(PBL) Tendinopathy: Tackling Troubled Tendons

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A past FMX presenter, Dr. Patel practices family medicine and sports medicine in Aurora and Yorkville, Illinois, and is medical director for Rush Copley Sports Medicine. His specialty topics include musculoskeletal imaging, concussions, stress fractures, osteoarthritis, joint examinations, pediatric overuse injuries, knee pain, tendonitis/tendonopathy, fractures, and exercise recommendations, as well as evidence-based medicine. He is a fellow of the American College of Sports Medicine. Since Dr. Patel also practices family medicine, he is able to deliver effective presentations to help family physicians address sports medicine and musculoskeletal complaints. He serves as chair for the 2019 AAFP Musculoskeletal and Sports Care course. Dr. Patel has found that staying current with medical advances and evidence-based medicine is the most challenging aspect of family medicine.
Learning Objectives

1. Practice applying new knowledge and skills gained from Tendinopathy sessions, through collaborative learning with peers and expert faculty.

2. Identify strategies that foster optimal management of tendinopathy within the context of professional practice.

3. Formulate an action plan to implement practice changes, aimed at improving patient care.

Associated Sessions

• Tendinopathy: Tackling Troubled Tendons
Polling question

Which case to start with?
A. Shoulder pain
B. Elbow pain
C. Lateral hip pain

Shoulder pain
Chief Complaint

• Shoulder pain

History of Present Illness

• A 55 year old female
• 2-3 months of pain with use of shoulder
• No trauma or swelling
Polling question

• What other history questions do you want to ask?

History of Present Illness- Con’t

• A 55 year old female
• 2-3 months of pain with use of shoulder
• No trauma or swelling
• Pain with overhead, reaching
• Pain with rolling onto that shoulder
Polling question

• What examination tests would you perform (tenderness, strength testing, special tests)?

Rotator cuff tests

• + painful arc test best for rotator cuff (SORT: B)
• normal painful arc test helps rule out rotator cuff (SORT: B)
• + drop arm test possibly helpful (SORT: B)

Rotator cuff tests

• Best tests of full thickness tears (SORT: B):
• + external rotation lag for infraspinatus
• + internal rotation lag for subscapularis


Physical Examination

• Our case:
• + impingement, painful arc
• Weakness of subscap and supraspinatus
• Mild scapular tilt
Polling question

Differential diagnosis?
A. Rotator cuff tear
B. Rotator cuff impingement
C. Rotator cuff tendonosis
D. Rotator cuff tendonitis
E. Labrum tear

Polling question

What imaging would you perform?
A. None
B. Xray
C. MRI with IV contrast
D. MRI without IV contrast
E. MRI arthrogram
Polling question

What percent of asymptomatic patients have a rotator cuff tear on MRI?

A. 10 %  
B. 25 %  
C. 40 %  
D. 60 %

Asymptomatic Abnormal MRI

- 40% asymptomatic > 50 y/o have full RTC tear $^{1,2}$
- 60% asymptomatic > 60 y/o have partial or full RTC tear $^{1,3}$
- Another study: 26-56% asymptomatic tears age: 63.1 ± 9 $^4$
- Overhead athletes 40% with partial or full tear in dominant shoulder $^5$
- 55-72% labrum tears in 45-60 y/o $^6$
- 52% Occ health patients with worse pathology on asymptomatic side $^7$

Polling question

Treatment options/plan?
A. Physical therapy
B. NsAIDS
C. Corticosteroid injection
D. Corticosteroid injection + Physical therapy

Plan

• Activity modification (SORT: C)
• P.T. (scapular and cuff) (SORT: B)
• Analgesics (SORT: C)

Plan

- Steroid injection only for severe, refractory, temporary benefit (SORT: B)
- Imaging if failed above for 6-8 wks and considering surgery (SORT: B)

Subacromial Impingement/Rotator cuff

- Corticosteroid: minimal benefit and = placebo, <4 wks
- BJSM Sys. Rev.: Steroid vs anesthetic limited benefit <8wks
- Injection + PT > PT at 6 wks, not after
- Ketorolac > triamcinolone
- Cochrane: Injection= ultrasound =acupuncture =NSAID
- Ultrasound guided=landmark injection


Rotator Cuff- injection

- Minimal limited pain benefit
- May accelerate tendon degeneration
- “wide use may be attributable to habit, underappreciation of the placebo effect, incentive to satisfy rather than discuss a patient’s drive toward physical intervention, or for remuneration, rather than their utility.”

Chief Complaint

- Elbow pain

History of Present Illness

- A 35 year old male with use of elbow. Lateral side. No trauma or swelling. He has full range of motion
Polling question

• What examination tests would you perform (tenderness, strength testing, special tests)?

Physical Examination

• Tender lateral epicondyle
• Preserved strength of elbow.
• Weakness of wrist extensors, supinators
• 3rd Digit extension test +
Polling question
Laboratory/Radiology

Indications for imaging is?

Polling question-Treatment options

• What treatment options would you advise?
Treatment

- Analgesics
- Avoid gripping, twisting or pronated lifting
- Ok to lift with open palm

Lateral Epicondylitis

- Limited benefit in pain or function (SORT: A):
  - Bracing
  - Physical Therapy
  - Eccentric helps but not superior to other treatment (SORT: B)
  - ESWT


Eccentric exercise

Polling question

• Indication for corticosteroid injections?
Lateral Epicondylitis - Steroid Injection

- Without injection resolves in 6-24 months
- Corticosteroid 4-6 wks benefit
  - At 1 yr, no difference
- Recurrence rate: injection 35-50% vs PT 8-29%
- Muscle energy = injection at 1 yr


Lateral Epicondylitis - Injection

- Corticosteroid injection: standard = peppered = via iontophoresis (SORT: B)
- Corticosteroid injection NOT recommended (SORT: A)
- Botulinum toxin A injection, prolotherapy, PRP, or autologous blood some pain benefit (SORT: B)
- Hyaluronate injection, prolotherapy, autologous blood need further study (SORT: B)

Lateral Hip Pain

Chief Complaint

• Lateral hip pain
History of Present Illness

• A 55 year old female with lateral pain
• Increased with position changes
• No trauma or swelling.
• Pain with rolling onto that hip

Polling question

• What other history questions do you want to ask?
Polling question

Differential diagnosis?
A. Trochanteric bursitis
B. Gluteal tendinopathy
C. Iliotibial band tendinopathy
D. Hip osteoarthritis

Greater Trochanteric pain Syndrome (GTPS)

- Trochanteric bursitis (acute, rare)
- Gluteus medius tendinopathy
- Gluteus minimus tendi
Polling question

• What examination tests would you perform (tenderness, strength testing, special tests)?

GTPS Exam- Piriformis palpation
GTPS Exam-special tests

<table>
<thead>
<tr>
<th>Test</th>
<th>Sensitivity</th>
<th>Specificity</th>
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<tbody>
<tr>
<td>FABER</td>
<td>82.9%</td>
<td>90%</td>
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<tr>
<td>Single leg stance 30 sec</td>
<td>100%</td>
<td>93%</td>
</tr>
<tr>
<td>Trendelenburg</td>
<td>72.7%</td>
<td>76.9%</td>
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<tr>
<td>Isometric hip abduction</td>
<td>80%</td>
<td>71%</td>
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<tr>
<td>Hip abduction 90deg hip flexion</td>
<td>88%</td>
<td>97.3%</td>
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<tr>
<td>Ober</td>
<td>23%</td>
<td>95%</td>
</tr>
</tbody>
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FABER test

- Flexion of hip,
- Abduction of hip
- External Rotation
- Push the opposite ASIS and same knee posteriorly
- Pain in groin=hip pathology
- Pain in Back=SI joint
Single leg stance

Modified Trendelenburg Test

- Stand, Hands on hips, feet together
- Lift 1 leg
- Watch for hip/pelvis drop/tilt
- Weakness of contralateral hip abductors
hip abduction

Isometric

W/ 90 deg hip flexion

Ober’s Test

• Patient lateral recumbent position
• Place 1 hand on hip to prevent trunk rotation
• Hold patient’s ankle & extend thigh
• At maximal extension, allow knee to adduct toward table
• Compare to other leg
• + if significant tightness (knee suspend above the table)
GTPS treatment

- Eliminate/reduced Iliotibial band/ Gluteal tension (SORT: C)
- Analgesics (SORT: C)
- Stretching, strengthening (SORT: B)
- Fluoroscopic guided injection= landmark (SORT: B)
  - Short term (<3 month) benefit


Questions
Thanks!

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