

Híp Arthroscopy An Innovative Technique

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INTRODUCTION

- Beginning this century, there has been an “increased awareness” of injuries to the hip
- Athletes of the 21st century push their bodies to new physiologic limits
- Youth athletes start earlier and play longer & harder
- The “aging athlete” wants/demands to stay active

INTRODUCTION

- The hip is a difficult joint to exam and diagnosis
 - Many disorders now being recognized have always been present
 - Obscured by our limited clinical assessment skills
 - Deep with large amount of soft tissue coverage
 - Constrained
 - Hip disease often co-exists with other disorders
 - Imaging not as reliable

INTRODUCTION

- Is the hip the problem?
 - Hip not recognized as the source of symptoms in 60% of cases
 - Length of time from initial onset of symptoms to diagnosis is 21 months
 - Average number of evaluations prior to accurate diagnosis is 3.3
 - 17% of patients recommended surgery at another site

HISTORY

- History will vary based upon the pathology present
- Must examine the spine pelvis and abdomen to rule out a referred pain
- Up to two thirds of patients have no precipitating event



HISTORY

- When an injury occurs, consider the mechanism
- Type of sport important
 - Twisting/pivoting sports may result in labral tears
 - Repetitive sports may lead to a femoral neck stress fracture



HISTORY

- Intraarticular problems
 - Mechanical symptoms
 - Deep pain, localized to the groin or inguinal region
 - May refer to medial thigh, trochanteric region, or buttocks
 - Discreet episodes of sharp pain exacerbated by pivoting or twisting



HISTORY

- Intraarticular pathology
 - overtime may become dull, positional, or activity related
 - May become continuous
 - Discomfort sitting
 - Catching or popping on arising from seated position
 - Loss of motion results in difficulty putting on shoes



INTRAARTICULAR DIFFERENTIAL DIAGNOSIS

- Labral tears
- Hypertrophic tears (dysplasia)
- Chondral injury
- Focal chondral defects
- AVN
- Ligamentum teres tears
- Synovitis
- FAI
 - Pincer type
 - CAM type
- Loose bodies
- Tumors
- Synovial chondromatosis
- PVNS

EXTRAARTICULAR DISORDERS

- Capsular problems
- Hip instability
- Adhesive capsulitis
- Snapping hip
 - Internal
 - External
- Trochanteric bursitis
- Gluteal tears
- Pubic pain
- Osteitis pubis
- Chronic adductor pain
- Sports hernia
- Tendonitis/avulsion injuries
- Nerve compression
- Piriformis syndrome
- Neuralgia paresthetica

PHYSICAL EXAM

- General (not just the hip)
 - Gait
 - Abdominal
 - Spine
 - Knee
 - Leg length
 - Ligamentous laxity



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PHYSICAL EXAM

- Palpation
 - Greater trochanteric region
 - Muscle origins
 - Iliac crest
 - Sciatic nerve
 - Hernia
 - Pubic symphysis
 - Lumbar, sacrum, sacroiliac joint



PHYSICAL EXAM

- Standing exam
 - Abductor deficient gait
 - Antalgic gait
 - Pelvic rotation wink
 - Foot progression angle with excessive IR or ER
 - Short leg limp
 - Single-leg stance phase
 - Spinal alignment
 - laxity

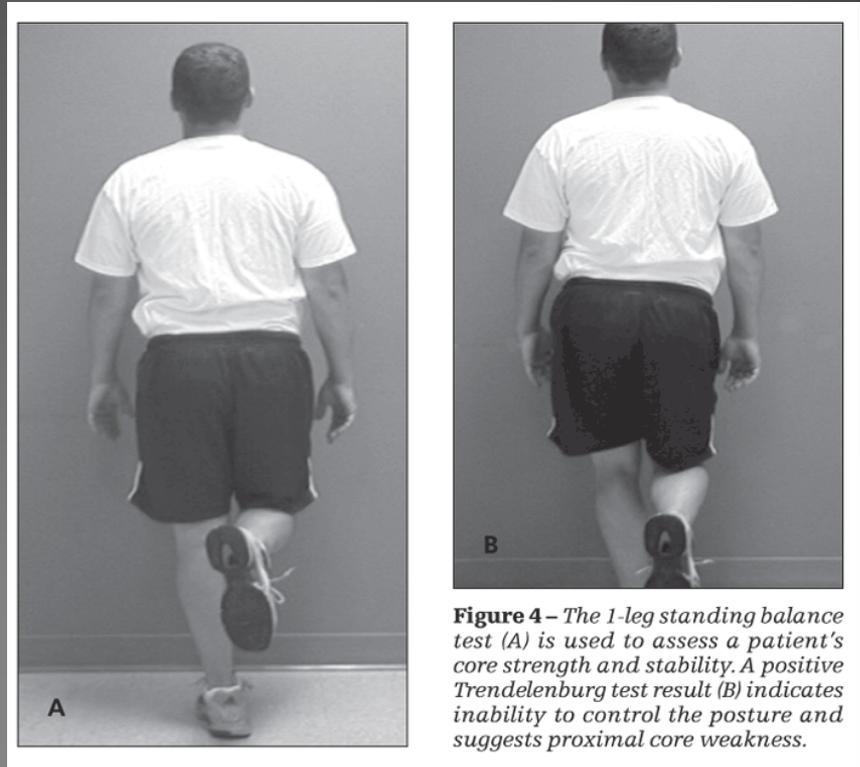
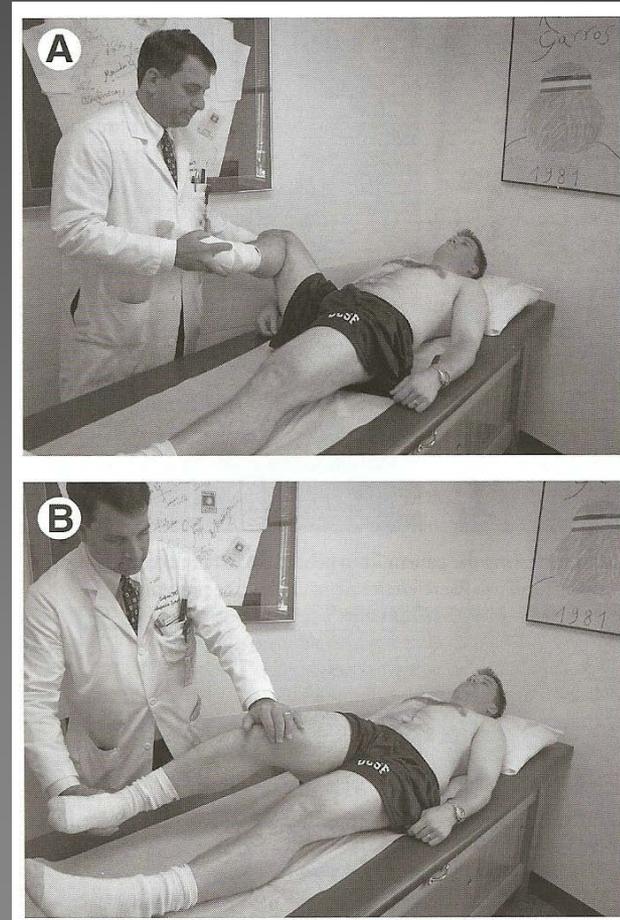


Figure 4 – The 1-leg standing balance test (A) is used to assess a patient's core strength and stability. A positive Trendelenburg test result (B) indicates inability to control the posture and suggests proximal core weakness.

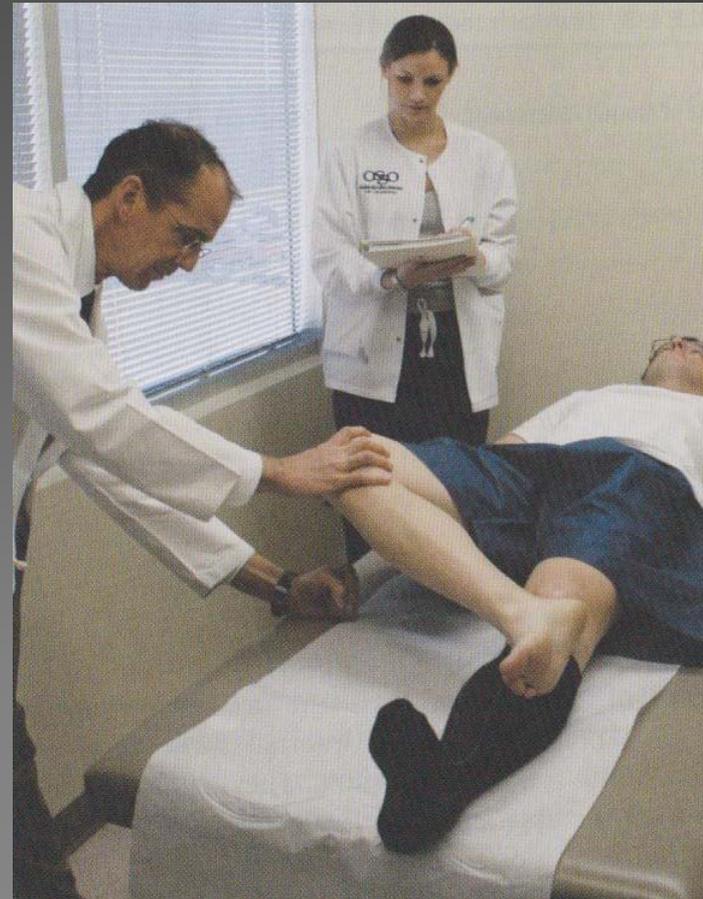
PHYSICAL EXAM

- Range of motion
 - Supine & seated
 - Unaffected hip
 - Affected hip
 - Flexion 110-120°
 - Extension 10-15°
 - Abduction 30-50°
 - Adduction 30°
 - External rotation 40-60°
 - Internal rotation 30-40°



PHYSICAL EXAM

- *Supine exam*
 - ROM
 - Thomas test
 - FABER
 - DIRIT
 - DERIT
 - Posterior rim impingement
 - Heel strike
 - Piriformis syndrome test
 - SLR
 - Log roll
 - palpation



PHYSICAL EXAM

- Lateral exam
 - FADDIR
 - Lateral rim impingement
 - Ober test
 - Gluteus maximus contracture test
 - Palpation
 - Greater trochanter
 - SI joint
 - Ilium
 - Maximus origin



PHYSICAL EXAM

- Prone exam
 - Ely test (rectus contracture)
 - Craig test (femoral anteversion test)
 - Palpation
 - Supra-SI
 - SI
 - Gluteus max insertion
 - spine



PHYSICAL EXAM

- Strength testing
 - Test done seated, supine, lateral and prone



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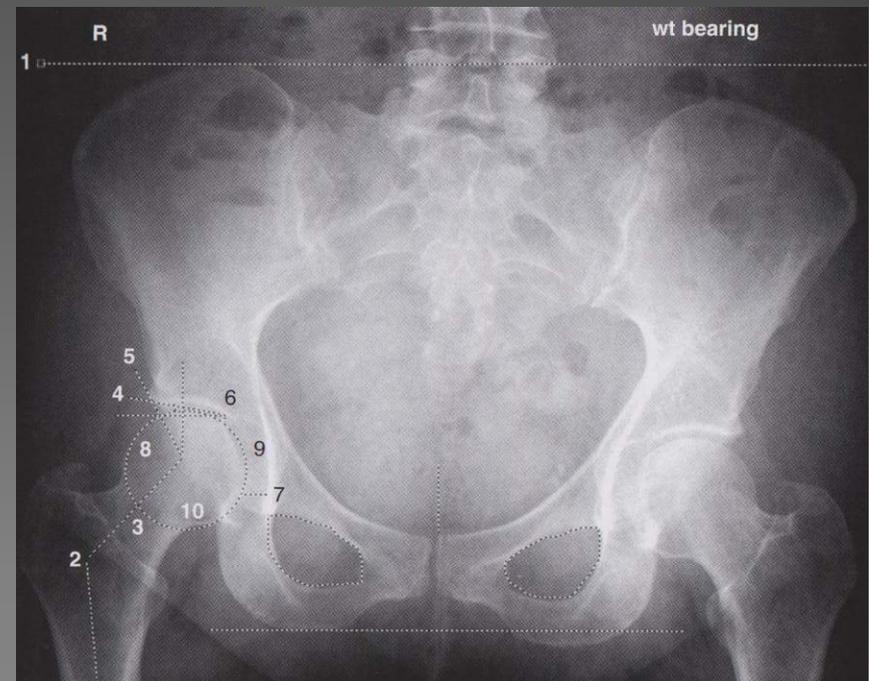
DIAGNOSTIC STUDIES

- Routine radiographs in all patients
 - AP pelvis
 - AP and lateral of affected hip
 - Help exclude degenerative changes, AVN, loose bodies, stress fracture, acetabular dysplasia



DIAGNOSTIC STUDIES

- 1) functional leg length
- 2) neck shaft angle
- 3) FN trabecular pattern
- 4) acetabular inclination
- 5) center edge angle
- 6) joint space width
- 7) lateralization
- 8) head sphericity
- 9) acetabular cup depth



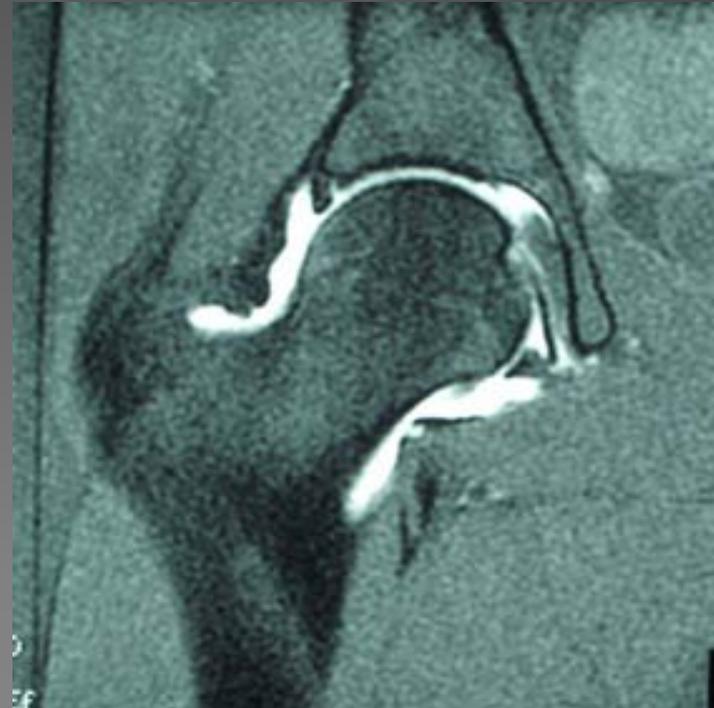
DIAGNOSTIC STUDIES

- Crossover sign
 - Positive sign denotes acetabular retroversion
 - May be consistent with over coverage of the femoral head



DIAGNOSTIC STUDIES

- MRI vs. MRA
 - MRI 42% false-negative and 10% false positive
 - MRA 8% false-negative and 20% false positive
- MRA more sensitive than MRI but two times as many false positives



DIAGNOSTIC STUDIES

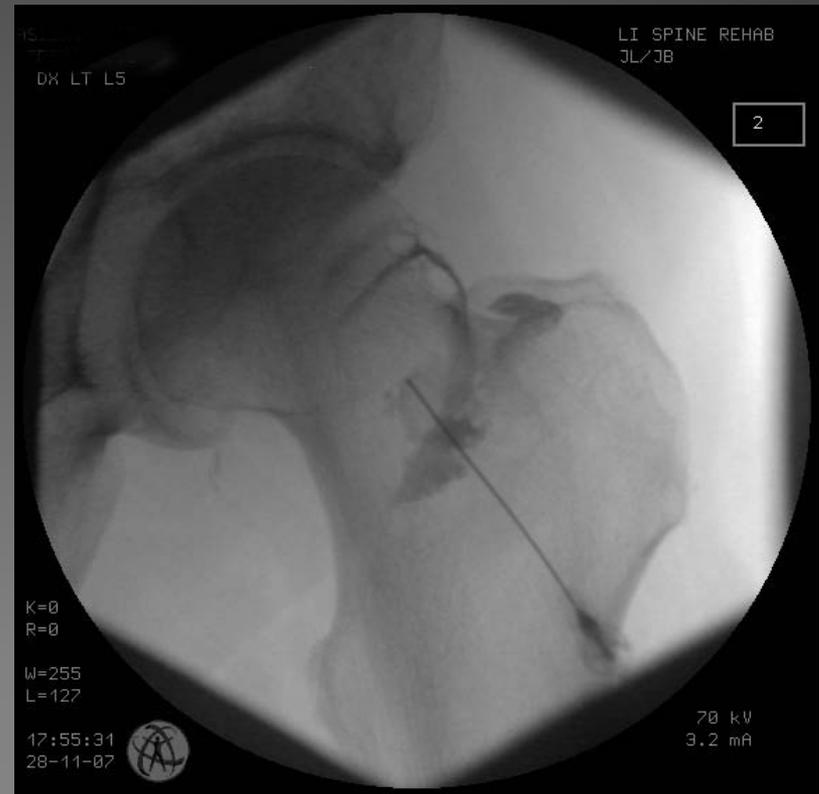
- For MRI or MRA to be useful, need good study
- Requires special coils to increase quality of study
- Need MRI/MRA of unilateral hip, not of pelvis



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DIAGNOSTIC STUDIES

- Intraarticular injection test
 - 7% false-negative and 2% false-positive
 - 90% accurate
 - Intraarticular injection most reliable indicator of intraarticular abnormality



DIAGNOSTIC STUDIES

- 3D reconstruction of hip
 - very helpful for surgical planning especially for FAI
 - Defines Pincer and CAM lesions



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HIP ARTHROSCOPY

- An advancing technology
- Still not common place
 - Difficult diagnosis
 - Fewer indications
 - Technically difficult



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HIP ARTHROSCOPY

- Technical difficulties
 - Constrained joint with very thick capsule
 - Abundant soft tissues
 - Requires joint distraction & liberal use of fluoroscopy
 - Susceptible to iatrogenic injury
 - Complex anatomy



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HIP ARTHROSCOPY

- Advantages

- Less invasive than open techniques
- Diagnostic as well as therapeutic
- Outpatient
- Low complication rate
- Doesn't "burn bridges"

- Disadvantages

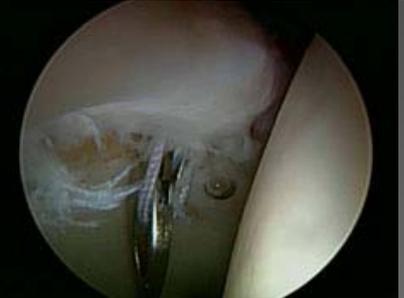
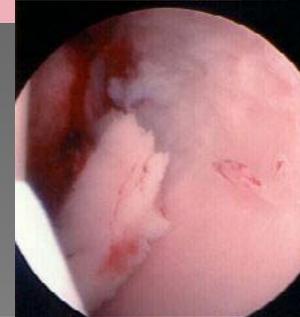
- Technically demanding
- Can not address all pathology



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INDICATIONS

- Loose bodies
- Labral tears
- Acute articular injury
- Isolated chondral lesions
- Ligamentum teres rupture
- Femoral acetabular impingement
- Adhesive capsulitis
- Rheumatoid arthritis
- Septic arthritis
- Internal & external snapping hip



INDICATIONS

- Conditions *not* amenable to Arthroscopy
 - Posterior impingement
 - Labral tears with uncorrectable mechanical overload
 - Acetabular dysplasia
 - Excessive valgus hips
 - Excessive femoral anteversion
 - Arthritis
 - Need a minimum of 2mm joint space
 - AVN



TECHNICAL PEARLS

- Become familiar with the literature and anatomy
- Attend lectures, learn from the experts
- Learning center hip course
- Evaluate the equipment available
- Company sponsored meetings/cadaver courses
- Visit a surgeon accomplished in hip arthroscopy
- Be comfortable with your arthroscopic skills
- "huge" investment in time, money & effort before you do your first case

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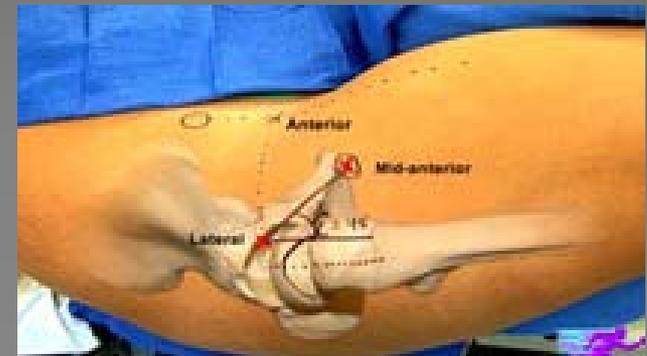
TECHNICAL PEARLS

- Set-up
 - Pad the groin & feet, prevent foot slippage
 - Lateral & longitudinal distraction
 - Approximately 70lbs traction
 - Traction time to 2 hours or less
 - Flex hip about 20 degrees
 - Neutral rotation (patella straight up)



TECHNICAL PEARLS

- Intra-op
 - Anterolateral portal is the work horse (many others)
 - Air arthrogram then inject
 - Spend adequate time on capsular release
 - Liberal use of floro
 - Don't "lose" your portals
 - Proper angle for anchor placement
 - Always evaluate the peripheral compartment



CONCLUSIONS

- Hip arthroscopy is a new, innovative procedure that can address hip pathology using a far less invasive approach than previous open techniques
- Indications are numerous and growing
- For many patients, arthroscopy offers a method of treatment where none before existed

THANK YOU

