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Exploring the role of microinstability of the hip: an atypical presentation of femoroacetabular impingement (FAI) and labral tear in a collegiate endurance athlete: a case report

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Objective: *This case is designed to aid practitioners in understanding the potential role of hip microinstability as a possible underlying source of hip pain and dysfunction.*

Case presentation: *A 25-year-old female collegiate cross-country athlete presented with a 2-year history of progressive left hip and groin pain. Extensive clinical examination and imaging confirmed the presence of cam-type femoroacetabular impingement, a labral tear and gluteal tendinopathy. Despite multiple intra and extra-articular pathologies, understanding the role of hip instability and implementing a rehabilitation exercise program focused on hip joint centration alleviated the patient's symptoms at rest and during activity.*

Summary: *A robust history and physical exam of the hip is essential with the addition of imaging when*

Objectif : *Ce cas est conçu pour aider les praticiens à comprendre le rôle potentiel de la microinstabilité de la hanche comme source sous-jacente possible de douleur et de dysfonctionnement de la hanche.*

Exposé de cas : *Une athlète de cross-country collégiale âgée de 25 ans présente des antécédents médicaux de deux ans d'une douleur progressive située au niveau de la hanche gauche et de l'aine. Un examen et une imagerie cliniques approfondis ont confirmé la présence d'un conflit fémoroacétabulaire de type came, d'une déchirure du labrum et d'une tendinopathie glutéale. Malgré de multiples pathologies intra et extra-articulaires, la compréhension du rôle de l'instabilité de la hanche et la mise en œuvre d'un programme d'exercices de réadaptation axé sur l'articulation de la hanche ont atténué les symptômes du patient au repos et au cours de l'activité.*

Résumé : *Une anamnèse robuste et un examen physique de la hanche sont essentiels avec l'ajout de*

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testing criteria is positive. Clinicians should be aware of the role hip microinstability plays and its clinical implications when in the presence of other contributing factors such as generalized joint laxity, and/or intra-articular pathology.

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KEY WORDS: chiropractic, femoroacetabular impingement, FAI, hip, labral tear, microinstability

l'imagerie lorsque les critères d'examen sont positifs. Les cliniciens devraient être conscients du rôle que joue la micro-instabilité de la hanche et de ses implications cliniques lorsqu'elle est en présence d'autres facteurs contributifs tels que l'hyperlaxité généralisée et la pathologie intra-articulaire.

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MOTS CLÉS : chiropratique, conflit fémoro-acétabulaire, CFA, hanche, déchirure du labrum, micro-instabilité.

Introduction

The hip is a complex region owing to the fact of several overlapping intra and extraarticular anatomical structures, and several nearby musculoskeletal regions which may refer to and mimic hip pathology.[1-8] Some of the structures that can manifest clinically as hip pain either may not be well recognized as a source of hip pain, or perhaps the assessment of such structures is not sufficient to make a correct diagnosis. This may be owing to the lack of validated tests and deficiencies in the literature on this specific area.[1-7] Hip microinstability, a functionally progressive condition which typically presents alongside multiple hip pathologies can also play a role, particularly in the young athletic population. Although both traumatic (macro) hip instability and microinstability have been described to cause symptomatic supraphysiological translation of the femoral head in the acetabulum, microinstability is not as objectively obvious and typically presents after a long history of repetitive axial or rotational loading of the hip joint resulting in progressive development of symptoms in the absence of a clear underlying etiology.[9-12] For these reasons, diagnosing hip pathology is a diagnostic challenge.[1-3,7] The clinical utility of physical examination tests for diagnosing hip pathology have been criticized, which is one of the primary reasons why radiographic and special imaging modalities are used as a primary means to diagnose.[7]

The purpose of this case study is to create a diagnostic tool for clinicians by highlighting an endurance athlete displaying a unique presentation of hip pain. This case will systematically facilitate a complete list of hip differential diagnoses and recommended examination and/or imaging tests to help guide manual practitioners in the assessment and diagnosis of hip pain/pathology.

Case presentation

A 25-year-old female runner presented to a sport specialist chiropractor with a two-year history of progressive left hip and groin pain. She was a former collegiate cross-country athlete and this was her first year removed from her varsity career. She reported her pain began in the last year of her competitive running season and came on approximately 45 minutes into her training runs and would progressively get worse. Her left hip pain was described as a heavy fatigue feeling which began in the left gluteal region and would radiate into the posterolateral and anterolateral thigh with distance. While at university, she was overseen by her assigned athletic therapist who had treated her injury as a hip flexor and gluteal strain. She had also saw a medical doctor during her last year of competition who also believed her hip pain was muscular in origin and suggested she continue with physical therapy. After leaving university, she briefly competed in both half and full marathons but had to give up running in the last year due to the onset of sharp left hip and groin pain during her runs. Unlike the previous pain, her symptoms would initially present around the 10-km mark into her runs and got worse with increasing distance to the point where she had to stop her training and running sessions. The pain this time became sharper into the groin area during the runs and would present as a deep-seated dull pain in the groin and posterior hip following activity such as

running. There were no episodes of radiating leg pain or give-way sensations reported during her initial presentation of pain. The patient also reported no previous history of imaging, trauma, effusion, hospitalizations or co-morbidities.

Over the past year, the patient had sought treatment by several physiotherapists, massage therapists and chiropractors who were treating her under the diagnosis of a chronic hip flexor tendinopathy using with soft tissue techniques, laser, and exercises. She reported the treatment offered her temporary relief and allowed her to perform her activities of daily living (ADLs) and resistance-based training workouts with minimal discomfort. However, in the last six months, her pain in the hip became sharp during squats, lunges, and with sitting longer than two hours. She reported becoming anxious as she feared she would have to start avoiding her active lifestyle at the expense of her increasing hip pain. The pain was reported on a visual analogue scale (VAS) as a 3/10 at rest and as a high as an 8/10 when preforming tasks such as lunges, squats and attempting to run. She had not received imaging at this point but voiced her concerns and was waiting to see her medical doctor in a few weeks for her hip pain. Based on the recommendation from a former teammate, she presented to sport specialist chiropractor.

Upon initial observation, the patient demonstrated an externally rotated foot and tibia on the left during single leg stance, double leg stance and the stance phase of the gait cycle. Performance of both overhead and two-legged squats revealed left hip and groin pain at approximately 90 degrees of hip flexion. Lumbar spine range of motion testing (active, passive and resisted) was unremarkable bilaterally. Noting her extreme ease to place both palms of her hands on the floor during lumbar flexion, a Beighton's Scale exam[13] was performed where she scored 7/9 (positive for lumbar flexion, bilateral elbow and knee hyperextension, bilateral 1st phalanx extension). Visual examination of the low back and both hips demonstrated no signs of effusion, ecchymosis or deformities.

Physical examination of both hips revealed a dull pain in the groin on end-range flexion and internal rotation. When performing external rotation in full hip flexion on the left, the patient reported sharp pain along both the posterolateral aspect of the hip and groin. This became more pronounced when taking the same (left) hip into extension and external rotation. Both the left hip scour and flexion-adduction-internal-rotation (FADDIR) tests were painful and created similar dull groin pain with no noticeable catching or reproduction of mechanical locking. The left hip FADDIR test was deemed a hard end feel at end range in comparison to the right hip. Performance of the posterior hip impingement test and external de-rotation tests on the left hip recreated her characteristic hip and sharp groin pain.[7,10] Despite pain in the external de-rotation test, there was no notable differences in strength when compared to the right side. Active straight leg-raise (SLR), lumbar Kemp's, thigh thrust, and both sacroiliac joint compression and distraction tests were negative. Hip log roll, hip axial loading and valsalva tests were negative. When this same battery of testing was performed on the right hip, all tests were negative. The basis of this clinical hip exam and its justification has been noted in previous published literature[1,7,14] and the clinical rationale to this method will be highlighted in the discussion. Manual palpation of the left quadratus femoris recreated her chief groin and posterolateral hip pain while the capsular portion of her iliopsoas (common) tendon created the

Table 1. *Differential diagnoses for hip pain.*[1,15]

- Intra-articular pathology
  - Femoroacetabular bony morphologic changes (FAI)
  - Labral tear
  - Osteoarthritis
  - Inflammatory arthritis
  - Avascular necrosis (AVN)
  - Dysplasia
  - Adhesive capsulitis
  - Synovitis/inflammation
  - Laxity (traumatic and atraumatic)
- Extra-articular pathology
  - Snapping hip (internal/external)
  - Greater trochanteric pain syndrome (trochanteric bursitis)
  - Ischial & psoas bursitis
  - Osteitis pubis
  - Sports hernia (athletic pubalgia)
  - Piriformis syndrome
  - Lumbar spine/Sacroiliac joint pathology referral
  - Obturator internus/gemelli complex tendinopathy/tear
  - Hip flexor, extensor, abductor, adductor tendinopathy/tear
  - Sacral stress fracture
  - Ischiofemoral impingement
  - Sciatic & pudendal Neuropathy

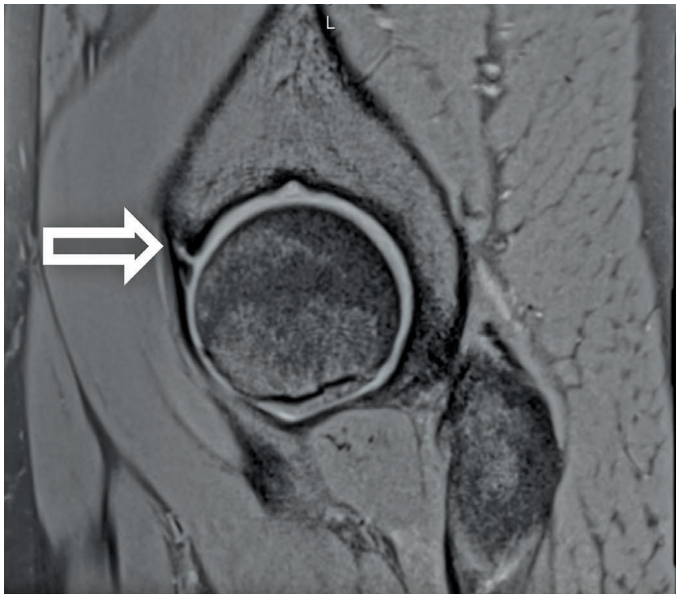

Figure 1.
A T1-weighted sagittal MR image of the left hip demonstrating an acetabular labral tear (white arrow).

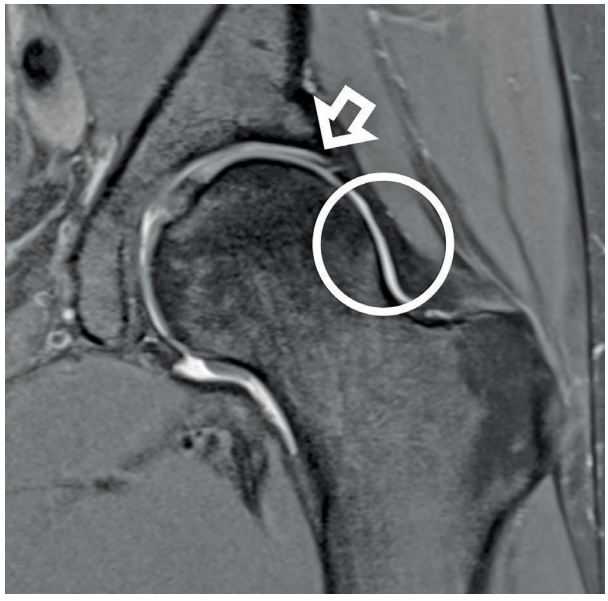

Figure 2.
A T2 fat-suppressed MRI of the left hip demonstrating a mild cam-type morphology (white circle) with an acetabular labral tear (white arrow).

dull, deep left groin pain. Other notable hypertonic and tender areas included the proximal adductor magnus tendon, gluteus minimus and medius, piriformis, and greater sciatic notch on the left. No radicular pain or paresthesia was recreated during palpation and the reported orthopedic tests.

Given her history and clinical exam findings, the patient was diagnosed with suspected left posterior hip (ischiofemoral) impingement and subsequent quadratus femoris irritation. Due to the generalized joint laxity throughout the joints in her body as indicated from the high score on the Beighton's scale, there was also a clinical suspicion of atraumatic hip instability.[15,16] In order to rule out competing intra-articular and extra-articular differential diagnoses (Table 1), she was referred back to her physician with a request for both plain film and MR imaging. Initial plain film imaging suggested a possible cam-type morphology of the left hip and the subsequent MRI confirmed these findings in addition to an acetabular labral tear in the left hip. There was also evidence of edema in the insertional tendon of the left quadratus fem-

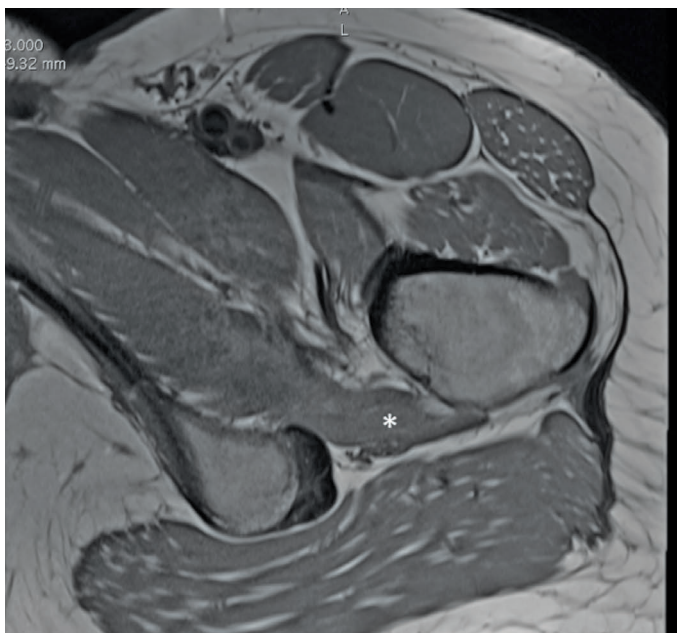

Figure 3.
A T1-weighted axial MR image of the left hip demonstrating edema in the insertional tendon of the quadratus femoris (white asterisk). No active bony edema is present in the left trochanter or ischial tuberosity.

oris with no marrow edema in the ischial tuberosity and greater trochanter (see Figures 1-3). No other findings including partial or full-thickness tears to the surrounding hip musculature was noted. No specific imaging protocols were administered for atraumatic instability of the hip. Previous work[14,17] has discussed these imaging findings in detail for allied healthcare practitioners.

Once the diagnosis was confirmed with advanced imaging, she was scheduled for a consult with an orthopedic surgeon to evaluate her hip. While this consult was pending, the patient was placed on a multimodal plan of management including soft tissue therapy, electroacupuncture, joint mobilizations, and rehabilitation exercise over the course of two months: two times a week in the first three weeks, and once a week for the following three weeks, and one follow up over a two-week period. This plan of management and detailed rehabilitation program has been previously described in the literature[14] and will be explored in further detail in the Discussion (Table 2). When the patient was able to see the orthopedic surgeon three months later, they informed her that she was not a surgical candidate at this time due to her high function and lack of joint related hip pain and was encouraged to keep going with her plan of non-surgical management. Following this visit with the orthopedic surgeon, the patient was seen for treatment twice (two weeks apart) before leaving for a new job out of province. Since she was pain free for most of her activities of daily living and able to complete her desired exercise training, she was given a discharge and encouraged to keep up with her rehabilitation exercises two to three times per week. The one activity she did not return to at this time point was long distance running

Table 2. *Rehabilitation exercise program, adapted from MacIntyre et al*.[14]

Phase	Exercises/Stretches	Reps	Sets	Time
Phase 1	Posterior hip capsule stretching	15	2	30 sec
	Dynamic hip capsule stretching	15	2	
	Potato squat with 5lb medicine ball	12	2	30 sec
	Modified curl-up	12	3	
	Side bridge track	2	3	
	Bird dog track	12	3	
	Pelvic (supine) bridge with theraband at knees	12	3	45 sec
	Side-lying hip abduction	15	2	
	Deadbug with isolated single limb movement	15	3	
	Single leg balance on disc/pillow		3	
	BOSU squats	15	2	
	Goblet Squat with 20lb dumbbell	12	2	60 sec
Phase 2	Deadbug (contralateral movement + exercise ball)	15	3	
	Pallof press track (split stance to upright posture)	15	3	15
	Exercise ball plank to stir-the-pot	2	3	sec
	Single leg squat (BOSU)	15	3	
	Step ups & lateral cross-over step up	15	3	
	Multi-angle lunge (clock lunge)	15	3	
	Multi-plane monster walks	15	3	
	Split squats	10	2	
Phase 3	Slideboard multi-angle lunges	15	3	
	Slideboard lateral slides	15	3	
	Single leg box squat	12	3	
	Pallof press on BOSU/stability disc	15	3	
	Zigzag bounds	10	3	
	Front & lateral shuffles (ladder agility drills)	Max	3	5 min
	Tuck jumps to tuck holds on BOSU	10	3	

(limited to <10 km distances) as this was advised by the surgeon on the consult.

Discussion

Epidemiology

The hip is a complex structure to examine, as there are a multitude of different pain generators that clinically speaking, could all present similarly (Table 1). Femoroacetabular pathology is a common cause of anterior hip (groin) pain. Although under-recognized as a possible cause of posterior hip pain, studies have presented this atypical symptomatology.[1] Femoroacetabular impingement (FAI) in particular, a well-documented anatomical bony variant within the hip, should be considered in patients with posterior hip pain, especially in cases where anterior hip (groin) pain is also created or exacerbated with hip motion. FAI has also shown to cause chondral and labral injury, and may stimulate early osteoarthritic development in affected individuals.[1,5,6,14,22] A retrospective study of 51 patients with hip pathology who participated in fluoroscopically guided intra-articular hip joint injections identified 71% of patients who had posterior hip pain. In approximately 20% of those with either a labral tear or early osteoarthritic change also experienced posterior hip pain in another retrospective hip arthroscopy study. The vast majority of patients in the latter study also had coexisting anterior hip pain.[8,23]

With respect to this case, the patient presented with transient hip pain that worsened over time. Although a battery of FAI-related orthopedic testing was inconclusive, the posterior distribution of her pain may have been attributed to the cam-type FAI. Interestingly, FAI, labral tears, periarticular muscular weakness and ligamentous or capsular laxity are known contributing factors to microinstability of the hip[9-12,16,24,25] which can further exacerbate conditions such as ischiofemoral impingement and extra-articular hip tendinopathy causing anterior and/or posterior hip pain[10,12,15,16]. Not only can microinstability be the cause of such factors, but it may also be the consequence.[9] As previously mentioned, FAI has the potential to provoke labral injury through the abnormal, premature abutment between the femoral head and acetabular rim at certain extreme hip ranges of motion.[10,16,17] In the presence of an acetabular labral tear, a negative pressure seal once produced by the labrum is now compromised, increasing the potential likelihood of subtle postero-inferior subluxations of the femoral head via a levering moment created by the abnormal bony morphology, consistent with microinstability.[10,16,17,26] The labral seal may also play a role in lubricating the hip joint, adequately attenuating forces in a uniform manner, and preventing direct cartilage contact.[26] A loss of such a seal may be a strong contributor in the development of chondral damage within a hip joint consistent with FAI and a labral injury findings on advanced imaging.[26]

Clinical assessment

A systematic review and meta-analysis examining the diagnostic accuracy of hip FAI/labral tear (LT) orthopedic tests revealed interesting results.[7] Due to vast amount of heterogeneity, variable reference standards and bias seen throughout the examined published articles, only nine studies qualified for meta-analysis examining two orthopedic tests. The flexion-adduction-internal rotation (FADDIR) test and flexion-internal rotation (Flex-IR) test are the only two that are recommended to be used for the purposes of screening for FAI/LT pathology (Table 3). As

Table 3.
Diagnostic properties of physical examination tests for FAI/LT and hip microinstability.[7,18]

Clinical Examination Test	Sensitivity (SN)	Specificity (SP)
FADDIR	96.5% (95% CI, 94% to 99%)	7% (95% CI, 5.0 % to 9.0%)
Flex-IR	97.5% (95% CI, 96% to 99%)	25% (95% CI, 1.0 % to 81.0%)
AB-HEER	80.6% (95% CI, 70.8% to 90.5%)	89.4% (95% CI, 80.5% to 98.2%)
Prone Instability	33.9% (95% CI, 22.1% to 45.7%)	97.9% (95% CI, 93.7% to 100.0%)
HEER	71.0% (95% CI, 59.7% to 82.3%)	85.1% (95% CI, 74.9% to 95.3%)

with all hip examination tests, these two mentioned tests are not specific.[7] It has therefore been a recommendation to include a battery of such tests during clinical examination.[1,7,14]

A recent paper examined the diagnostic accuracy of three physical examination tests in the assessment of hip microinstability using intraoperative identification of instability as a reference standard in 194 patients.[18] Tests of interest included the abduction-hyperextension-external rotation (AB-HEER) test, the prone instability test, and the hyperextension-external rotation (HEER) test (Table 3). The AB-HEER test was determined to have the highest clinical utility with the highest sensitivity of 80.6% and specificity of 89.4%. Although the prone instability test had a very low sensitivity of 33.9%, it had the highest specificity of 97.9%, which would raise the clinical suspicion of hip microinstability assuming a positive test. Lastly, the HEER test scored mediocrely with a sensitivity and specificity of 71.0% and 85.1% respectively. Luckily, not only did all three tests yield a high positive predictive value ranging from 86.3% to 95.5%, there was a 95.0% likelihood that a patient had hip microinstability when all three tests were positive. Although other studies need to be published in order to further validate these tests, they can aid to substantiate this relatively overlooked clinical diagnosis in an area of the body where diagnostic accuracy of physical examination tests are typically low. Both authors feel that this information would have been useful in the case presented to help make clinical hip testing more conclusive and establish a more appropriate differential diagnosis list. Since generalized joint laxity could be a contributor to microinstability, an assessment using the Beighton's Physical Examination Criteria[13] is warranted and had value in the case presented[11].

It is first important to understand that every case is different, each with their own varying degrees of severity and complexities. In the case presented, the patient had a MRI confirmed cam-type FAI and acetabular labral tear in the left hip. There was also evidence of edema in the insertional tendon of the left quadratus femoris suggesting a tendinopathy. The Warwick Agreement, an international consensus meeting consisting of 22 panel members from nine countries and five different medical specialties came to substantial agreement for 6 different statements regarding the diagnosis and management of patients with FAI syndrome (FAIS).[19] It was concluded that FAI should be diagnosed clinically as a motion related syndrome, which includes a consideration of presenting symptoms, clinical signs, and imaging findings. Cam and/or pincer bony morphologic changes in the hip may be present on imaging modalities in those who experience no symptoms. A systematic review[20] reported the prevalence of FAI based off imaging findings of a total of 2,114 asymptomatic hips. Cam morphology was identified in 37% of the sample. There was a 3:1 prevalence of cam morphology favouring athletes versus the general population. Although pincer morphology was more poorly defined, it represented 67% prevalence of the entire sample. Lastly, 68.1% of all asymptomatic hips studied revealed labral injury on MRI. These results support the decision that FAIS should be diagnosed clinically with an assessment integrating various planes of movement.[20]

Management

Treatment options for FAIS varies based on the severity of injury, involvement of surrounding soft tissue structures (i.e. labral tear), age, activity level, and symptoms. Currently, there is no high-level evidence to support a definitive treatment for FAIS. The Warwick Agreement recommends and supports the consideration of three possible treatment options for the management of FAIS which include: conservative care, rehabilitation, and/or surgery. A multidisciplinary, shared-decision making approach between the patient and a team of healthcare professionals is recommended.[19] Conservative care options may include patient education, lifestyle and activity modification, non-steroidal anti-inflammatory drugs, intra-articular steroid injections, and/or watchful waiting. The goals of rehabilitation are to improve: hip stability, neuromuscular control, strength, range of motion, and movement patterns of the lumbo-pelvic region. Combined conservative and rehabilitative approaches which have been detailed previously in the literature[14,21] attempt to address the neuromusculoskeletal insufficiencies in the surrounding soft tissues despite the presence of structural abnormalities (i.e. labrum) or osseous structures (i.e. femoral head). In cases where a non-surgical plan of management fails to adequately restore functionality, an arthroscopic technique with labral debridement/repair or an open technique can be used to address the bony and soft tissue defects which are suspected to be the source of dysfunction in those with FAI and labral tears.[14,19] Regardless

of the course of action, whether conservative or surgical, rehabilitation is used as a primary means to address the lumbo-pelvic or lower kinetic chain deficiencies that are suspected to be associated with the hip dysfunction and symptomatology.[14,19] Postoperative rehabilitation protocols have been described, although their value is uncertain due to a lack of high-level clinical studies.

In the case presented, the labral tear in the hip can be considered true hip (macro) instability by definition. However, without advanced imaging and the atypical presentation during clinical assessment, entertaining the possibility of hip microinstability with the presence of multiple hip pathologies would seem plausible to allow implementation a rehabilitation program focusing on joint centration and stability.[11,12] This shifts clinical focus to resolving the largest movement-related deficiency versus focusing on the subtleties of the interrelated or nonrelated tissue specific diagnoses. It is in the authors' opinions that this would result in the most favourable results for a patient and addresses the movement-related issues with hip conditions such as FAIS. Essentially, if the passive structures of the hip are compromised (as they are for the patient in this case), there is a dysfunctional and compensatory over-recruitment of the local deep musculature. These active stabilizers of the hip include the gluteus minimus and medius, quadratus femoris, the gemelli complex, obturator internus and externus, iliocapsularis and the deep fibres of iliopsoas, which all act to reduce the shear forces placed upon the hip joint when recruited sufficiently.[11,12]

Macintyre *et al*.[14] proposed an eight-week rehabilitation program in a case of an elite level ice hockey goaltender with MRI confirmed cam-type FAI and acetabular labral tear who was treated non-surgically. The rehab program consisted of three phases: neuromuscular facilitation, functional training, and sport specific training which were created to progressively improve muscle coordination, strength endurance, and improve lumbo-pelvic stability. The patient also received passive treatment one to two times per week for a total duration of six weeks (total eight treatments) which consisted of Active Release Therapy (ART)®, spinal manipulative therapy (SMT), Mulligan hip Mobilizations with Movement (MWM), and contemporary medical acupuncture. After six weeks of treatment the patient was pain free during rest and exercise, with symptoms only exacerbated with the hip scour and FADDIR tests on the affected hip. By eight weeks the patient returned to play pain free. It is important to highlight this case as it demonstrates a promising outcome with regards to improvements in symptoms and function despite the presence of a cam-type FAI and labral tear which were not treated surgically. This suggests that neuromuscular structures are strongly involved in those with FAI and labral tears, and addressing their dysfunction, alongside the presence of any biomechanical limitations remain a strong predictor in clinical, non-surgical outcomes.[14] Although it is not known as to whether this hockey goaltender had developed hip microinstability, the prescribed exercise program that was implemented would theoretically promote hip joint centration and stability which would be of benefit for our patient, returning her to a pain free state during exercise. Using this case as a guide, a similar plan of manual therapy and rehabilitation exercise was used for the case presented and followed the course of two months: two times a week in the first three weeks, and once a week for the following three weeks, and one follow up over a two-week period. The rehabilitation protocol followed can be found in Table 2.

Revisiting the case

Typically, at risk patients for hip microinstability are young females participating in sports which require excessive hip joint ranges of motion, such as gymnastics, dance, or yoga.[9] Although the patient did not partake in any such sport, she did happen to be a young female who tested positive for generalized joint laxity (Beighton's score of 7/9). Her MRI confirmation of cam-type morphologic changes of the femoral head (FAI) along with a labral tear was also evidence for localized hip laxity and instability. With all these things considered, along with a history of progressively declining symptoms in the absence of a single traumatic event, it is likely that hip microinstability was an active contributor to her hip pain during the evolution of her injury.[9,11,12,24] Considering this patient was an experienced endurance runner with these intra- and extra-articular hip pathologies present, they all could have been exploited during repetitive single leg axial loading. This may have been responsible for episodes of shifting location and character of pain and atypical testing during routine clinical examinations.[10,12] As highlighted in previous sections, it becomes important to have a robust and patient focused clinical examination to best formulate a specific plan of management that ad-

dresses the goals of the patient. Understanding the movement-related deficiencies in such a case is a significant factor to tailor a targeted and progressive exercise regimen to increase overall joint stabilization and lower body strength. Furthermore, having the ability to recognize more serious joint pathology in the differential diagnosis list and utilizing a model of multidisciplinary management for advanced imaging and medical management is critical for best patient outcomes.

Summary

This case highlights the necessity for an exhaustive and complete physical exam when assessing pain in the hip, which goes far beyond simply assessing the hip, especially considering the lack of robust hip examination tests. Not only are there a multitude of intra and extraarticular hip structures that can cause hip pain, several distant anatomical regions exist which can refer pain to the same area. Hip microinstability should be on the radar for clinicians, especially in those who are at high risk with multiple hip pathologies. An awareness of hip pain differential diagnoses, an understanding of assessment, and directions to plan of management will help guide practitioners when dealing with cases presenting in a similar fashion.

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