CASE REVIEW: A CLINICIAN’S PERSPECTIVE

Management of a Hip Derangement presenting with a positive Flexion Adduction, Internal Rotation (FADIR) Impingement Test
Andrei Altavas, PT, Cert. MDT

Hip joint pain is a common symptom that frequently causes patients to seek consultation in physical therapy. A variety of diagnostic labels for hip joint pain have been used by primary care physicians, such as osteoarthritis, trochanteric bursitis, labral tear, hip strain and hip pain. The Orthopedic Section of the American Physical Therapy Association established Nonarthritis Hip Joint Pain Clinical Practice Guidelines (CPG) linked to the International Classification of Functioning, Disability and Health. The purpose of these clinical guidelines is to describe evidence-based physical therapy practice, including diagnosis, prognosis, intervention, and assessment of outcome, for musculoskeletal disorders commonly managed by orthopedic physical therapists. Diagnoses of nonarthritic hip joint conditions are made by clinicians based on a combination of imaging and clinical findings, although there is no consensus on the diagnostic criteria to rule in or rule out a specific condition.

This is a case of a 56-year-old female patient referred by her primary care physician for hip pain. The patient presented with a sudden onset of anterior hip and groin pain after a spinning class (cycling). She stated her symptoms had been present for three months and remained unchanged. The patient’s hip pain was intermittent and was worsened when she crossed her leg, performed a squat, and when sleeping at night without a pillow between her legs. Her lumbar spine was unremarkable during assessment. Examination using repeated movements of the hip was worsened in flexion, internal rotation and adduction. This finding is described in the CPG as pain reproduced with the Flexion-Adduction-Internal Rotation (FADIR) Impingement Test which is suggested to be indicative of an intra-articular injury when correlated with imaging findings. The FADIR test is used to assess a painful impingement between the femoral neck and acetabulum in the anterior superior region. It has also been used to assess for specific pathology of the acetabular labrum, and diagnosis of femoroacetabular impingement. The FADIR test was studied for its diagnostic utility and has a specificity of 0.10 and sensitivity of 0.78.

A directional preference to hip extension was established on the first day, as this slightly reduced the patient’s symptoms upon retesting her chief complaint. She was able to cross her leg with less pain but groin pain during squatting did not change. The patient returned for her second visit two days later reporting that crossing her leg was now pain free but she continued to have pain when sleeping at night. Likewise, squatting reproduced her groin pain. Repeated hip internal rotation was performed with the patient’s leg on a 4-inch high foot stool. The patient’s anterior hip and groin pain was reproduced but was decreased with repetition. Retesting her ability to squat was performed with less pain.

The patient was seen for her third visit a week later and reported that her symptoms were 90% better and her hip pain was abolished when she crossed her leg and during squatting. She also reported her pain at night was significantly reduced. Repeated movements of the hip were retested and were now full and pain free during flexion, adduction and internal rotation. However, a combined motion utilizing the FADIR Impingement Test and an inner quadrant scour test was painful and was made worse with repetition. Force alternatives were explored accounting for the patient’s symptom response by adding more flexion to repeated internal rotation. The movement was performed with the leg on a chair. She was instructed to add overpressure to repeated internal rotation.

At the fourth visit, the patient reported full resolution of her symptoms during squatting and at night. She was hesitant to return to bicycle riding and spinning class due to fear that her hip pain would return. The FADIR Impingement Test and a hip scour test were performed and did not produce pain. The patient was instructed to continue her reductive exercises at home as needed.

This case highlights the importance of Mechanical Diagnosis and Therapy (MDT) in the management of nonarthritic hip joint pain. Therapeutic interventions such as joint mobilization, manipulation, neuromuscular re-education and stretching are recommended by the Clinical Practice Guidelines when patients demonstrate physical impairment measures consistent with a patho-anatomical diagnosis. Future recommendations using directional preference exercise and management utilizing the patient-response model are merited.
REFERENCES:

THE MCKENZIE INSTITUTE
LOWER EXTREMITIES ASSESSMENT

Date
Name  Mrs. Hip  Sex M
Address
Telephone
Date of Birth  Age 56
Referral: GP / Orth / Self / Other  Family MD
Work: Mechanical stresses  Office administration  6-8 hours / day
Leisure: Mechanical stresses  Cycling, spinning class
Functional disability from present episode

Functional disability score
VAS Score (0-10)  5/10

HISTORY
Present symptoms  R hip anterior / groin
Present since  3 months  Improving / Unchanging / Worsening
Commenced as a result of  cycling, spinning class  Or No Apparent Reason
Symptoms at onset  anterior hip / groin  Paraesthesia: Yes / No
Spinal history  back pain 1 yr. ago; resolved
Constant symptoms:  intermittent Symptoms:  hip / groin

Worse
bending  sitting / rising / first few steps  standing  walking  stairs  squatting / kneeling
am / as the day progresses / pm  when still / on the move  Sleeping: prone / sup / side R / L
Other uses a pillow between legs when sleeping; crossing leg during sitting

Better
bending  sitting  standing  walking  stairs  squatting / kneeling
am / as the day progresses / pm  when still / on the move  Sleeping: prone / sup / side R / L
other no pain with all other activities or positions except above.

Continued use makes the pain:  Better  Worse  No Effect  Disturbed night  Yes / No
Pain at rest  Yes / No  excessive
Other Questions:  at night when not using a pillow between legs  Swelling  Clicking / Locking
Site:  Back / Hip / Knee / Ankle / Foot  Giving Way / Falling  none

Previous episodes  none
Previous treatments  none

General health  Good / Fair / Poor
Medications:  nil / NSAIDS / Analg / Steroids / Anticoag / Other
Imaging:  Yes / No
Recent or major surgery:  Yes / No
Accidents:  Yes / No  Unexplained weight loss:  Yes / No

Summary  Acute / Sub-acute / Chronic
Trauma / Insidious Onset
Other:  Sudden onset after spinning class

©McKenzie Institute International 2014
EXAMINATION

POSTURE
Sitting: Good / Fair / Poor
Correction of Posture: Better / Worse / No Effect / NA
Standing: Good / Fair / Poor
Other observations: ____________________________

NEUROLOGICAL: NA / Motor / Sensory / Reflexes / Dural

BASELINES (pain or functional activity): pain when crossing leg, squatting/crouching

EXTREMITIES Hip / Knee / Ankle / Foot

<table>
<thead>
<tr>
<th>MOVEMENT LOSS</th>
<th>Maj</th>
<th>Mod</th>
<th>Min</th>
<th>Nil</th>
<th>Pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexion</td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Extension</td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Dorsi Flexion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Plantar Flexion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MOVEMENT LOSS</th>
<th>Maj</th>
<th>Mod</th>
<th>Min</th>
<th>Nil</th>
<th>Pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adduction / Inversion</td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Abduction / Eversion</td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Internal Rotation</td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>External Rotation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
</tbody>
</table>

Passive Movement (+/- over pressure) (note symptoms and range):
Flexion + Over P
Flexion - Adduction - Internal Rotation + Over P

Resisted Test Response (pain): Unremarkable

Other Tests: FADIR impingement test painful

SPINE
Movement Loss
Effect of repeated movements
Effect of static positioning
Spine testing: Not relevant / Relevant / Secondary problem

Baseline Symptoms

<table>
<thead>
<tr>
<th>Repeated Tests</th>
<th>Symptom Response</th>
<th>Mechanical Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active/Passive movement, resisted test, functional test</td>
<td>During - Produce, Abolish, Increase, Decrease, NE</td>
<td>After - Better, Worse, NB, NW, NE</td>
</tr>
<tr>
<td>Flexion</td>
<td>Produced, Increase</td>
<td>Worse</td>
</tr>
<tr>
<td>Adduction</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Internal Rotation</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Extension</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Effect of static positioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Rotation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Day 2

PROVISIONAL CLASSIFICATION

Extremities Spine

Dysfunction - Articular
Gerarment - Articular
Other

PRINCIPLE OF MANAGEMENT
Education
Equipment Provided
Exercise and Dosage
Treatment Goals
1. Return to cycling and spinning class
2. Abolish pain at night when crossing leg

©McKenzie institute international 2014