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## **Diagnosis and rehabilitation of multiple hip pathologies in a Division I football player: Level 4 Rare Events Case Study**

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# Multiple Hip Pathologies in a Division I Football Player: A Case Report

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## BACKGROUND

- 21 years old
- Caucasian
- Linebacker; NCAA Division I Football
- 188cm tall; weight 102kg
- Left hip
- Insidious onset
- Pain first experienced during Fall Camp (August)
- Reported injury to AT staff in November
- Clinical Examination Findings:
  - Pain over anterior hip and ASIS
  - Pain level 3/10 with activity
  - ROM was normal
  - Strength was normal
  - Initial diagnosis – hip flexor strain
- Initial Interventions:
  - Groin spica wrap
  - Cryotherapy
  - Pharmacology
  - Modification of strength exercises

Exercise	Sets	Repetitions
Lateral hip glides	1	10 with 10 second holds
Hip distraction	1	10 with 10 second holds
Banded bridge march	1	20
Banded squat	2	10
Adductor ball squeeze	1	10 with 10 second holds
Banded monster walks		
Lateral	2	10 steps each
Backward		
Banded clams	1	60 seconds
Passive range of motion		
Flexion		
Abduction	1	10 each
Internal rotation		
External rotation		

## Differential Diagnosis

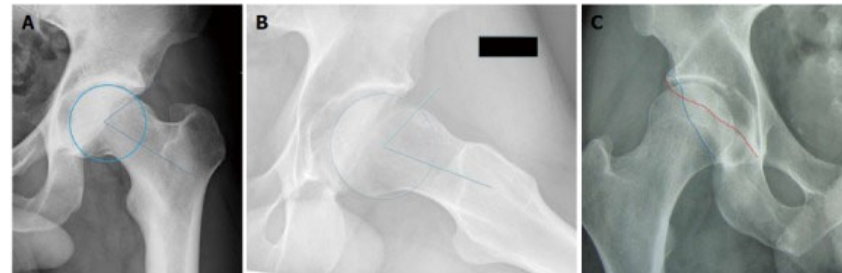
- Hip Flexor strain
- Osteitis pubis
- Avulsion fracture of ASIS

## PLAN of CARE

- **Weeks 1-2:** Referral to physician; increased pain with football activities; confirmed initial diagnosis
- **Weeks 3-4:** Re-check with physician; radiographs showed mild cam lesion, mild osteitis pubis; small avulsion fracture of ASIS; continue activity modifications; pharmacology; 50% decrease in practice drills
- **Weeks 5-10:** Football ended; 3-week break; no change; MRI-arthrogram findings – FAI, labral tear, hip flexor strain, and sports hernia; US guided injection (6 mL of 0.5% ropivacaine) for FAI
- **Weeks 11-14:** Injection in pubic symphysis (ropivacaine and Kenalog); symptoms continued; referral to hip specialist and sports hernia specialist; surgical intervention; repair of sports hernia first (2cm long tear); acetabuloplasty followed by labral repair (3:00 position extending to 12:30 position) followed by femoroplasty
- **Week 15-35:** followed surgeons protocols for each phase of intervention plan; Modified Harris Hip Score: 2 weeks post-operative 55; 4 weeks post-operative 78.1; 12 weeks post-operative 95.7; 24 weeks post-operative 100; patient returned to football activities 20 weeks post-operative

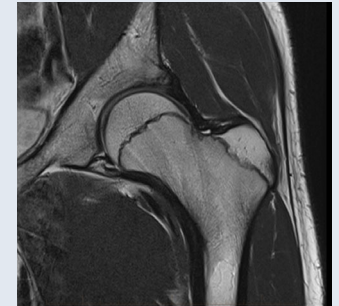
## UNIQUENESS

- FAI, labral tear, hip flexor strain and sports hernia are not common co-morbidities - 12% prevalence rate of conditions occurring together
- MOI for the injuries are opposite
- No ROM deficits – proposed as a MOI for co-morbidities
- MRI diagnosed each condition
  - US and CT preferred diagnostic for sports hernia
  - MRI and x-ray preferred for FAI and labral tears



## CONCLUSION

- Final diagnosis came 2 months after initial symptom report
- Overlapping symptomatology made diagnosis difficult; no ROM deficits
- Non-traditional diagnostic imaging
- Patient underwent repair of FAI, labrum, and sports hernia
- Completed post-operative interventions and returned to sport 20 weeks post-op



## REFERENCES

- Munegato D et al. Sports hernia and femoroacetabular impingement in athletes: A systematic review. *World J Clinical Cases*. 2015;3(9):823-830.
- Leunig M, Beaulé P, Ganz R. The concept of femoroacetabular impingement. *Clin Orthop Relat Res*. 2008(467):616-622.
- Farber A, Wilckens J. Sports hernia: Diagnosis and therapeutic approach. *J Am Acad Orthop Sur*. 2007;15(8):507-514.
- Aprato A, Jayasekera N, Villar RN. Does the Modified Harris Hip Score reflect patient satisfaction after hip arthroscopy? *Am J Sport Med*. 2012(40):2557-2560.



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# Thank you

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