Diagnosis & Treatment of Myofascial Pain

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Myofascial Pain

1. 75-90% of musculoskeletal pain
2. A top 10 primary care Dx
3. 75% of patients at UNM pain clinic
4. Not effectively taught
5. Not diagnosed or under-diagnosed
6. Not treated or mistreated
Myofascial Pain

- Examine your patient
- Look, listen, lay on hands
- Grooming
- Education
Look
Feel
Listen/Groom
History

First described > 200 yrs ago

- Myositis/fibrositis
- Travell identifies TP’s in the 40’s
- Major advances in pathophysiology
Myofascial Pain

• 63 yr. old male s/p mva with multiple facial fxs.
• Severe neck & head pain
• Limited rom
• Multiple consultations & procedures
Sternocleidomastoid Pain Pattern
Suboccipital Muscles
Pain Pattern & Symptoms

- Head Pain, difficult to localize - “Hurting all over”
- Eye and forehead pain and pain at base of skull
- Distressing headache caused promptly when weight of occiput presses against pillow
- Head is tilted to one side and rotated to other
Scaleni
ROM Test
Scalene-Cramp Test
Contraction in shortened position
Treatment

- TP injections of bilat. scm, scalenes, post. Cx muscles.
- Relief of pain & restoration of rom
Myofascial Pain Syndrome

- Simple or complex
- Pain and/or autonomic phenomena referred from active myofascial trigger points with associated dysfunction
Skeletal Muscle

• Largest organ, > 40% of body weight
• 400 muscles
• All can develop TP’s
Myofascial Trigger Point (TP)

- A hyperirritable locus within a taut band of skeletal muscle
- Located in the muscle tissue or its associated fascia
Nature of Trigger Points

At the site of the Myoneural Junction (Motor Endplate)
Integrated Trigger Point Hypothesis

Dysfunctional Endplate Region

- Nociceptive nerve fibers
- Sensitizing substances
- Energy crisis

Motor nerve terminal
- Excess acetylcholine release
  - Depolarization
    - SR
    - Calcium release
- Increased energy demand
- Decreased energy supply
- Sarcomere contracture
- Compression of vessels
- Muscle fiber
A Hyperirritable Spot
Associated with a hyper-sensitive palpable Nodule
Found in a Taut Band
Mid belly, motor endplate zone

Nature of Trigger Points
Palpation – In one direction only

Pincher

Flat
Palpation

Must be directly on or very near Central TrP (Motor End Plate zone) to elicit a Local Twitch Response (LTR)
Trigger Point

- Active: causes pain
- Latent: silent, but may reduce motion and cause weakness
Referred pain from TPs

- Dull, aching, deep
- Does not follow segmental or neurological patterns
- Usually occurs within same dermatome, myotome and sclerotome
24 yr old woman with hip and leg pain

- Fell off ladder
- Severe pain and antalgic gait
- Multiple consults and tests
- Sx resolved with TPI’s, stretching
Piriformis & Lateral Rotators
Pain Pattern & Symptoms

- Pain increased by sitting, standing or walking
- Antalgic Gait – Limping
- TrPs aggravated by prolonged hip flexion, adduction and medial rotation - Crossing thighs
- Seated – Tend to squirm and shift
Piriformis & Lateral Rotators
Anatomy, Innervation & Function

- Piriformis – $S_1$ and $S_2$
- Lateral rotators - $L_4$, $L_5$ and $S_3$
- Obturator Externus
  Obturator nerve
- Lateral rotation of thigh
- Stabilizes hip joint and assists holding femoral head in acetabulum
Gluteus Minimus
Pain Pattern & Symptoms

• “Pseudo-Sciatica”
• Anterior fibers painful when rising from chair with difficulty straightening
• Painful and limps when walking
Gluteus Medius
Pain Pattern and Symptoms

• Pain with walking and gait distortions
• Stands predominantly on one leg
• Pain when lying on affected side or on back
• Pain when slouched down in chair
Gluteus Medius/Minimus Home Exercise

Runners Crossover

“Lover - Drop L” Alternate
Gluteus Maximus ROM Test

Knee to Opposite Axilla - passive
Medially rotate thigh at hip – Restriction and pain pattern
TrP 1
Severe posterolateral neck pain, often constant, extends to side of head, in temple and back of orbit
Occasional pain at angle of jaw and rarely, pain to lower molar teeth
Upper & Lower Trapezius Pain Pattern & Symptoms

TrP 2
Neck pain without headache

TrP 3
Suprascapular, acromial, upper back and neck pain after all other TrPs have been inactivated
Thoracolumbar Paraspinals Anatomy & Innervation

Dorsal Primary Divisions of Spinal Nerves
Multifidi and Rotatores
Deep Paraspinals ROM Test

Waist Twist in Chair
Spine is flexed and simultaneously rotated right
Test for restriction in right multifidi/rotatores
Longissimus and Iliocostalis
Superficial Paraspinals ROM Test

Back Stretch in Chair – Diver
First chin to chest, then roll down
Roll up and bring head up last
Perpetuating factors

- Trauma
- Ergonomics
- DJD
- Hypothyroidism, anemia, DM
- Musculo-skeletal: short upper arms, leg length, scoliosis
Perpetuating Factors
Mechanical Stresses
Lower Limb-Length Inequality
Left - S-curve, low right shoulder & hip
Right - C-curve, low left shoulder & right hip
Perpetuating Factors
Mechanical Stresses

Asymmetrical Pelvis - Small Hemipelvis

A  Lateral tilt of pelvis, S-shaped functional scoliosis, shoulder tilt
B  Correction by leveling with Sit-pad
C  Counter correction under wrong side
Treatment

• Myotherapy/PT
• Stretching: stretch and spray
• Massage/ pressure/backknobber
• Trigger point injection
Trigger point injection

- Know anatomy
- Risk factors: anticoag., bleeding, syncope pneumothorax, nerve block, post inj. soreness
- Lidocaine 0.5% or 1%
- No steroids
- Range of needle sizes: 30 gauge ½ inch to spinal 22/ 23/ 2.5
- 25g 1-1.5 inch most common
- Take a course
Trigger Point Injection

Figure 3.15. Cross-sectional schematic drawing of flat palpation to localize and hold the trigger point (dark red spot) for injection. A and B, use of alternating pressure between two fingers to confirm the location of the palpable nodule of the trigger point. C, positioning of the trigger point half way between the fingers to keep it from sliding to one side during the injection.
Travell and Simons
Trigger Point Manual

Simplifying and understanding how to use the “Red Bible”