Clinical Reasoning
Integrating Trigger-Point Dry Needling within an Evidence-Based Practice Framework

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Disclosure
The Speakers for this session do not receive any direct financial benefit from dry needling products but do teach continuing education seminars in dry needling.

Dry Needling
Background Evidence

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Fellow, American Academy of Orthopaedic Manual Physical Therapists

PAIN
31% of adults in USA report chronic pain

PAIN
#1 cause of adult disability in the US

Medication Generation
Seniors misusing prescription drugs
June 10, 2014

MORE SENIORS ON NARCOTIC, ANTI-ANXIETY DRUGS
Prescriptions for narcotic painkillers and anti-anxiety medications have risen sharply under Medicare. And doctors are putting their elderly patients on them for longer periods of time.

Muscles Can Hurt!

A trigger point is a hyperirritable spot within a taut band of a skeletal muscle that is painful on compression, stretch, overload or contraction of the tissue which usually responds with a referred pain that is perceived distant from the spot.

Muscles Can Be Unpleasant

In contrast to cutaneous pain, which is localized with great accuracy, muscle pain is difficult to localize and is often referred to regions remote from the muscle lesion. – Mense, 1994

- Active Trigger Point- those in which local and referred pain reproduce the symptoms by the patient and the pain is recognized as a usual pain.
- Latent Trigger Point- those in which local and referred pain did not reproduce any pain symptom familiar or usual for the subject.

Both provoke motor dysfunctions such as weakness, inhibition, irritability, and altered motor recruitment.
What about the reliability and clinical utility of trigger point identification?

Reliability estimates were generally higher for:
- Pain reproduction (Kappa 0.57-1.00)
- Tenderness (Kappa 0.22-1.0)

Reliability estimates were generally lower for:
- Taut band (Kappa −0.08-0.75)
- Local twitch response (Kappa −0.05-0.57).

The reliability of trigger point diagnosis needs to be further investigated with high quality studies that use current diagnostic criteria in clinically relevant patients.

What About Validity?

Topographical mapping and mechanical pain sensitivity of myofascial trigger points in the infraspinatus muscle

The locations of MTrPs identified with dry needling correspond well to Pressure Pain Threshold (PPT) topographical mapping, suggesting that dry needling and PPT mapping are sensitive techniques in the identification of MTrPs.

Objectives

- Discuss the level of evidence supporting DN for certain pain conditions
- Describe DN research in context with pain sciences and the early literature on clinical outcomes

Effectiveness

Are there conditions where DN provides benefit?

One group was injected with 1% novocaine, another with normal saline solution, and a third received the insertion of the hypodermic with no substance injected.

The novocaine group received the best outcome and the needle alone came in a close second which was described as a “startling” result.
The earliest mention of dry needling in The Lancet reporting on an investigation of 25 cases of low back pain with no evidence of organic disease.

Refers to attempts to eliminate pain by injection into the tender points. It mentions that relief could be obtained not only from the injection of procaine but also by injecting saline and "even dry needling."

Acupuncture and dry needling in the management of myofascial trigger point pain: A systematic review and meta-analysis of randomized controlled trials

There is limited evidence, deriving from one study that deep needling directly into myofascial trigger points has an overall treatment effect when compared with standardized care.

Effectiveness of acupuncture/dry needling for myofascial trigger point pain

There is limited evidence that dry needling has an overall treatment effect when compared with standard care and is superior to placebo.

Plantar Heel Pain

Results

- 3 quasi-experimental trials included
- All found reduction in pain

Conclusions

- There is limited evidence for the effectiveness of dry needling and/or injections of MTrPs associated with plantar heel pain.
- The poor quality & heterogeneous nature of the included studies precludes definitive conclusions being made.
Knee Pain

Conclusion - The results suggest that trigger point acupuncture therapy may be more effective for Osteoarthritis of the knee in some elderly patients than standard acupuncture therapy.

Myofascial Pain Syndromes

The effect of dry needling in the treatment of myofascial pain syndrome: a randomized double-blind placebo-controlled trial

- Single-blinded, randomized controlled trial
- Subjects: 40 subjects, between the ages of 63 and 90 with myofascial pain syndrome of the upper trapezius muscle.
- Interventions:
  - DRY Group treated with dry needling of all the TrPs.
  - IMS Group received the same plus additional paraspinal needling at C3-C5 multifidus.

The results of the placebo-controlled trials on treatment of knee pain.
The present study shows that the dry needling treatment is effective in relieving the pain and in improving the quality of life of patients with MPS.

- **Neck Pain**

  - **Baseline**
  - **1st Session**
  - **6th Session**

- **Shoulder Pain**

  - **DiLorenzo J Musculoskel Pain, 2004 (RCT n=101)**
    - That study reported a significant short-term reduction in post-stroke shoulder pain in patients who received MTrP needling plus standard rehabilitation compared with those who received standard rehabilitation alone (p < 0.001).

  - **Hidalgo-Lozano Exp Brain Res 2010**
    - TrPs in the levator scapulae, supraspinatus, infraspinatus, subscapularis, pectoralis major, and biceps brachii.
    - Increased Pain Pressure Thresholds.
    - Removed pain associated TMs in symptomatic shoulders.

  - **Hsieh Am J Phys Med Rehabil 2007**
    - Within subject within session design unilateral shoulder pain.
    - TDI to infraspinatus.
    - Side that received TDI had increased shoulder IR, ROM, increased PPT, decreased pain.

  - **Johansson Fam Pract 2011**
    - Shoulder pain.
    - Compared corticosteroid with acupuncture.
    - Both groups had significant improvement in pain and function but not between.

Evidence for the use of dry needling and physiotherapy in the management of cervicogenic or tension-type headaches: A systematic review

Cephalalgia 2014, Vol. 34(12) 994–1003

The two RCTs investigating the effect of dry needling on chronic tension-type headache reported 31% and 65% reductions in headache symptoms following a single intervention and 4-weekly interventions respectively.

Conclusions: The literature suggests that while there is insufficient evidence to strongly advocate for the use of dry needling, it may be a useful addition to conventional physiotherapy in headache management.
To compare the effects of trigger point dry needling (TrP-DN) and trigger point (TrP) manual therapy on pain, function, pressure pain sensitivity, and cervical range of motion in subjects with chronic mechanical neck pain.

Conclusions

• The results of this clinical trial suggest that 2 sessions of TrP-DN and TrP manual therapy resulted in similar outcomes in terms of pain, disability and cervical range of motion.

• Those in the TrP-DN group experienced greater improvements in PPT over the cervical spine.

• Future trials are needed to examine the effects of TrP-DN and TrP manual therapy at long-term follow-up periods.

Summary Effectiveness

Are there conditions where DN provides benefit?

• Weak Evidence of effectiveness (RCT, SR) for
  – Chronic LBP
  – Heel Pain
  – Osteoarthritis Knee Pain
  – Myofascial Pain in Upper Back & Elderly
  – Neck Pain
  – Headaches
  – Shoulder Pain in Stroke

• Emerging studies (case reports, case series) suggesting possible benefits for
  – Lateral Epicondylalgia
  – Shoulder Pain

What About Risks?

Almost 20% of treatments with TDN by the physiotherapists in this study resulted in a mild adverse event. Common adverse events include bruising, bleeding, and pain.

No significant adverse events occurred and the estimated risk of significant adverse event was <0.04%.

In the study, 39 physiotherapists participated and 1463 (19.2%) mild adverse events were reported in 7629 treatments with TDN.
Risk Perspective

<table>
<thead>
<tr>
<th>Event</th>
<th>Risk</th>
<th>Cases</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumothorax</td>
<td>0.001%</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Sepsis Infection</td>
<td>0.001%</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Nerve Injury</td>
<td>0.014%</td>
<td>31</td>
<td>18</td>
</tr>
</tbody>
</table>

- Risk of vertebral artery dissection with chiropractic cervical manipulation $= 0.002$ (1 in 200,000) [Stroke, 2001]
- Risk of sudden death from exercise $= 0.001$ (1 in 100,000) [Thompson, 1996]

Dry Needling Association Switzerland
Anonymous Incident Report

http://www.dryneedling.ch/de/anonymous-incident-report.html

Dry needling is a treatment modality that is minimally invasive, cheap, easy to learn with appropriate training, and carries a low risk.

Tim’s Opinion

- In conditions with a solid evidence base start with the evidence if consistent with patient values
- Examination should include palpation of the muscle system
- When TPs are noted TDN is appropriate for treatment if consistent with patient values
- Combining TDN with usual or best care
- A clear rationale and expected response should support your use
- The history of PT is wrought with bandwagons...If you think it is “the magic bullet” then...

Questions and Discussion
Dry Needling
Clinical Reasoning and Case Examples

Andrew Bennett, PT, DPT, OCS, FAAOMPT

Crossing the gap: knowing and DOING

Example Framework for Clinical Reasoning

Effectiveness vs. Efficiency
Communication

“It is far more important to know what person the disease has than what disease the person has.”

― Hippocrates

Patient Profile

- **Age / Sex:** 57 year old male
- **Occupation:** Sales with frequent cross country and international travel
- **Primary Complaints:** Right anterior shoulder pain, 2 months prior to PT visit
- **Secondary Complaints:** Right sided shoulder blade and neck pain, 1 month prior to PT visit
- **Functional limitations:** Effecting travel, ability to lift weights / exercise, household activity especially yard work
- **Outcome Measures:** QuickDASH score = 45

Body Chart

Symptom Behavior

- **P1:** (anterior shoulder pain) Best 0/10, Worse 8/10, Current 0/10. 
  "deep ache" but can be "sharp" when it gets to an 8/10; intermittent/variable 
  AGG: overhead activity, reaching behind the back both immediate onset. Also 
  aggravated with prolonged (15 minutes) of carrying objects(suitcase/briefcase) 
  EASE: out of position immediately.
- **P2:** (posterior shoulder blade pain) Best 0/10, worse 6/10, current 0/10; 
  "deep ache and sore" intermittent and variable; 
  AGG: carrying of objects (> 15 minutes) and sitting at desk for more than 1 hour at a time typing, sometimes with driving more than 1 hour. 
  EASE: cease carrying objects (about 5 minutes), getting out of seated position 
  (about 2 minutes)
- **P3:** (right side neck pain) Best 0/10, worse 3/10, current 0/10; 
  "deep ache" intermittent and variable; 
  AGG: with increased P1 and P2 or with prolonged sitting (> 1 hour). 
  EASE: out of position and moving neck

Patient Interview

November 2013: Insidious onset of right shoulder pain
- Began noticing during international travel
- Progressively worse first month with development of secondary painful areas of right posterior shoulder blade and neck pain 
  about a month after the shoulder pain started, not much change since 
- Previous tx: self stretches found on internet, OTC Ibuprofen 
  without benefit, has ceased OTC medication
- PMHx/PSHx unremarkable

Examination Findings

**Cervical Assessment**

<table>
<thead>
<tr>
<th>Movement</th>
<th>Flexion</th>
<th>Extension</th>
<th>Sidebending</th>
<th>Rotation Right</th>
<th>Rotation Left</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right</td>
<td>40 deg</td>
<td>40 deg</td>
<td>20 deg</td>
<td>70 deg</td>
<td>70 deg</td>
</tr>
<tr>
<td></td>
<td>P3 = 2/10, no increase with OP</td>
<td>P3 = 2/10, no increase with OP</td>
<td>P3 = 2/10, no increase with OP</td>
<td>no pain with OP</td>
<td>no increase with OP</td>
</tr>
</tbody>
</table>

**Thoracic and Rib Assessment**

<table>
<thead>
<tr>
<th>Movement</th>
<th>1st Rib</th>
<th>Thoracic flexion, extension, rotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left</td>
<td>FL/CRLF Right</td>
<td>P3 = 2/10/6</td>
</tr>
</tbody>
</table>

Hypomobile no pain
Examination Findings

<table>
<thead>
<tr>
<th>Motion</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexion</td>
<td>120 deg (P1 = 7/10)</td>
</tr>
<tr>
<td>Abduction</td>
<td>100 deg (P1 = 7/10)</td>
</tr>
<tr>
<td>Internal Rotation with Extension (behind the back)</td>
<td>Ipsilateral iliac crest (P1 and P2 = 6/10)</td>
</tr>
<tr>
<td>External Rotation with Flexion (behind the head)</td>
<td>C7, (P1 and P2 = 6/10)</td>
</tr>
<tr>
<td>GHJ/AC/SC mobility</td>
<td>Minor “stiffness” no pain</td>
</tr>
</tbody>
</table>

Shoulder “special tests”

<table>
<thead>
<tr>
<th>Test</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Rotation Muscle Test</td>
<td>+, 7/10 P1, immediate ease</td>
</tr>
<tr>
<td>Hawkins Kennedy</td>
<td>+, 7/10 P1, 5/10 P2 both immediate ease</td>
</tr>
<tr>
<td>Painful arc</td>
<td>–</td>
</tr>
<tr>
<td>Neers</td>
<td>+, 8/10 P1, 30 seconds to ease</td>
</tr>
</tbody>
</table>

Shoulder Diagnosis Lit Review

<table>
<thead>
<tr>
<th>Study</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michener et al, 2009</td>
<td>Shoulder pain secondary to subacromial impingement syndrome</td>
</tr>
<tr>
<td>Park et al, 2005</td>
<td>Mechanical neck pain consistent with treatment based classification of mobility</td>
</tr>
</tbody>
</table>

Hypotheses

- Shoulder pain secondary to subacromial impingement syndrome
- Mechanical neck pain consistent with treatment based classification of mobility

Shoulder Interventions Lit Review

- Kuhn J Shoulder Elbow Surg 2009
  - Systematic review: Exercise has statistically and clinically significant effects on pain reduction and improving function
- Kroemer J Rehabil Med 2009
  - Systematic review: PT led exercise equally effective as surgical approach (short and long term)
- Lombardi Arthritis Rheum 2008
  - Progressive resistive exercises more effective in reducing pain and improving function over a control group

Day 1 Interventions and In Session Response

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated Thoracic Thrust</td>
<td>Shoulder flexion to 140 deg (P1 = 5/10)</td>
</tr>
<tr>
<td>Seated Thoracic Extension (pain free ROM)</td>
<td>compared to 120 deg (P1 = 7/10)</td>
</tr>
</tbody>
</table>

Selected thoracic thrust: Met 3/5 factors for CPR (Mintken et al)

Moderate severity: Passed patient to pain control phase
Visit 2
Follow Up Visit Responses

• How did you feel immediately after your last session? “GREAT, my shoulder really seemed to move better immediately after the last session”
• How do you currently feel? “SORE, same as it was when I first started. The relief only lasted for the day”
• Show me your HEP? Performed well, recheck asterisk and some reduction in s/s with overhead reach
• How is reaching up in to a high cabinet? “No change”

Visit 2
First Follow Up Visit

<table>
<thead>
<tr>
<th>Asterisks</th>
<th>Visit 1-2 change?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Shoulder Flexion:</td>
</tr>
<tr>
<td></td>
<td>125 deg (P1=7/10; P2=6/10)</td>
</tr>
</tbody>
</table>

MINIMAL INTERSESSION CHANGE

<table>
<thead>
<tr>
<th>Measurement/Function</th>
<th>Active/Latent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infraspinatus</td>
<td>P3 and P2</td>
</tr>
<tr>
<td>Levator Scapula</td>
<td>P3</td>
</tr>
<tr>
<td>Upper Trapezius</td>
<td>P3 and P2</td>
</tr>
<tr>
<td>Anterior Deltoid</td>
<td>P3</td>
</tr>
<tr>
<td>Pectoralis Minor</td>
<td>P3</td>
</tr>
</tbody>
</table>

Dry Needling for Shoulder Pain Lit Review

- Hidalgo-Lozano Exp Brain Res 2010
  Trigger Points in the levator scapula, supraspinatus, infraspinatus, subscapularis, pectoralis major, and/innervation to sensory fibers of the shoulder.
  Within subject within session bilateral shoulder pain
  Test showed TDN had increased shoulder ROM, increased PPT, decreased pain
- Osborne Acupunct Med 2010
  Acupuncture
  Case series
  Within session improvements (ROM, strength, pain assessed)
- Johansson Fam Pract 2011
  Shoulder pain
  Compared to placebo with acupuncture
  Both groups had significant improvement pain and function but not between

Clinical Reasoning
• Response from previous session(s) / interventions

Evidence Based Practice
• Literature
• Emerging evidence
• Patient Values
• Language use in dry needling
• Needles choose
• Clinician Experience
• Palpation

What drives dry needling decisions?

Frequency of Trigger Points
Active and Latent
(Bron et al, 2011)

High number of trigger points for patients with shoulder pain

Frequency of Trigger Points Per Muscle
Active and Latent
(Bron et al, 2011)

Infraspinatus, Upper Trap, Middle Deltoid
High Frequency
(among others)
Muscles Selected For Dry Needling

<table>
<thead>
<tr>
<th>Muscle</th>
<th>Justification</th>
<th>Treated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infraspinatus</td>
<td>Palpation / evidence</td>
<td>Yes (P1 and P2)</td>
</tr>
<tr>
<td>Upper Trapezius</td>
<td>Palpation / evidence</td>
<td>Yes (P3)</td>
</tr>
<tr>
<td>Anterior Deltoid</td>
<td>Palpation</td>
<td>No</td>
</tr>
<tr>
<td>Levator Scapula</td>
<td>Palpation</td>
<td>No</td>
</tr>
<tr>
<td>Pectoralis Minor</td>
<td>Palpation</td>
<td>No</td>
</tr>
</tbody>
</table>

- Infraspinatus and Upper Trapezius selected due to palpation of active trigger points
- High frequency associated with these muscles
- Needle 2 muscles first follow up secondary to irritability and initial exposure of needling

Trigger Point

**INFRASPINATUS**

**TREATMENT VIDEOS**

(Infraspinatus)

**TREATMENT VIDEOS**

(Upper Trapezius)

Summary of Visit 2

Selected Interventions and In Session Response

<table>
<thead>
<tr>
<th>TREATMENTS</th>
<th>RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MANUAL THERAPY INTERVENTIONS</strong></td>
<td></td>
</tr>
<tr>
<td>Seated Thoracic Thrust</td>
<td>130 deg shoulder flexion (P1 = 5/10; P2 = 4/10)</td>
</tr>
<tr>
<td>Seated C7 Junction Thrust</td>
<td>No change from thoracic thrust gains</td>
</tr>
<tr>
<td>Glenohumeral AP Gildes</td>
<td>130 deg shoulder flexion (P1 = 6/10; P2 = 6/10)</td>
</tr>
<tr>
<td><strong>DRY NEEDLING INTERVENTIONS</strong></td>
<td></td>
</tr>
<tr>
<td>Infraspinatus</td>
<td>130 deg shoulder flexion (P1 = 4/10; P2 = 2/10)</td>
</tr>
<tr>
<td>Upper Trapezius</td>
<td>P1 or P2: No change from infraspinatus</td>
</tr>
<tr>
<td></td>
<td>P3: 2/10 ti 0/10 with cervical rotation (no change ROM)</td>
</tr>
</tbody>
</table>
Visit 3 (2nd follow up)

- How did you feel immediately after your last session?
  “SORE; however, my shoulder really seemed to move better that night with less pain”

- How do you currently feel?
  “BETTER, but still painful at to reach into high cabinet or behind the back to get my wallet.”

- Show me your HEP?
  Performed well, recheck asterisk and less pain and improved ROM

Visit 3

<table>
<thead>
<tr>
<th>Asterisk</th>
<th>Visit 2 - 3 change?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoulder Flexion:</td>
<td>Yes, 10 degrees and reduction in pain &gt; MDC</td>
</tr>
<tr>
<td>Cervical Rotation left:</td>
<td>Minimal</td>
</tr>
</tbody>
</table>

Muscles Selected For Dry Needling

<table>
<thead>
<tr>
<th>Muscle</th>
<th>Justification</th>
<th>Treated?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infraspinatus</td>
<td>Palpation / evidence</td>
<td>Yes (P1 and P2)</td>
</tr>
<tr>
<td>Upper Trapezius</td>
<td>Palpation / evidence</td>
<td>Yes (P3)</td>
</tr>
<tr>
<td>Anterior Deltoid</td>
<td>Palpation</td>
<td>No</td>
</tr>
<tr>
<td>Levator Scapula</td>
<td>Palpation / evidence</td>
<td>Yes (P2 and P3)</td>
</tr>
<tr>
<td>Pectoralis Minor</td>
<td>Palpation</td>
<td>Yes (P1)</td>
</tr>
<tr>
<td>Pectoralis Major</td>
<td>Palpation</td>
<td>No</td>
</tr>
</tbody>
</table>

- Infraspinatus and Upper Trapezius selected due to palpation of active trigger points AND response from first session
- Pectoralis Minor and Levator Scapula added due to reproduction of symptoms
- Added selected muscles also because of tolerance to first day needling

Visit 3 (2nd follow up) Selected Interventions and In Session Response

<table>
<thead>
<tr>
<th>TREATMENTS</th>
<th>RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANUAL THERAPY INTERVENTIONS</td>
<td></td>
</tr>
<tr>
<td>Scapulothoracic Throat and non-throat</td>
<td>Minimal change shoulder flexion</td>
</tr>
<tr>
<td>DRY NEEDLING INTERVENTIONS</td>
<td></td>
</tr>
<tr>
<td>Infraspinatus</td>
<td>Increased shoulder flexion and decreased pain</td>
</tr>
<tr>
<td>Upper Trapezius</td>
<td></td>
</tr>
<tr>
<td>Levator Scapula</td>
<td></td>
</tr>
<tr>
<td>Pectoralis Minor</td>
<td></td>
</tr>
</tbody>
</table>

QuickDASH Score: 26/100

Trigger Point PECTORALIS MINOR

TREATMENT VIDEOS (Pectoralis Minor)
Visit 4 (3rd follow up)

- How did you feel immediately after your last session?
  “A little sore from the needling, but overall much better. Able to reach behind back with minimal pain later that day and effects have lasted”
- How do you currently feel?
  “BETTER, my pain is much less, almost minimal except when I reach up really high or push it behind my back.”
- Show me your HEP?
  Self pin and stretch techniques performed well

Visit 4

<table>
<thead>
<tr>
<th>Muscle</th>
<th>Palpation</th>
<th>Treated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anterior Deltoid</td>
<td>Palpation</td>
<td>No (P1 reproduced but not as severe as the pectorals)</td>
</tr>
<tr>
<td>Pectoralis Minor</td>
<td>Palpation</td>
<td>Yes (P1, less than previous)</td>
</tr>
<tr>
<td>Pectoralis Major</td>
<td>Palpation</td>
<td>Yes (P1)</td>
</tr>
</tbody>
</table>

Muscles Selected For Dry Needling

- Infraspinatus not needled secondary to resolved trigger point
- Upper Trapezius and Levator Scapula not needled secondary to P3 latent trigger point only
- Pectoralis Minor needled due to reproduction of P1 symptoms
- Pectoralis Major needled due to reproduction of P1 symptoms

Visit 4 (3rd follow up) Selected Interventions and In Session Response

TREATMENTS

<table>
<thead>
<tr>
<th>MANUAL THERAPY INTERVENTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scapulothoracic Thrust and non thrust</td>
</tr>
<tr>
<td>Pin and Stretch and instrument assist soft tissue mobilization</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DRY NEEDLING INTERVENTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infraspinatus</td>
</tr>
<tr>
<td>Upper Trapezius</td>
</tr>
<tr>
<td>Levator Scapula</td>
</tr>
<tr>
<td>Deltoid</td>
</tr>
</tbody>
</table>
Trigger Point
PECTORALIS MAJOR

Dry Needling Technique
(Pectoralis Major)

Visit 5+
Treatment Summary

• Visit 5
  P1: 0/10 best, 1/10 worse; aggravated only when he pushed it to the extreme of flexion but very minimal // out of position immediately
  P2: 0/10 best and worse
  P3: 0/10 best and worse
  PROGRESSED TO Phase II: Intentional Strengthening
• Able to travel and work without symptoms
• QuickDASH: 4/100
• Seen for a total of 8 visits