

# Challenges of Female Hip Pathology

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1

## Disclosures

- None

2

## Objectives

- Discuss hip pathology that is commonly seen in females
  - Snapping Hip
  - Pincer Deformity in Femoroacetabular Impingement
  - Ischiofemoral Impingement
  - Borderline Hip Dysplasia

3

## Snapping Hip

### Types

- External (iliotibial band)
- Internal (iliopsoas)
- Intra-articular (loose body, labral tear)
- Occurs in 5-10% of general population
  - Slightly higher prevalence in females
  - Very common in ballet dancers and gymnasts
    - **91%** of ballet dancers experienced snapping hip

4

## External Snapping Hip

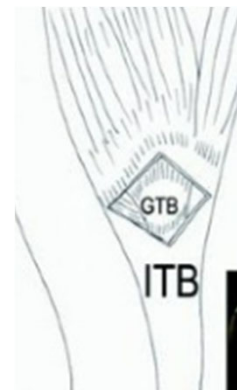
- **Overview**
  - Occurs when hip goes from extension to flexion
  - IT band slides from posterior to anterior over the GT
  - Painless or painful
- **Presentation**
  - Snapping in lateral hip
  - Walking, running. Improves with rest
- **Physical Exam**
  - Lateral pain
  - Patient can often reproduce snapping. Often visible
  - IT band tightness
    - + Ober test
  - Often resolves when put pressure on greater troch and have patient flex hip



5

## Treatment

- **Non-operative**
  - If painless, none needed
  - Physical therapy-hip/core strengthening, ITB/TFL/Glute stretching
  - NSAIDs
  - Steroid injection
- **Operative**
  - release/lengthen ITB
    - IT band lengthening 18 patients with no recurrent snapping
      - *Chu et al. Journal of Hip Preservation Surgery, 2021*

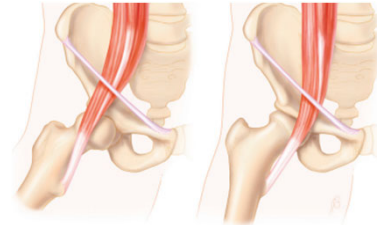


6

## Internal Snapping Hip

- **Overview**

- Most common form of "snapping hip"
- Caused by iliopsoas sliding over the iliopectineal line, femoral head, lesser trochanter, AHS



- **Presentation**

- Pain/snapping/locking in anterior hip
- Worse with flexion-based activities

- **Physical Exam**

- Anterior pain
- hip flexion/abd/ER → Ex/add/IR
  - May be audible



7

## Nonoperative Treatment

- If painless → Observation
- Physical therapy
  - Hip/core strengthening, psoas stretching
- NSAIDs
- US guided iliopsoas bursa injection

8

## Operative Treatment

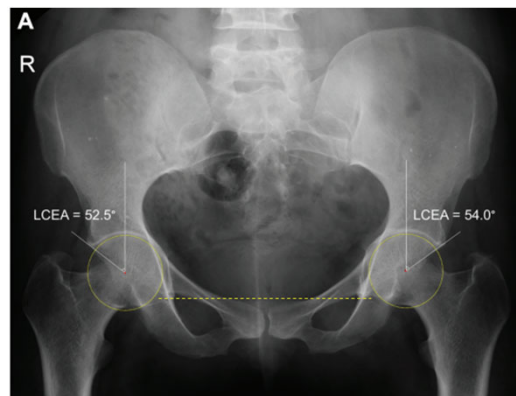
- If fails non-op can release/lengthen iliopsoas
- **Rarely needed**
  - Fairly good results in small studies, some concern for **hip flexion weakness**
    - 18 patient underwent hip scope for FAI/iliopsoas release and were compared to 18 patients in a control group
      - Decreased iliopsoas volume on MRI, decreased hip flexor strength in seated position
      - *Brandenburg et al. AJSM. 2016*
    - Systematic review of 824 patients showed a 93% success rate
      - In studies that reported strength (93 hips), 47 regained full strength and 46 had mild decrease
      - 61/66 hips (92%) had iliopsoas atrophy on MRI
      - *Gouveia et al. AJSM 2021*



9

## FAI-Pincer Impingement

- Acetabular over-coverage with **LCE >39°**
- In patients presenting with pain and FAI
  - 10.1% cam, 17.9% pincer, 72% combined
- More common in females
  - Often presents in 30s-40s
- Different patterns of labral and cartilage damage than cam type FAI
  - Isolated pincer deformity have less cartilage wear
  - Labral bruising
  - Ossified labrum



*Zhou et al. AJSM 2020*

10

# Pincer Impingement

• **History**

- Similar to other forms of FAI
- Deep anterior hip pain
- Can have posterior hip pain
- Pain with flexion-based activities



• **Exam**

- Positive FADIR
- Positive posterior impingement



11

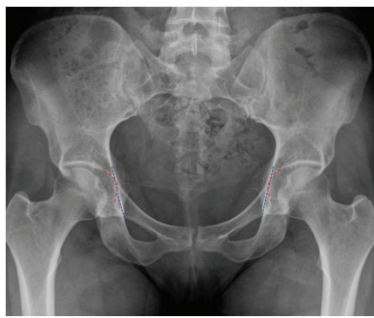
# Imaging

- Prevalence of pincer in asymptomatic hips is 67%
- With or without cam deformity



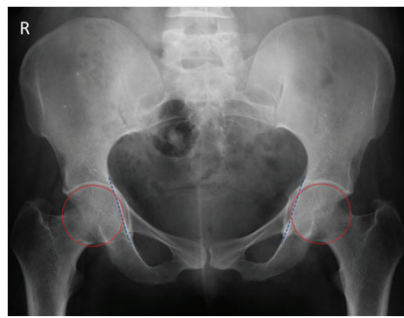
Pincer

Larson et al. Sports Med Arthrosc Rev. 2021



Coxa Profunda

Zhou et al AJSM 2020



Protrusio

12

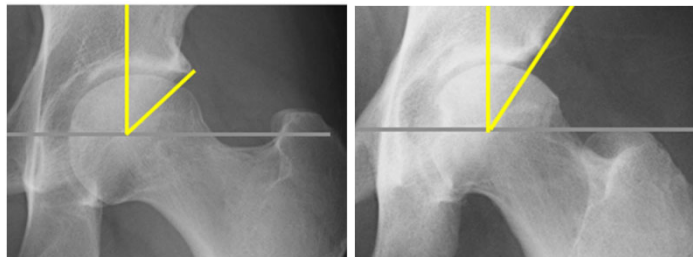
## Treatment

### • Nonoperative

- Activity Modification
- NSAIDs
- PT-hip and core strengthening
- Intra-articular injections

### • Operative

- Hip arthroscopy
- Acetabular rim resection



Preop LCE 40°

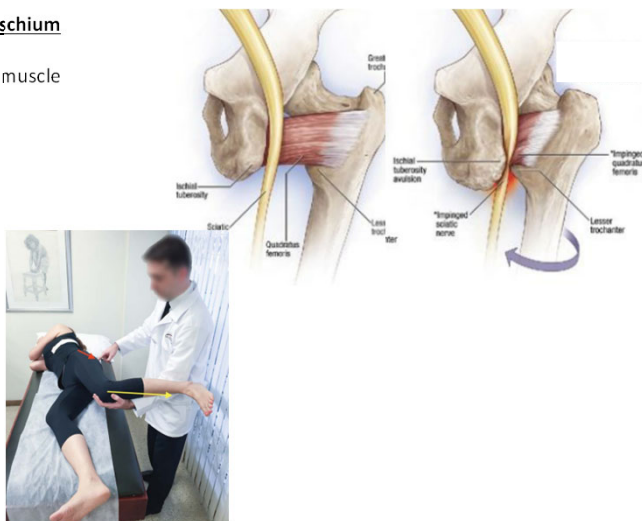
Postop LCE 33°

*Philippon MJ, et al. Arthroscopy 2010*

13

## Ischiofemoral Impingement

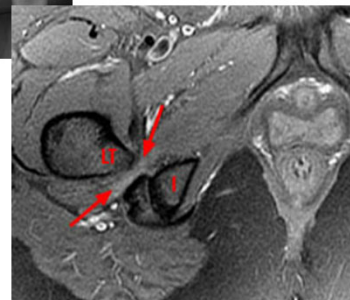
- Narrowing of the space between the **lesser trochanter and ischium**
- Causes compression/impingement of the quadratus femoris muscle
- More common in females
  - May be due to **increased femoral anteversion**
- History
  - Buttock and/or groin pain
  - Pain with hip extension, adduction, external rotation
- Exam
  - Gait- pain when affected hip in extension
  - Tenderness ischiofemoral space
  - (+) IFI test (hip extension in neutral or adduction)



14

## Ischiofemoral Impingement

- Imaging
  - Radiographs
    - May be normal
    - medialization of the femoral head in the acetabulum, increased neck-shaft angle,
  - MRI- normal ischiofemoral space is 20mm
    - **Decreased ischiofemoral space**
    - Edema in the **quadratus femoris**



15

## Treatment

- Non-operative
  - Physical therapy
  - Avoid hip hyperextension, adduction
  - NSAIDs
  - Injections
- Operative
  - Endoscopic lesser trochanterplasty

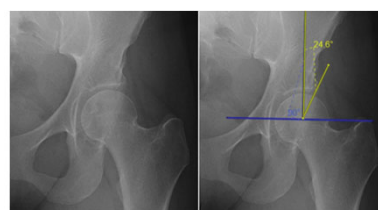


16



## Borderline Hip Dysplasia

- **Definition- Developmental Hip Dysplasia (DHD)**
  - Under-coverage of the acetabulum on the femoral head
  - Lateral center edge angle  $<20^\circ$
  - 2-4x higher rate in female
- **Borderline Hip Dysplasia (BHD)**
  - Mild under-coverage
  - LCE  $20-25^\circ$
  - Slightly higher prevalence in females
    - Prevalence in general population 19.8%
    - Slightly higher prevalence in females (23.7% vs 20.3%)
    - Nepple et al. *OJSM*. 2022
  - Can lead to:
    - labral hypertrophy or damage
    - chondral damage
    - premature osteoarthritis



Josh Harris. *Clin Sports Med* 2021

17

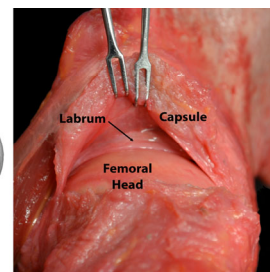
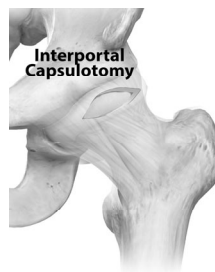
## Presentation

- **History**
  - Similar to patients presenting with FAI or hip dysplasia
  - Anterior hip pain
  - Pain with flexion and rotational activities
  - Pain with prolonged sitting
  - Can have instability
- **Exam**
  - + FADIR
  - + FABER
  - Can have + apprehension test

18

## Treatment

- **Non-operative**
  - Activity modification, NSAIDs, PT- hip and core strengthening
- **Operative**
  - Hip arthroscopy
    - Must be careful not to make the hip unstable
    - Important to repair the labrum to recreate the suction seal
    - Important to repair/plicate the capsule
  - Hip arthroscopy + osteotomy
    - Will discuss in hip section today



19

## Borderline Hip Dysplasia

- **Outcomes**
  - Systematic review- 13 studies
    - 505 patients (67% female) with BHD underwent hip arthroscopy alone
    - All but one study reported a significant improvement in PROs
    - Rate of revision scope 7.5%
    - Rate of conversion to THA 4.0%
    - *Westermann et al. Iowa Ortho Journal. 2018*

20

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21

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22

Thank You!

Questions?

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