



# Outpatient Interventions for Femoral Acetabular Impingement Complicated by Hip Osteoarthritis, Labral Tear and L5 Sacralization: A Case Report



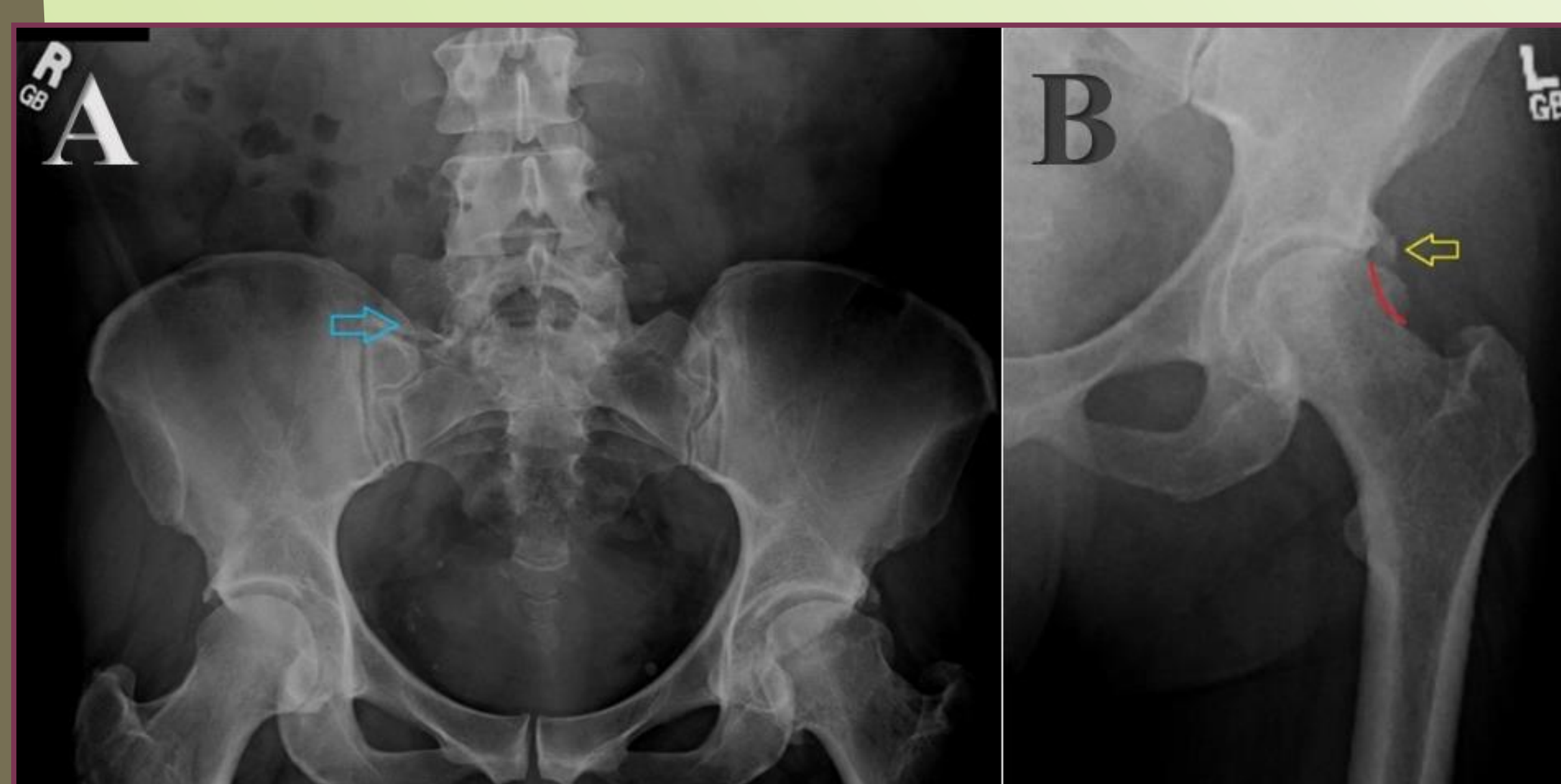
Brianna Palmer, BS  
University of New England

## Background

- Femoral Acetabular Impingement (FAI) is a known cause of hip pain in adolescents and young adults produced by altered hip joint mechanics.
- Types of FAI include Cam deformity, Pincer deformity or a combination.
- Abnormal abutment of the femoral head on the acetabular rim, especially during hip flexion and internal rotation (IR) causes a sharp, pinching pain in the groin and lateral hip.
- Chronic FAI can lead to hip osteoarthritis (OA) and labral and/or chondral defects.
- It is unknown if there is a correlation between FAI and sacralization.

## Patient History

- TS was a 42 year old female who presented with complaints of left (L) hip pain and decreased functional tolerance.
- Activity Limitations included L sidelying, walking, navigating stairs, lower body dressing, sleeping, and squatting.
- X-rays had confirmed FAI and hip OA.



A) Red line indicates cam deformity and yellow arrow indicates pincer deformity. B) Blue arrow indicates site of L5 sacralization on the right. Joint space narrowing is also noted on left hip compared to the right.

## PT Examination Findings

- Impaired Gait: narrow base of support, decreased trunk rotation and arm swing, decreased step length, L toe out, and loss of balance with turning 180°
- Impaired Posture:



Postural Assessment at Admission: A) Anterior view and B) Posterior view of posture reveals toe out, tibial external rotation, calf atrophy, knee flexion on the left and lateral lean, calf hypertrophy, knee hyperextension on the right

- Strength deficits grossly in each lower extremity (LE), especially on the left
- Core strength deficits
- Decreased L hip joint mobility
- Decreased L hip range of motion (ROM)
- Decreased active trunk ROM
- Fair balance on L with pain provocation
- Positive findings for FABER, Thomas Test, Ober's Test, Resisted Straight Leg Raise, Log Roll, FAI/Impingement Test, FADDIR, Hip Scour and Hip Distraction on the L

## Interventions

**Manual Therapy:** Soft tissue massage to low back and hip musculature; Strain Counterstrain for iliopsoas (per Jones) and Joint Mobilizations and Distractions of the L hip (per Kaltenborn)

**Therapeutic Exercise:** Stretching for iliotibial band, rectus femoris, hamstring, piriformis, gastrocnemius and iliopsoas; ROM for trunk and L hip; Strengthening for abdominals, hip prime movers, gluteus muscles, quadriceps and hamstrings

**Neuromuscular Re-education:** Balance Training; Proprioceptive Neuromuscular Facilitation (PNF) (per O'Sullivan)

**Therapeutic Activities:** Stair Training, Foam Rolling, Gait Training



	D1 Flexion	D1 Extension
Hip	Flexion, adduction, ER	Extension, abduction, IR
Knee	Flexion	Extension
Ankle	Dorsiflexion	Plantarflexion



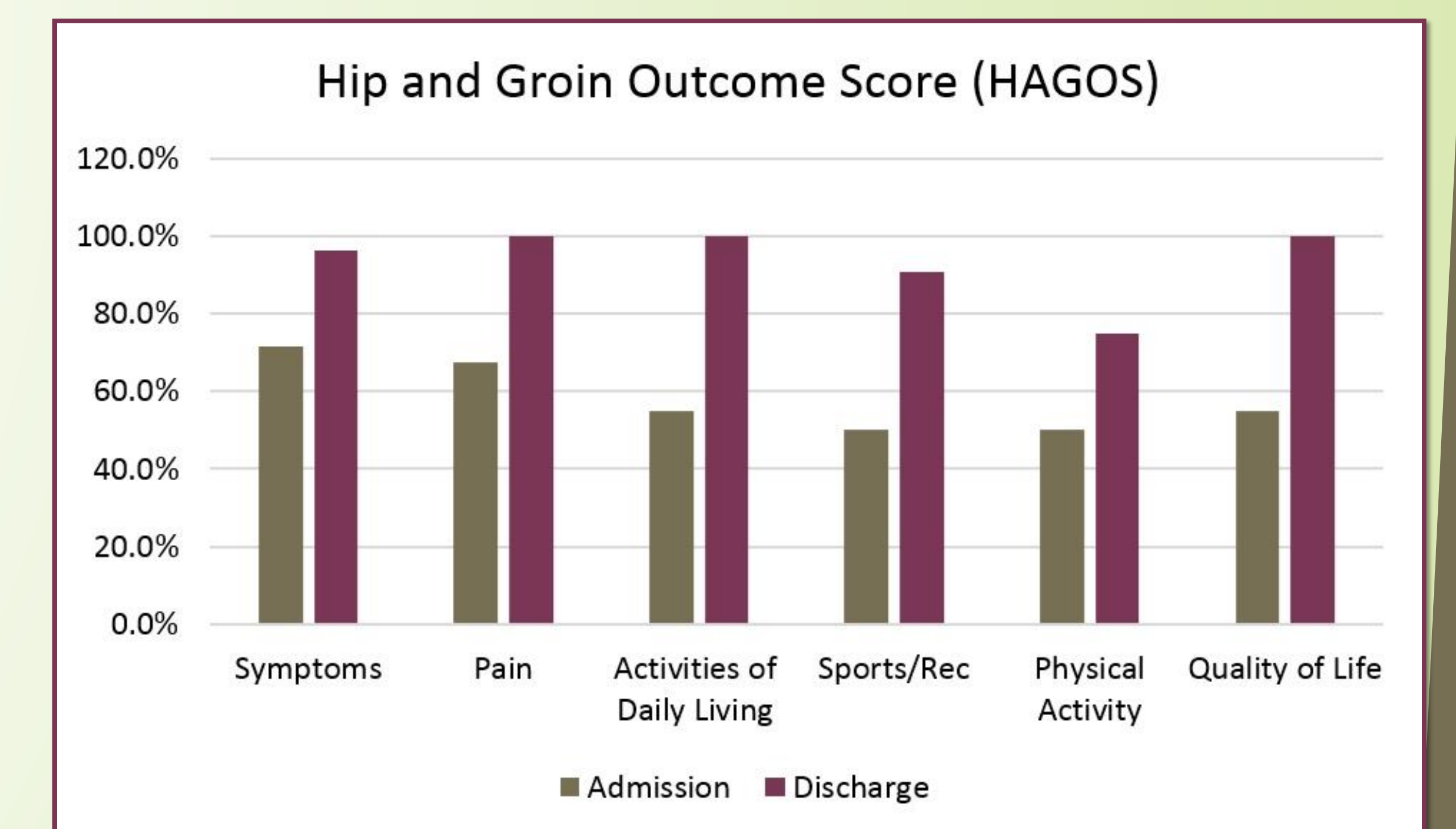
	D2 Flexion	D2 Extension
Hip	Flexion, abduction, IR	Extension, adduction, ER
Knee	Flexion	Extension
Ankle	Dorsiflexion	Plantarflexion

PNF Patterns: D1 and D2 Flexion and Extension as described by O'Sullivan

## Outcomes

After 10 treatments, TS had self-reported gains to lower body dressing, household chores, stair navigation, walking, and sleeping.

- Lower extremity MMT > 4/5 throughout
- Tissue extensibility improved per negative Thomas and Ober's Tests
- Gait: only remaining deficit being a shortened stride length
- SLS balance good; no pain provocation



## Discussion

Interventions supported for youth or athletic populations were successful in treating TS's diagnosis of FAI and surgical intervention could be deferred. By restoring proper movement patterns abnormal forces to the hip were reduced, allowing for the healing process to occur without strict activity modification. Her L5 sacralization had little impact on rehabilitation and low back pain resolved.

The author would like to acknowledge Amy Litterini, PT, DPT for assistance with case report conceptualization and Sylvie Le, PT, DPT for supervision and assistance.