CURICULUM VITAE

Dr. dr. I Putu Eka Widyadharma, M.Sc, Sp.S(K)

Pendidikan :

S1	:	Universitas Udayana Denpasar Tahun 1997
Profesi	:	Universitas Udayana Denpasar Tahun 1999
S2 –Clinical Medicine	:	Universitas Gadjah Mada Yogyakarta Tahun 2009
Spesialis Saraf	:	Universitas Gadjah Mada Yogyakarta Tahun 2009
Konsultan Nyeri	:	Kolegium Neurologi Indonesia Tahun 2014
S3	:	Universitas Udayana Tahun 2018

Pekerjaan :

Staf Divisi Nyeri dan Nyeri kepala Departemen/KSM Neurologi FK UNUD/RSUP Sanglah Denpasar

Pelatihan/Workshop :

- Neuropathic pain Management, Manila, Philippine, 2011
- Pain Management, Mumbai, India, 2012
- Diabetic Neuropathy Workshop, , Manila, Philippine, 2012
- USG for Neurologist, Jakarta, 2012
- Neuropathic pain workshop, Milan, Italy 2012
- USG Guidance for Interventional Pain management, Bandung 2012
- Pain Management Camp, Singapore 2013
- Interventional Pain Management, Medan 2013
- USG Guidance In Pain management, Yogyakarta 2014
- Asia Facific Pain Summit, Denpasar 2016
- Neuropathic Pain, Yokohama, Jepang 2016
- Dry Needling, Perth, Australia, 2017

Carpal Tunnel Syndrome

EKA WIDYADHARMA

Definition

Compression neuropathy of the median nerve in wrist area (tardy median nerve palsy)

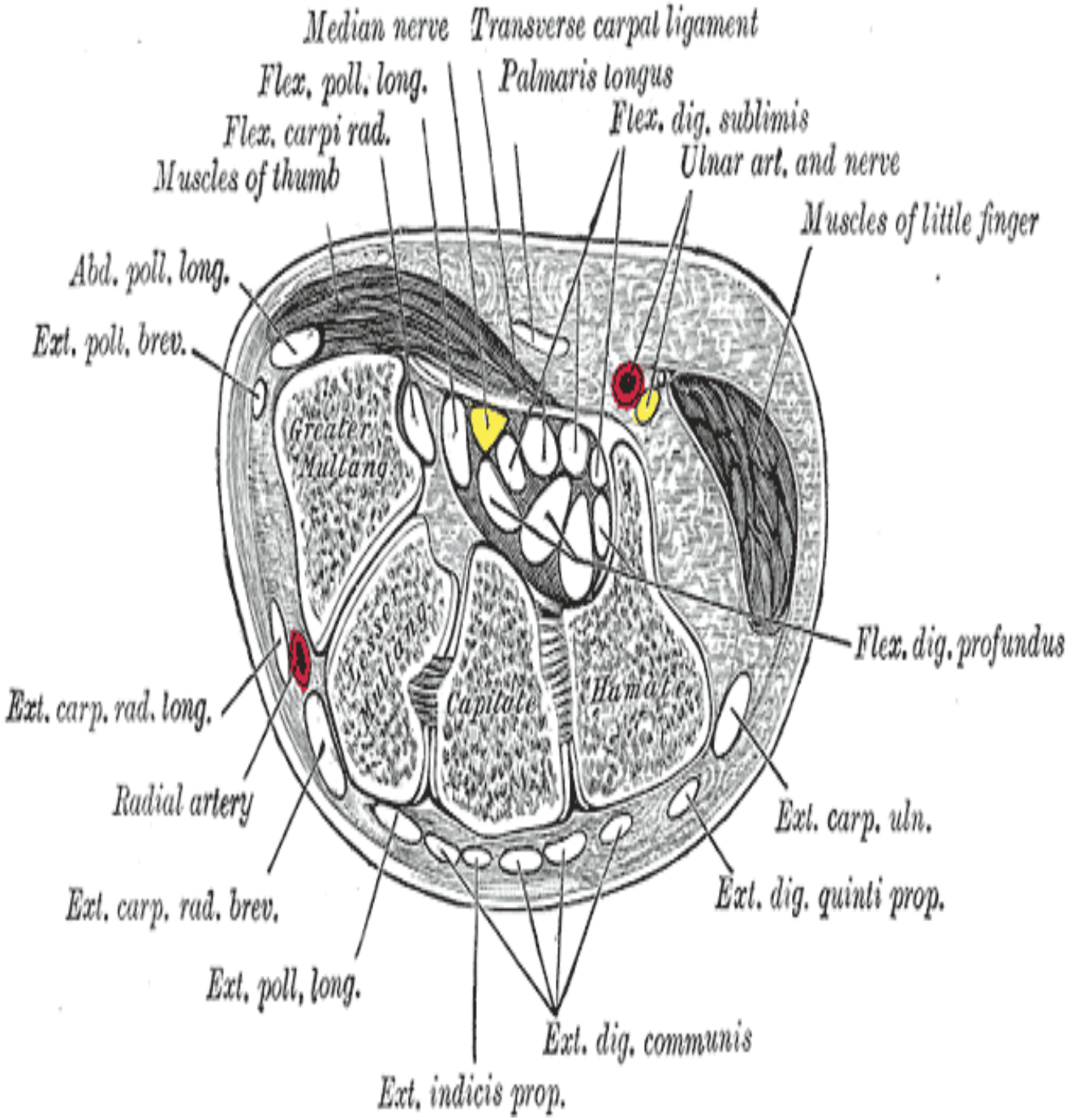
Described in 1854 by Sir James Paget

anatomy

The median nerve travels from the forearm into your hand through a "tunnel" in your wrist.

Anatomy

hook of the hamate
triquetrum and
pisiform medially
scaphoid trapezium
and fibroosseous
F.c.r. sheath laterally.



Carpal tunnel syndrome

Pressure on the median nerve can result in; sensations of numbness, tingling, pain and clumsiness of the hand.

(typical median N. distribution in the radial three and one – half digits).

The combination of these symptoms is called carpal tunnel syndrome

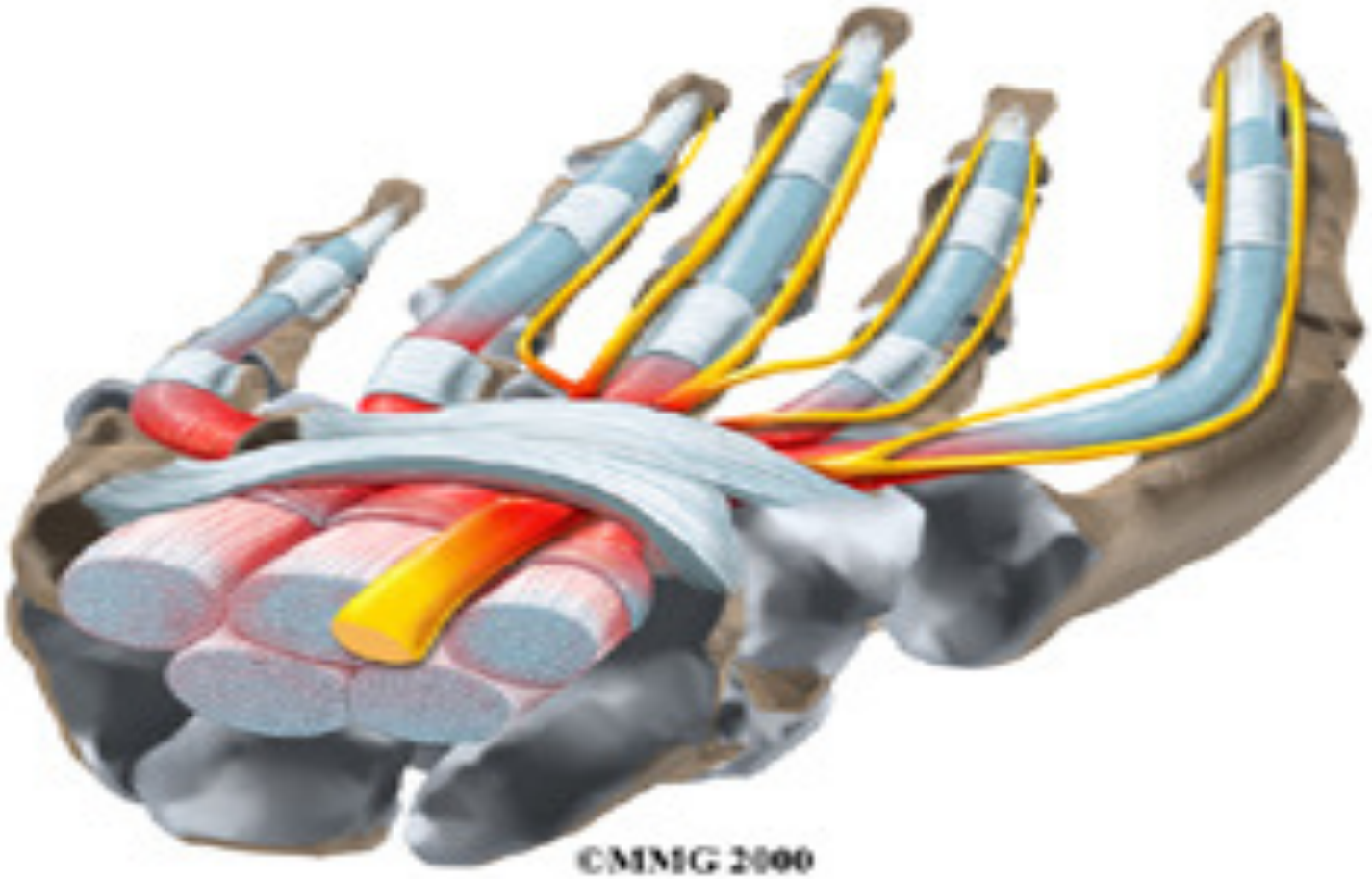
Carpal tunnel syndrome

Most often 30 -60 years old

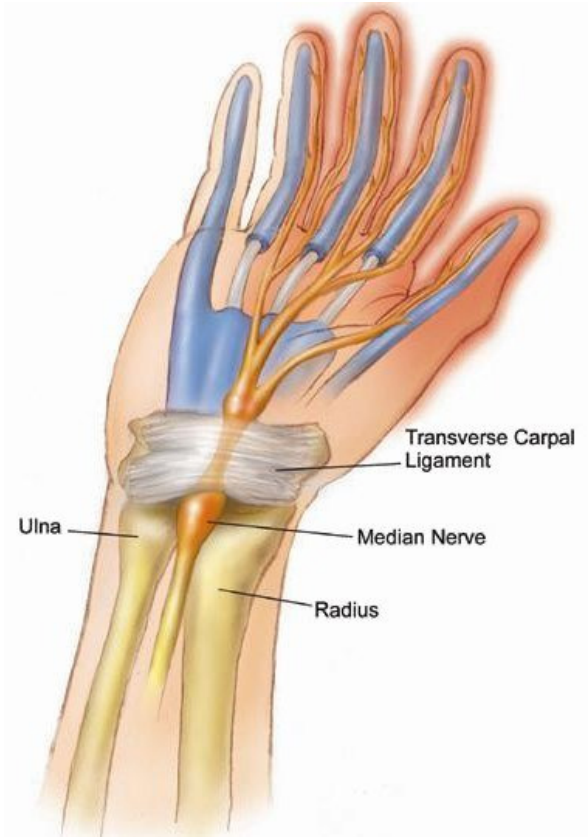
Five times more common in women

Older, overweight, and physically inactive people

Carpal tunnel syndrome



Carpal tunnel syndrome



Etiology

1-primery or Idiopathic

2- secondary

A: Local etiology

I : Anatomical malformation

II : Tumors

III: Infections

IV: Bone prominence

B: Systemic etiology

obesity, diabetes mellitus, thyroid dysfunction, R.A

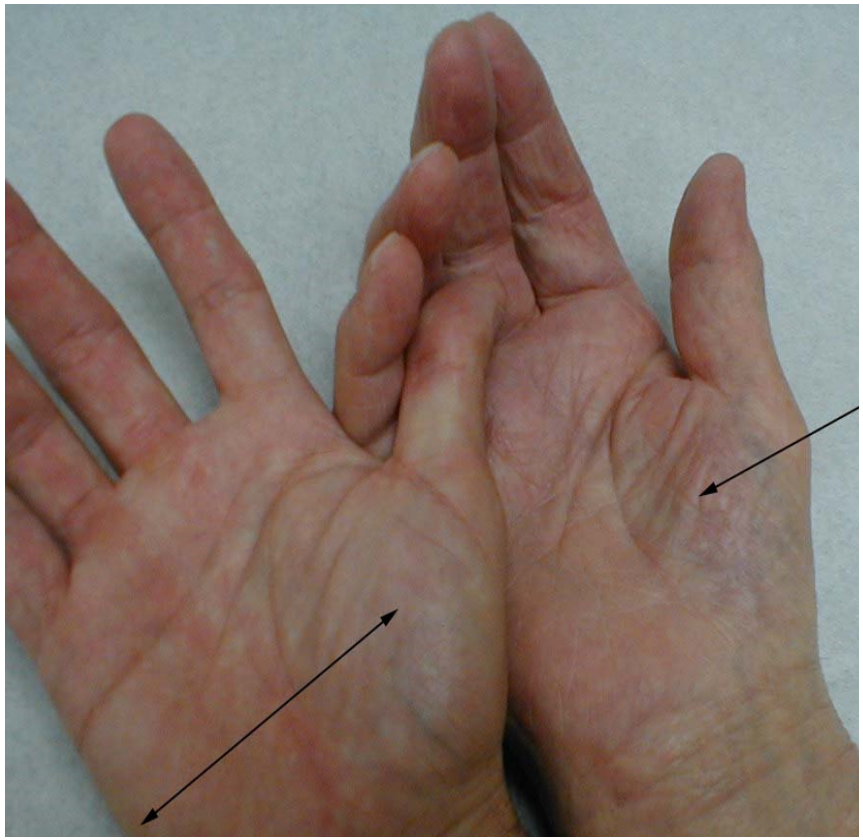
Clinical finding

History often is more important than the physical examination in making the diagnosis of CTS

Numbness and tingling

- hands fall asleep or things slip from the fingers without the person's noticing (loss of grip, dropping things), as well as numbness and tingling
- Symptoms are usually intermittent and are associated with certain activities (i.e., driving, reading the newspaper, crocheting, painting)
- Nocturnal symptoms that wake the individual are more specific of CTS, especially if the patient relieves symptoms by shaking the hand/wrist

Clinical finding



diagnosis

History

Clinical examination I: Tinel's nerve percussion test

II: Phalen's wrist flexion test

III: Tourniquet test

IV: Carpal compression test

V: Tethered median nerve stress test

Para clinical examination

diagnosis

Phalen's Test

Tinel's Test

Reverse Phalen Test

diagnosis

Electromyography

90% sensitive and 60% specific

Measurement of how fast & how well the median nerve responds indicates if there is damage to the nerve.

treatment

1- Non surgical treatment

2- Surgical treatment

Endoscopic release

1-age over 50

2-duration longer than 10 months

3-constant paresthesia

4- stenosing flexor tenosynovitis

5-positive phalen test less than 30 seconds

treatment

Steroids by local injection

Splints, especially if worn full time

NSAIDs, diuretics, yoga, laser & ultrasound, Dry Needling

Non surgical treatment

Local steroid injection for moderately severe idiopathic carpal tunnel syndrome

BMC Musculoskelet Disord. *2010*

Published online 2010 April

Department of Orthopedics, Hässleholm and Kristianstad Hospitals, SE-28125 Hässleholm, Sweden

Non surgical treatment

randomized double-blind placebo-controlled trial

A total of 120 patients will be randomized to injection of 80 mg Methylprednisolone, 40 mg Methylprednisolone, or normal saline, each also containing 10 mg Lidocaine. Evaluation at baseline and at 5, 10, 24 and 52 weeks after injection includes validated

Non surgical treatment

Non surgical treatment

Surgical treatment

Surgical Decompression

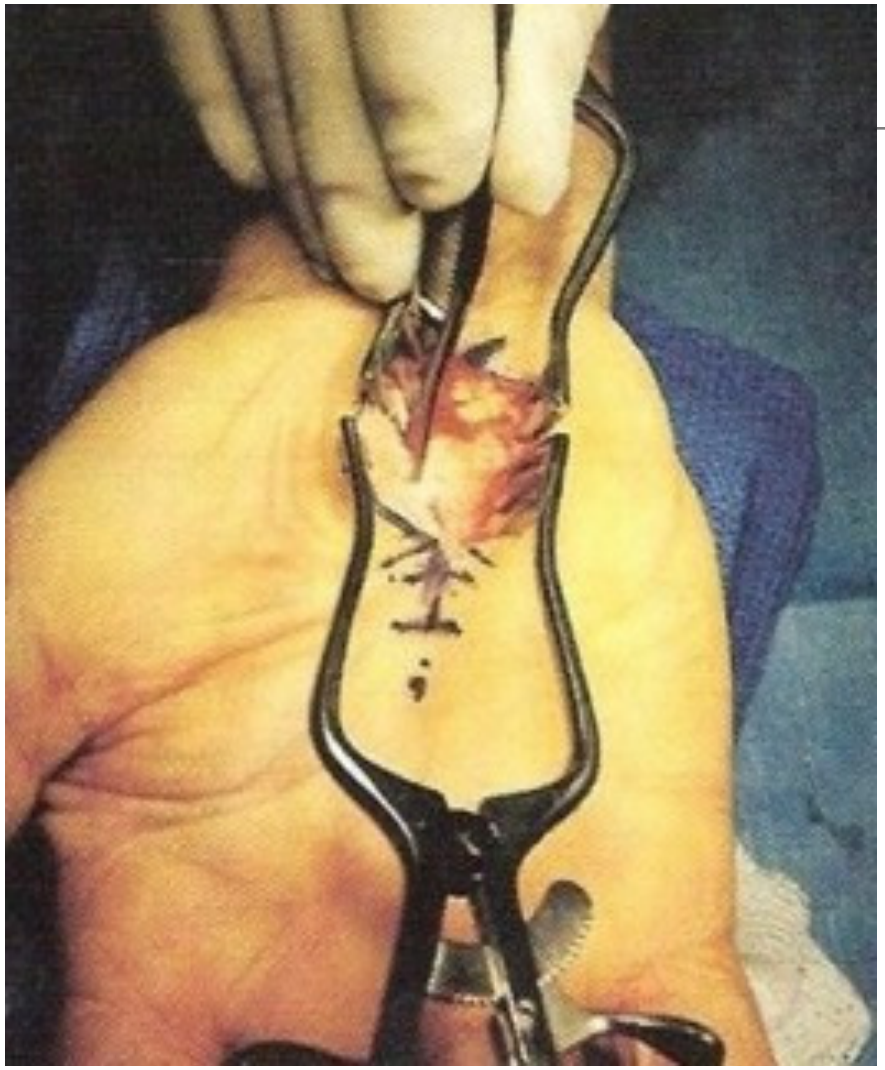
Open or endoscopic (similar success)

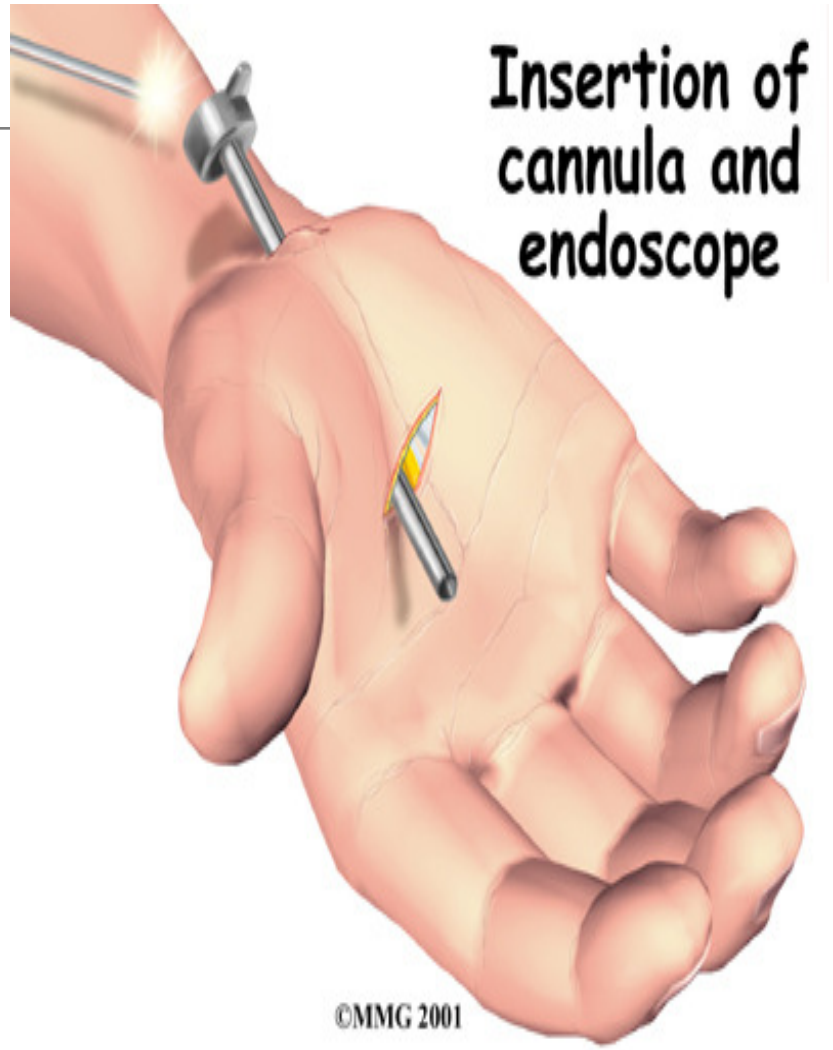
Only means of definitive cure (American Academy of Neurologists)

Up to 86% improvement in pain

Complication 1-2% (higher in endoscopic)

Wilson JK, Sevier TL. A review of treatment for carpal tunnel syndrome. Clinical Rehabilitation. 2003; 25:3:113-119.





Surgical complication

1- Infection

2- Nerve injury

3- Reflex Sympathetic Dystrophy

4- Painful scar

5- Bowstringing

6- Muscle weakness

7- Skin necrosis

Recurrence

In 1000 case 20% recurrence reported

Causes: 1- Adhesion

2- Anatomical abnormality

Thank you for your attention

Myofascial Upper Trapezius

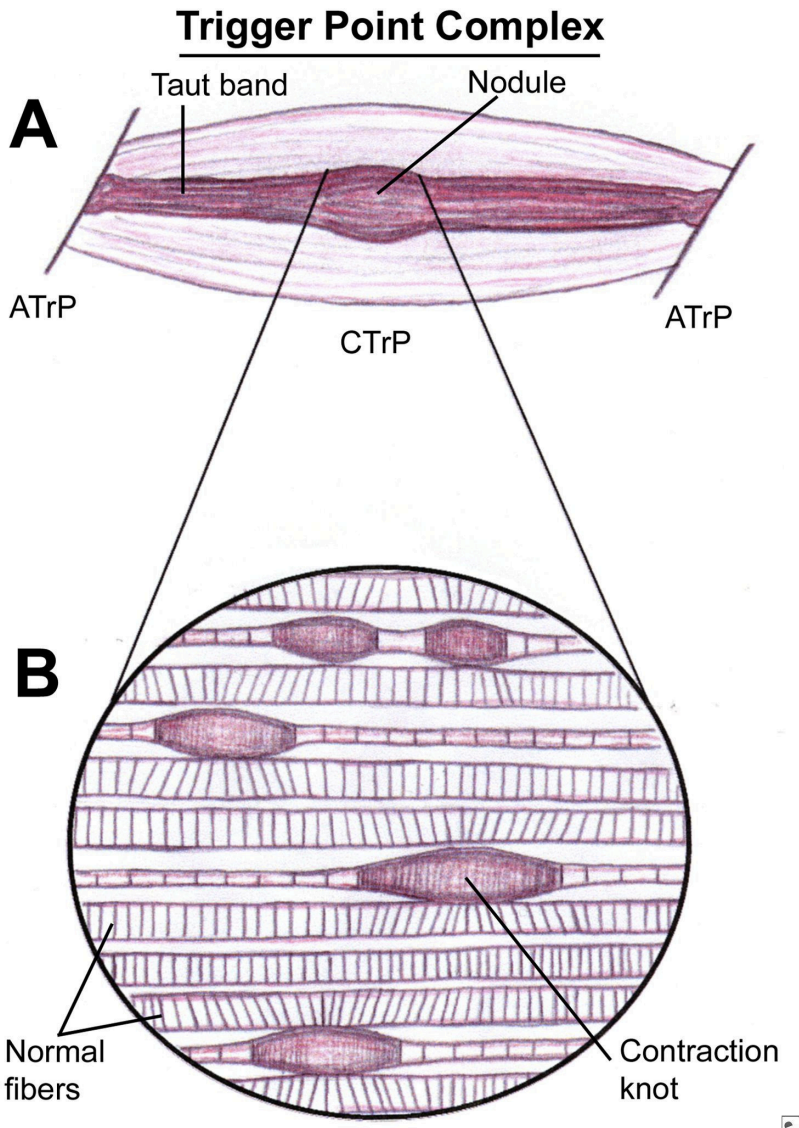
Myofascial pain syndrome

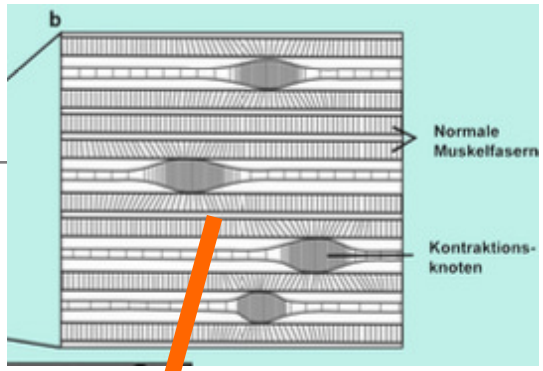
A myalgic condition in which muscle and musculotendinous pain are the primary symptoms

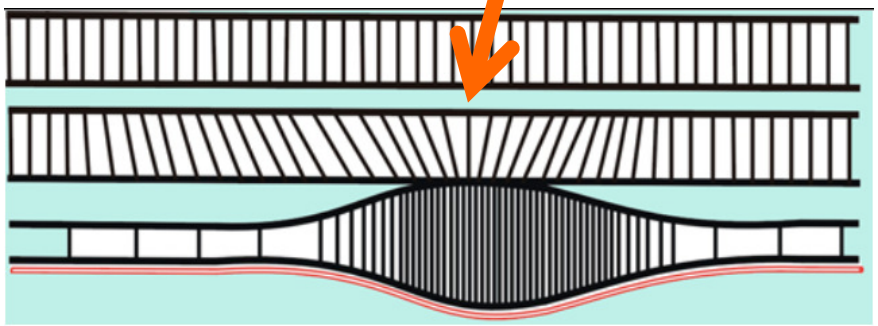
The heart of the symptom is the *myofascial trigger point (TrP)* - tender region in the taut band

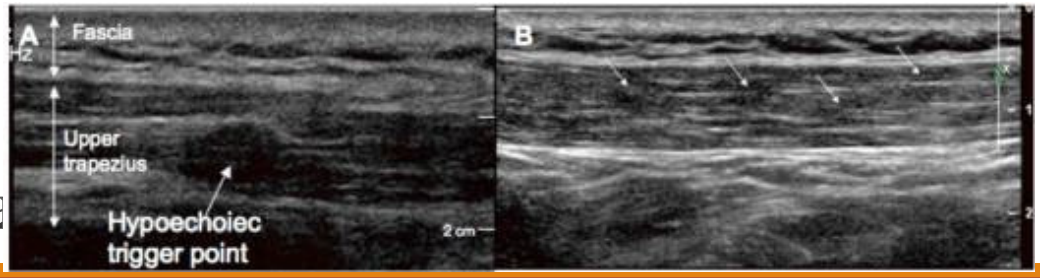
- a small, painful, locus of abnormal muscle which is the source of the muscular dysfunction
- focus of the sensory hyperirritability on a discrete, hyperactive region of muscle

Gerwin RD, 2010. Myofascial Pain Syndrome, Muscle pain: Diagnosis and treatment, Springer-verlag Berlin Heidelberg


Trigger Point Complex
A
Taut band
Nodule
ATrP
CTrP
ATrP
B
Normal fibers
Contraction knot


b
Normale Muskelfasern
Kontraktions-knoten




A
Fascia
Upper trapezius
Hypoechoiec trigger point
2 cm
B

The Alleged Cause/Etiology of TrP

TrP may develop after initial injury to the muscle fibers

- Traumatic events or repetitive microtrauma to the muscles
- Muscle overuse/stress → localized ischemia
- Postural stress
- Metabolic stress

Lavelle ED, et al. 2007. Myofascial Trigger Points. Anesthesiology Clin;25:841-851

Etiologic factors associated with TrP Syndromes

Mechanical Provocative factors

- ✓Scoliosis
- ✓Leg-length inequality
- ✓Spondylosis
- ✓Joint osteoarthritis
- ✓Postsurgical joint replacement
- ✓Work-related mechanical stress
- ✓Repetitive strain injury
- ✓Postural work-related mechanical stress
- ✓Hypermobility syndromes

- ***Metabolic provocative factors***
  - ✓ Hypometabolic states (e.g. hypothyroidism)
  - ✓ Iron deficiency
  - ✓ Vitamin deficiency → D, B12
- ***Infectious disease***
  - ✓ Lyme disease
  - ✓ Candida vaginal yeast infection
- ***Nerve compression***
  - Radiculopathy
  - entrapment

Mechanism of taut band formation

Muscle injury

Ischemia, hypoxia

Release of CGRP, Sub P, lowered pH

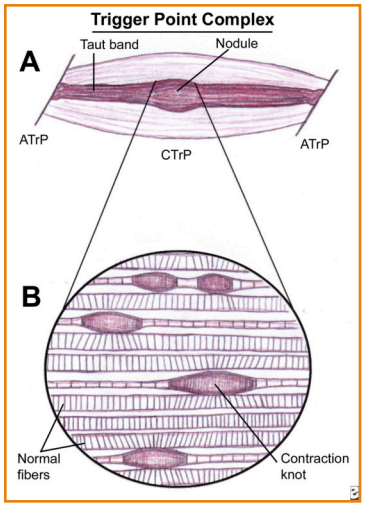
Histamine Release

Enhanced ACh release
AChE inhibition
Upregulation of AChR
Upregulation SNS Activity

Increases postsynaptic ACh effect

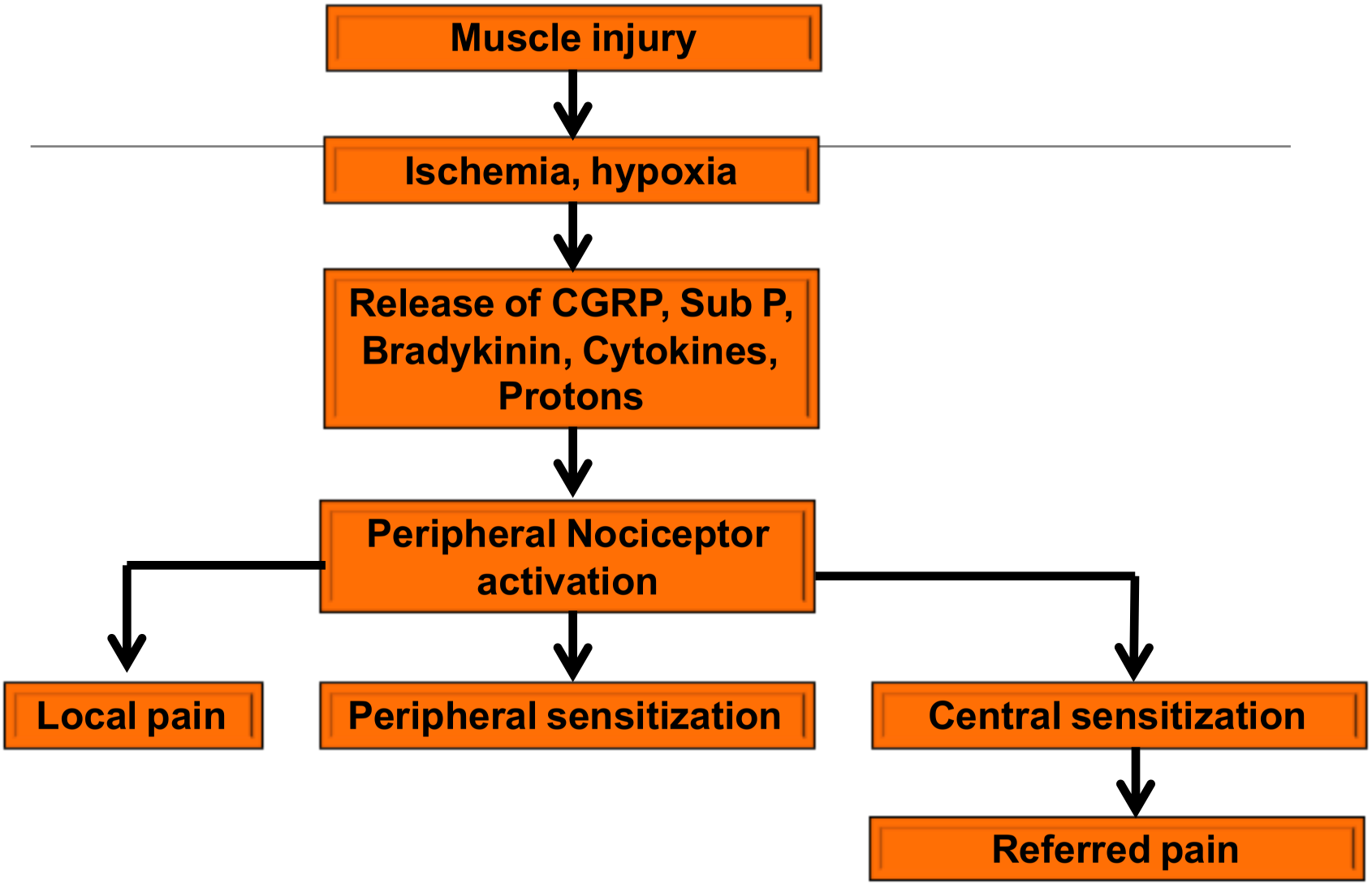
Increased cytosolic intracellular Ca^{2+}

Prolonged muscle fiber contraction "taut band"



Gerwin RD, 2010. Myofascial Pain Syndrome, Muscle pain: Diagnosis and treatment, Springer-verlag Berlin Heidelberg

Relationship of muscle injury to the sensory manifestation of TrP pain



Gerwin RD, 2010. Myofascial Pain Syndrome, Muscle pain: Diagnosis and treatment, Springer-verlag Berlin Heidelberg

Trapezius

REFERRAL

Trigger points on the lateral upper edge refer into lateral neck and temples, causing "tension neck ache". Other points in the middle and lower fibers refer into the posterior neck and shoulder.

ACTION

The upper fibers elevate the shoulder and rotate the glenoid fossa upward. The lower fibers assist this motion. The middle fibers strongly adduct the scapula.

ORIGIN

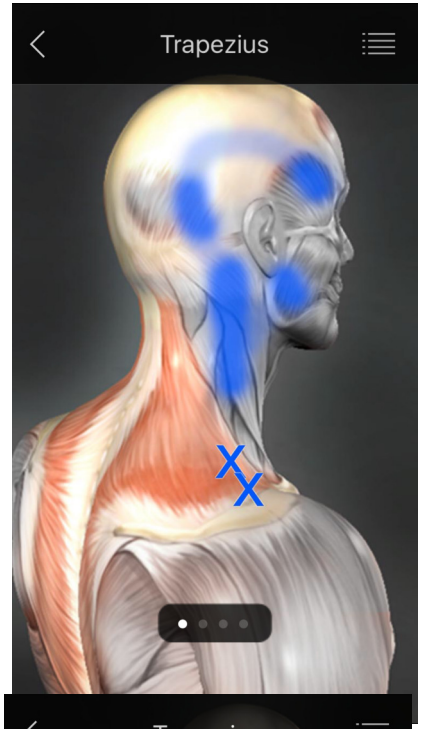
Nuchal ligament, C6-T12 spinous processes

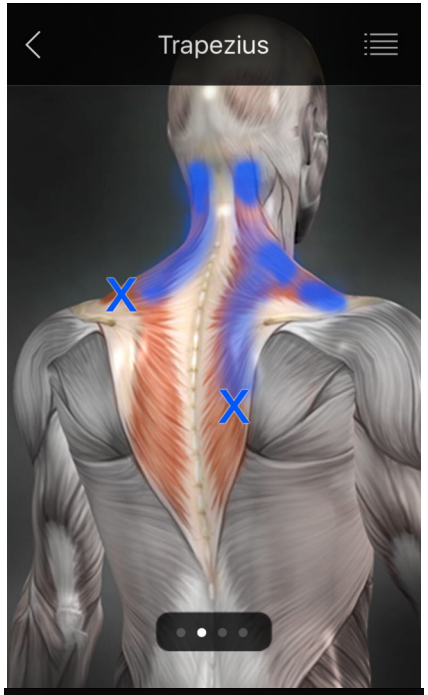
INSERTION

Scapular spine, acromion process, distal clavical

NERVE

Accessory nerve (motor); cervical spinal nerves C3 and C4 (motor and sensory)





Dry Needling-Definition

Dry Needling

A skilled intervention that uses a thin filiform needle to penetrate the skin and stimulate underlying myofascial trigger points, muscular and connective tissues for the management of neuromusculoskeletal pain and movement impairments.

(American Physical Therapy Association Dry Needling Task Force, May, 2012)

Dry Needling versus Acupuncture

SIMILARITIES

The Tool

DIFFERENCES

Evaluation

Application

Overall Goal

Response to needling

Dry needling, when indicated, produces immediate effect.

Different people respond to needling differently and are thus classified as strong, average and weak responders.

A strong responder will need minimal needle stimulation to achieve needling effect

Overstimulation can worsen patient's pain.

Suggested Indications

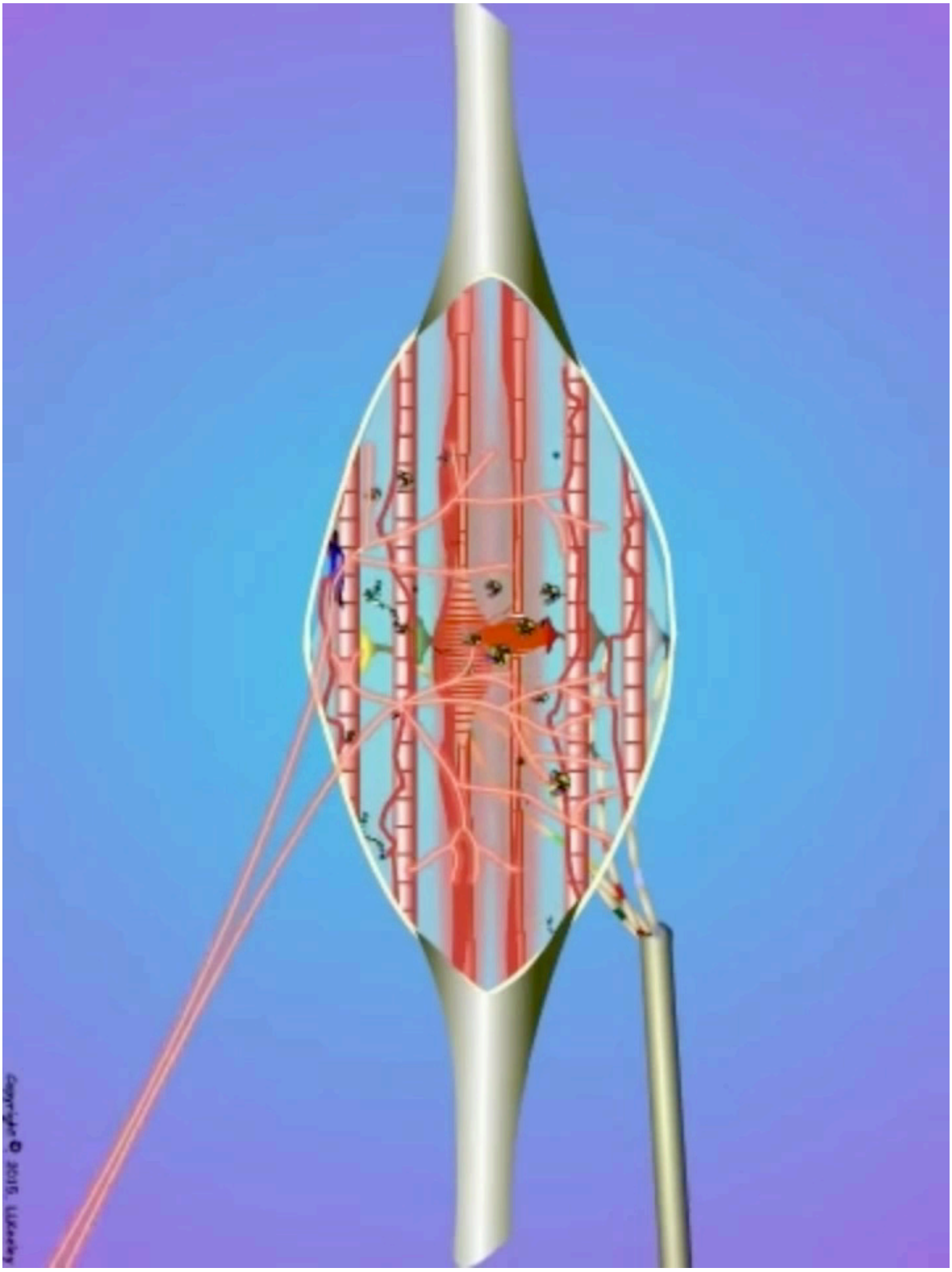
Trigger points: Releases trigger points

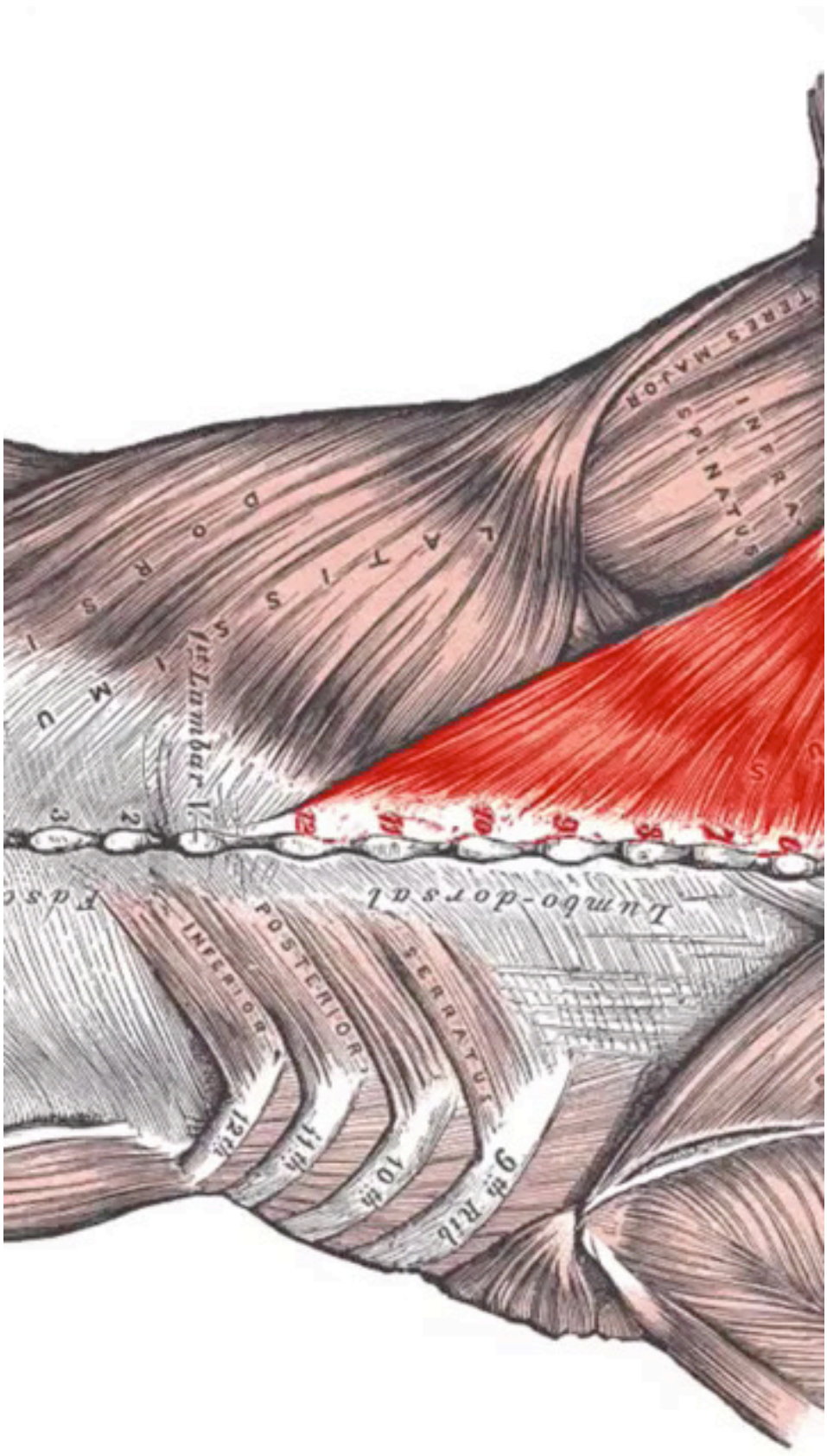
Pain of muscular origin, e.g. muscular component of acute spinal pain: for analgesia, control of muscle spasm.

Musculoskeletal pains e.g. osteoarthritis: works like pain killers, provides temporary relief

Referred pains: works like pain killers, provides temporary relief

Pathologies of soft tissue origins: e.g. tennis elbow, plantar fascitis




TERES MAJOR
LATISSIMUS DORSI
1st Lumbar
Lumbo-dorsal
SERRATUS POSTERIOR INFERIOR
9th Rib
10th
11th
12th

PM R 7 (2015) 711-720

www.pmrjournal.org

Original Research—CME

Dry Needling Alters Trigger Points in the Upper Trapezius Muscle and Reduces Pain in Subjects With Chronic Myofascial Pain

Lynn H. Gerber, MD, Jay Shah, MD, William Rosenberger, PhD, Kathryn Armstrong, DPT, Diego Turo, PhD, Paul Otto, BS, Juliana Heimur, BS, Nikki Thaker, BS, Siddhartha Sikdar, PhD

Abstract

Objective: To determine whether dry needling of an active myofascial trigger point (MTrP) reduces pain and alters the status of the trigger point to either a non–spontaneously tender nodule or its resolution.
Design: A prospective, nonrandomized, controlled, interventional clinical study.
Setting: University campus.
Participants: A total of 56 subjects with neck or shoulder girdle pain of more than 3 months duration and active MTrPs were recruited from a campus-wide volunteer sample. Of these, 52 completed the study (23 male and 33 female). Their mean age was 35.8 years.
Interventions: Three weekly dry needling treatments of a single active MTrP.
Main Outcome Measures: Primary Outcomes: Baseline and posttreatment evaluations of pain using a verbal analogue scale, the Brief Pain Inventory, and the status of the MTrP as determined by digital palpation. Trigger points were rated as active (spontaneously painful), latent (requiring palpation to reproduce the characteristic pain), or resolved (no palpable nodule).
Secondary Outcomes: Profile of Mood States, Oswestry Disability Index, and Short Form 36 scores, and cervical range of motion.
Results: Primary outcomes: A total of 41 subjects had a change in trigger point status from active to latent or resolved, and 11 subjects had no change ($P < .001$). Reduction in all pain scores was significant ($P < .001$). Secondary outcomes: Significant improvement in posttreatment cervical rotational asymmetry in subjects as follows: unilateral/bilateral MTrPs ($P = .001$ and $P = 21$, respectively); in pain pressure threshold in subjects with unilateral/bilateral MTrPs, ($P = .006$ and $P = .012$, respectively); improvement in the SF-36 mental health and physical functioning subscale scores ($P = .019$ and $P = .03$), respectively; and a decrease in the Oswestry Disability Index score ($P = .003$).
Conclusions: Dry needling reduces pain and changes MTrP status. Change in trigger point status is associated with a statistically and clinically significant reduction in pain. Reduction of pain is associated with improved mood, function, and level of disability.

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MYOFASCIAL PAIN AND TREATMENT: NARRATIVE REVIEW

The local twitch response during trigger point dry needling: Is it necessary for successful outcomes?

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ABSTRACT

Background: Myofascial trigger point (MTrP) injection and trigger point dry needling (TrPDN) are widely accepted therapies for myofascial pain syndrome (MPS). Empirical evidence suggests eliciting a local twitch response (LTR) during needling is essential.
Objective: This is the first review exploring the available literature, regardless of study design, on the neurophysiological effects and clinical significance of the LTR as it relates to reductions in pain and disability secondary to MTrP needling.
Methods: PubMed, MEDLINE, Science Direct and Google Scholar were searched up until October 2016 using terms related to trigger point needling and the LTR.
Results: and Discussion: Several studies show that eliciting a LTR does not correlate with changes in pain and disability, and multiple systematic reviews have failed to conclude whether the LTR is relevant to the outcome of TrPDN. Post needling soreness is consistently reported in studies using repeated in and out needling to elicit LTRs and increases in proportion to the number of needle insertions. In contrast, needle winding without LTRs to MTrPs and connective tissue is well supported in the literature, as it is linked to anti-nociception and factors related to tissue repair and remodeling. Additionally, the positive biochemical changes in the MTrP after needling may simply be a wash out effect related to local vasodilation. While the LTR during TrPDN appears unnecessary for managing myofascial pain and unrelated to many of the positive effects of TrPDN, further investigation is required.

TERIMA KASIH