

Femoral Acetabular Impingement

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PRISMA
HEALTHSM

Initial Evaluation

Goals

- Reduce inflammation
- Identify and eliminate aggravating factors:
 - Running
 - Sports Activities
 - Prolonged sitting: discuss modifications to work chair, car seat and ergonomics
 - Yoga or aggressive hip stretching
 - Sleeping: prone frog leg position may aggravate symptoms
- Activity is only modified if it aggravates the patient symptoms

Evaluation

- Screen past medical history and current symptoms.
- Assess Functional movement including lumbar and thoracic mobility
- Evaluate both bilateral and unilateral squatting barefoot. Assess dynamic internal femoral rotation, valgus knee, pronation at the foot, and hip flexion angle. Medial cascade can contribute to and predispose the patient to FAI. Lack of ability to flex hip in weight bearing can be informative

Muscular Balance Restoration

- Assess muscle activation: patients ability to selectively turn on glute max and med
- These patients will typically have significant weakness in the hip abductors and extensors demonstrated both with open and closed chain testing.
- Assess hip flexor myofascial quality and length with Thomas Test.
- Assess adductor muscle group: muscle quality and strength. This muscle group often compensates for weakness/muscle imbalance elsewhere
- It is important to mobilize restricted soft tissue; strong attention must be given to the glut med/max, iliopsoas, rectus femoris and piriformis. The hip adductors, VL and ITB, posterior tibialis and ITB will typically need work as well.

Assessment: **Determine primary impairments for your patient and phase of treatment most appropriate.**
Note: if hip joint is significantly flared up it may take weeks of activity modification to see real change in patients Symptoms. You should see steady objective progress in ROM, muscle function, movement before patient may note change in pain, function

Phase I Basic Muscle Activation, Pain Control and Pain-free ROM

Exercises

- 90% passive ROM, 80-90% AROM by 12 weeks. Larger tears and patients with poor tissue quality will progress more slowly.
- Pelvic tilts
- Glute Isometrics
- Double leg bridge
- Prone assisted hip extension (PAHE)
- Hip extension off physioball
- Quadruped series as tolerated
- Self soft tissue techniques using foam roller or massage stick
- Cardio: walking, biking, or elliptical only if pain-free
- Quad, Hamstring stretching usually well tolerated in this phase

Manual Treatment

- Soft Tissue and dry needling: iliopsoas, TFL, rectus femoris, adductors, glutes, hamstrings, pelvic floor
- Hip ROM and joint mobilization to address restrictions

Manual Intervention

- STM and Joint mobilization to CT junction, GHJ and STJ as needed.
- CR/RS to gain ROM while respecting repaired tissue.
- Manual perturbations.
- PNF patterns.

Criteria for Progression to Phase 2

- Improving pain-free ROM
- Good Glute Activation
- No pain with ADL's

Phase II – Muscle Activation, Basic Strength, Pain Free ADL's

Exercises

- Pelvic tilt progression: avoiding active hip flexion if irritating.
- Double leg bridge
- Single leg bridge
- Standing abduction/cord kick series avoiding hip flexion if not tolerated
- Side lying adduction
- Quadruped hip extension leg straight
- Clams
- Foam Roller Bridging Series
- Wall Squats
- TRX Squats with more open hip angle as tolerated
- Step up progression with emphasis on proper knee alignment
- Bilateral calf raises with emphasis on proper push off Hamstring Curls: Ball or Machine
- Hip Bucks and Hip Thrust for glute strength usually well tolerated
- Balance and single leg balance with good hip stability
- Hamstring and calf, quad stretching
- Gentle hip flexor stretching

Integrate Hip Stability Program at End of Phase 2

- Prone Hip Extension (1 x 10)
- Pelvic Tilt (1x10)
- Double Leg Bridge (2x10)
- Single Leg Bridge (2x10)
- Wall Abduction (3x10)
- Wall Adduction (3x10)
- Quadruped Kick Back (3x10)

Manual Treatment

- Continue with manual soft tissue, dry needling and joint mobilizations as indicated
- Continue with self soft tissue work with foam roller and massage stick
- Gentle flexibility work as tolerated

Criteria for Progression to Phase 3:

- Continue with manual soft tissue, dry needling and joint mobilizations as indicated
- Hip abduction strength 4/5
- Flexion, ER and IR ROM within normal limits
- 50% FABER ROM compared to uninvolved side
- Normal Gait
- No Trendelenberg with Single Leg Stance/descending stairs
- Pain-free bilateral squat without compensation

Phase III – Strength

Exercises

- Continue with phase 2 progression
- May add more abdominal work with dead bug progression
- Add unilateral squat, dip, or reverse lunge progression
- Unilateral calf raises with emphasis on proper push off mechanics
- Teach squat. Emphasize proper technique.
- Leg press
- Introduce multi-directional movement: Understand that these patients struggle with lateral movement and multi-directional stability.
- May be more aggressive with hip ER and hip flexor passive stretching
- For impact athletes begin basic ladder series
- If basic ladder series well tolerated may introduce light jogging for short periods- no significant distance in this phase
- Continue with self manual maintenance work with foam roller and massage stick

Manual Therapy

- Continue soft tissue mobilization and dry needling. Goal to reduce need/frequency of dry needling in this phase.
- Continue joint mobilization as needed.
- May begin more aggressive flexibility work in this phase as needed.

Criteria for progression to phase 4:

- Hip abduction and extension strength 5/5
- Single leg squat symmetrical with uninvolved side
- No impingement pain with ROM
- Pain-free with all ADLs and activity as allowed to this point

Phase IV – Return to Sport

Exercises:

- Hip abduction and extension strength 5/5
- Continue with phase 3 progression
- Return to distance running can begin in this phase- per protocol (return to distance running protocol)
- Advance Lunge progression
- Advance ladder series to include jumping
- Plyometric progression
- Begin linear and lateral running with progression to multidirectional drills as tolerated
- Begin drills on field/court as symptoms allow
- Return to full activity

Clinical Pearls

1. Your assessment of what phase your patient is in is very important. If you aren't having success you have likely chosen therapeutic exercise that is too advanced. You should see objective progress by 2 weeks and functional progress by 3 weeks. If your patient is not progressing return to earlier phase!
2. Activity Modification is HUGE with this patient population. You must get buy in from patient (and parents) in order to decrease irritation in the joint.
3. Soft Tissue assessment is also very important. Continually assess and re-assess after STM or FDN to determine effect of intervention on ROM.
4. Progress SLOWLY. Be sure that your patient has adequate muscle activation and functional stability before progressing. It is better to go slowly than to have a 2-3 week set back that frustrates both you and your patient.