

# Management of Hip Pain in Young Adults



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## KEYWORDS

• Hip pain • Femoroacetabular impingement • Dysplasia

## KEY POINTS

- Differential diagnosis of hip and groin pain.
- Nonoperative treatments of hip pain.
- Operative treatments of hip pain.
- Current concepts in management of femoroacetabular impingement.

## INTRODUCTION

The management of hip pain in the young adult remains a challenge in some circumstances. Over the past few decades, understanding of a few specific conditions affecting the hip has advanced. Femoroacetabular impingement (FAI) is a condition that was popularized in recent decades. The optimal management of FAI and many other conditions affecting the hip is still unknown. The differential diagnosis of hip pain has also expanded, bringing with it new challenges and opportunities. The management of various causes affecting the labrum and cartilage of the hip joint are particularly problematic in the young patient, and evolution of the understanding of the young adult hip has dramatically changed management of this patient population. This article reviews the current literature on hip pain in young adults (ages 18–35 years), including physical and imaging diagnosis, the accepted treatments and controversies, and areas for further progress.

## EVALUATION OF HIP PAIN IN THE YOUNG ADULT

### Clinical Presentation

A careful history and physical examination should be performed to appropriately elucidate the

cause of the patient's symptoms. The location of the pain is important because intra-articular hip pain most commonly presents in the groin but may also present on the side of the hip, in the buttock, and may refer to the anteromedial knee via the obturator nerve. Patients with FAI or other intra-articular pathologic condition may make a c-sign when describing their pain, grasping the hip in the c-shape. Buttock pain and pain radiating down the posterior leg should alert the practitioner to the possibility of pathologic state of the lumbar spine. Pain in the lateral aspect of the hip may indicate trochanteric bursitis or iliotibial band friction syndrome. Pain that is strictly medial may indicate adductor muscle disease or hernias. Pain that presents superior to the inguinal ligament and radiates to the groin can be a presentation of a sports hernia or intra-abdominal, urologic, or gynecologic disease. The description of the pain can point the practitioner in a particular direction. Dull ache with intermittent sharp symptoms can represent any number of pathologic states. However, shooting or electric pain with numbness or tingling is often neurologic in origin.

The onset and provocation of the pain can often lead the practitioner to an appropriate diagnosis. Traumatic events should be carefully investigated in terms of the position of the leg at the time of the event and force directed

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against it because this will give clues to the structures and muscles involved. Frank dislocation of the native hip can also result in the late sequelae of avascular necrosis. Pain with deep flexion is characteristic of labral tears or chondrolabral junction injuries. These can also present with external rotation and extension. Participation in certain sports activities has been associated with particular injuries. Labral tears are more common in patients who participate in hockey, football, gymnastics, soccer, ballet, running, yoga, and surfing.<sup>1,2</sup> Runners are at high risk for iliotibial band friction syndrome and iliopsoas tendinitis. Mechanical symptoms indicate labral tears and chondral lesions. Painful clicking or snapping with flexion and extension is the presenting complaint of internal and external snapping hip (coxa saltans).

### Medical History

Past medical history can give particular clues that should not be ignored, even in the young patient. A birth history indicating possible developmental dysplasia of the hip (DDH) should be elicited (even if the eventual diagnosis is made radiographically). First-borns, females, breech births, and oligohydramnios are the classic risk factors for DDH. It is important to know if patients had prior interventions for congenital hip dysplasia. A history of Legg-Calvé-Perthes or slipped capital femoral epiphysis may influence the choice of treatment and need for surgical intervention. A history of childhood obesity and endocrine disorders may raise suspicion for undiagnosed or subtle slipped capital femoral epiphysis. Any history with risk factors for avascular necrosis should be carefully teased out (eg, steroid use, alcohol, diving, human immunodeficiency virus infection [HIV], AIDS, antiretroviral therapy).

### Physical Examination

The physical examination is a crucial portion of the diagnosis. The patient should first be observed ambulating. This exercise is most commonly done by watching the patient walk to the examination room before their knowledge of observation. Antalgic gait patterns should be observed carefully to help differentiate hip and knee disease. Knee or hip flexion contractures may also masquerade as antalgic gait. The practitioner should pay attention to foot progression angle as a clue for determining abnormal acetabular version. A Trendelenburg gait should be confirmed with the Trendelenburg sign and strength testing of the abductor muscles. Subtle abductor weakness can be present in patients

with DDH. Abductor muscle weakness also increases the joint reactive force and may exacerbate problems that might not otherwise cause patient discomfort. The subtleties of abnormal gait may help in specific diagnoses but may also identify deficiencies and targets for specified therapy. Studies have shown that patients with symptomatic FAI have lower voluntary motor contraction in all hip muscle groups (adduction, abduction, flexion, internal and external rotation) as well as lower electromyography (EMG) activity in certain muscles such as the tensor fasciae latae.<sup>3</sup> This can lead to specific kinematic and kinetic differences during gait. A study by Hunt and colleagues<sup>4</sup> compared 30 subjects with symptomatic FAI scheduled for surgery with 30 control subjects without FAI. They found that the subjects with FAI had a slower walking speed with slower cadence. Kinematically, the FAI group exhibited significantly less peak hip extension, adduction, and internal rotation during stance. Physical therapy targeting specific deficits may have a role in the treatment of patients with FAI, or comparative kinematic measurements may have a role in determining the success of the operative therapy. However, this has not been formally studied.

The patient should be examined standing as well as supine. Leg-length differences should be noted and compared with radiographs (full-length films should be obtained if there is any equivocation). Range of motion should be carefully tested and compared with the asymptomatic leg. During testing, attention must be paid during hip flexion and extension to detect flexion contractures. This can be done by having the patient flex both knees to the chest and then extend 1 knee at the time, thus removing lumbar compensation. The Stinchfield test (resisted hip flexion with the leg straight and 6 inches off the table) can help diagnose intra-articular problems because it indirectly loads the joint via muscle contraction. There are several tests for impingement, including flexion abduction external rotation (FABER) and flexion adduction internal rotation (FADIR). The extreme of flexion alone may cause impingement and symptoms may also be reproduced with hip external rotation and extension. The FABER test may also be positive with sacroiliitis. However, the location of this pain is usually over the sacroiliac joint and not in the groin, buttock, or lateral hip as with FAI. The Ober test helps determine iliotibial band tightness. Clear points of tenderness that lead to specific diagnoses include the bursa over the greater trochanter and over the iliotibial band

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