablation
  - Anatomical basis
  - Technical aspect
  - Efficacy
  - Radiofrequency vs chemcial

Thank You