



Management of Hip Injuries in the NFL

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Biography




Dr. Salvo is double board certified in orthopaedic surgery and sports medicine by the American Board of Orthopaedic Surgeons. He specializes in sports injuries, knee ligament (ACL & PCL) reconstructions, meniscus tears, shoulder instability, rotator cuff repairs, and hip arthroscopy. As Director of the Hip Arthroscopy program at Rothman Orthopaedic Institute, Dr. Salvo is one of the region's leaders in hip arthroscopy & hip preservation, particularly in athletes. He is a team physician for the Philadelphia Eagles as well as the Philadelphia Flyers, and a consultant for the Philadelphia Phillies. He is an Associate Professor of Orthopaedic Surgery at The Sydney Kimmel Medical College at Thomas Jefferson University Hospital. He is an active member of several subspecialty societies, including the American Academy of Orthopaedic Surgeons, the Arthroscopy Association of North America, the American Orthopaedic Society for Sports Medicine, and the International Society for Hip Arthroscopy.

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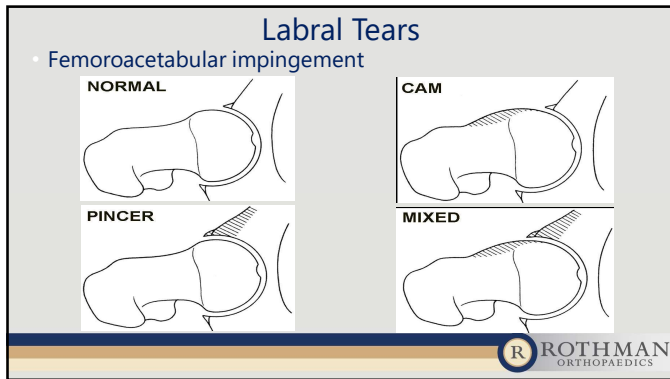
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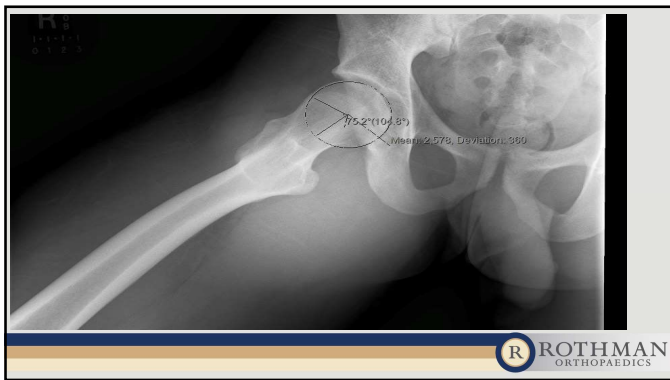
Disclosures: Consultant, Stryker Endoscopy

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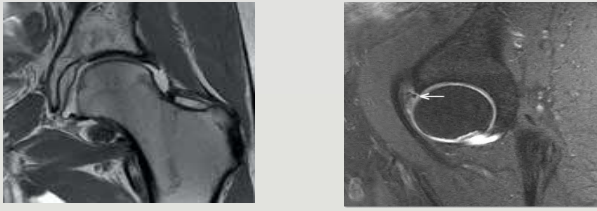


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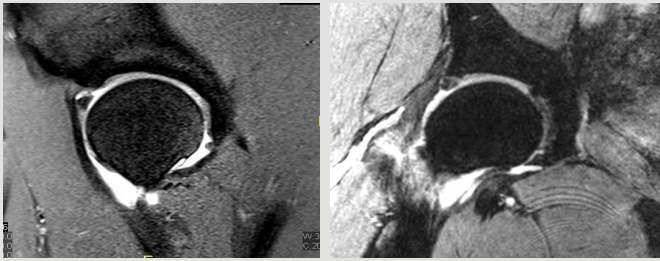
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MRI



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MRI



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Outcomes

■ **The demographic characteristics of high-level and recreational athletes undergoing hip arthroscopy for femoroacetabular impingement: a sports-specific analysis**

- Nawabi DH, Bedi A, Tibor LM, Megennis E, Kelly BT *Arthroscopy* 2014. March 30(3): 398-405
- 228 high level and 334 recreational athletes
- High level athletes younger, male, and more frequently bilateral surgery
- Most common high level sports soccer, hockey, football

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Outcomes

■ Arthroscopy Up to Date: Hip Femoroacetabular Impingement

- Khan M, Habib A, de Sa D, Larson CM, Kelly, BT, Bhandari M, Ayeni OR, Bedi A *Arthroscopy* 2016 Jan 32 (1): 177-89
 - Comprehensive review and summary of articles published in Arthroscopy and AJSM for hip arthroscopy and FAI
 - 60 studies in Arthroscopy and 44 in AJSM
 - 71% Arthroscopy and 20% AJSM Level IV studies
 - 81% used mHHS with improvement from 60 to 80 at midterm and 87 up to 24 months
 - Arthroscopic intervention resulted in improvement in patient function in short-term (< 6 months) and mid-term (<24 months) for patients with symptomatic FAI and no degenerative changes



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Outcomes

■ The Importance of Comprehensive CAM Correction: Radiographic Parameters Are Predictive of Patient-Reported Outcomes at 2 Years After Hip Arthroscopy

- Landsdown DA, Kunze K, Ukwani G, Waterman BR, Nho SJ *AJSM* 2018
- Radiographic measurements are predictors of 2 yr clinical outcomes
- Femoral side measures were strongest independent predictors of outcomes



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Outcomes

■ Return to sport after hip surgery for femoroacetabular impingement: a systematic review

- Castarelli NC, Leunig M, Maffiuletti NA, Bizzini M
- *Br J Sports Med* 2015;49:819-824
- 18 case series Level IV evidence
- 87% return to sport and 82% at same level
- Trend for professional return to same level vs collegiate and recreational athlete



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Outcomes

■ Femoroacetabular Impingement in Professional Football Players: Return to Play and Predictors of Career Length after Hip Arthroscopy

- Menge TJ, Bhatia S, McNamara SK, Briggie KK, Philippon MJ
- *AJSM* July, 2017
- Hip arthroscopy for FAI in 51 players (60 hips)
- 87% able to participate in at least one professional game
- Average 38 games, 3.2 seasons
- Lineman less likely to RTP



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Outcomes

■ Predictors of Length of Career After Hip Arthroscopy for Femoroacetabular Impingement in Professional Hockey Players

- Menge TJ, Briggs KK, Philippon MJ
- *AJSM* July, 2016
- Hip arthroscopy for FAI in 60 players (69 hips)
- 40 (67%) continued to play professional hockey at minimum 5 years
- Negative predictors: Age, duration of symptoms



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Hip Injuries in the NFL

■ Hip & groin injuries account for 5-7% of all injuries in NFL (Feely et al *AJSM* 2008)

- 3% hip injuries and majority muscle strains
- Defensive backs and WR most hip injuries
- OL lost most time (>18 days)



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Hip Injuries in the NFL

- Blocking most common mechanism
- Contusions due to direct contact
- Strains noncontact



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Hip Injuries in the NFL

- Proximal rectus femoris ruptures typically treated non-operatively
 - RTP 3-10 wks
- Adductor longus typically treated non-operatively
 - RTP 6 wks non-surgical, 12 wks surgical



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Hip Injuries in the NFL

- Imaging studies at NFL combine symptomatic (attendees and retired players)
 - High radiographic incidence of FAI
 - Labral tears 89%
 - Chondral lesions 98%
 - LT tears 81%



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Hip Injuries in the NFL

- Increased alpha angle best imaging study as predictor of pain
- Hip arthroscopy for FAI and labral repair
 - RTP 85-90%
 - Linemen 6 x less likely RTP



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Hip Injuries in the NFL

- Outcomes of Arthroscopic FAI Surgery in the National Football League (Nwachukwu et al AJSM 2018)
 - 40 players, 48 hips (8 staged b/l)
 - RTP and stats from publically available NFL player stats



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Hip Injuries in the NFL

- Majority offensive (24), OL most common (11)
- 48 labral repairs
- 42 femoroplasty
- 10 acetabuloplasty



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Hip Injuries in the NFL

- 37 RTP mean 6 months
- 9.5 games post-op season (11 pre-op)
- Played mean 3.3 ± 1.5 seasons post-op (CONTROL GROUP 2.5 ± 1.5 seasons)



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Hip Injuries in the NFL

- Offensive power rating (OPR)
 - $[\text{total yards}/10] + [\text{total touchdowns} \times 6]$
 - Pre-injury 40.2 post-injury 32.3
- Defensive power rating (DPR)
 - $\text{total tackles} + [\text{total sacks} \times 2] + [\text{total interceptions} \times 2]$
 - Pre-injury 49.6 post-injury 36.4
- Not statistically different post-injury or compared to control group



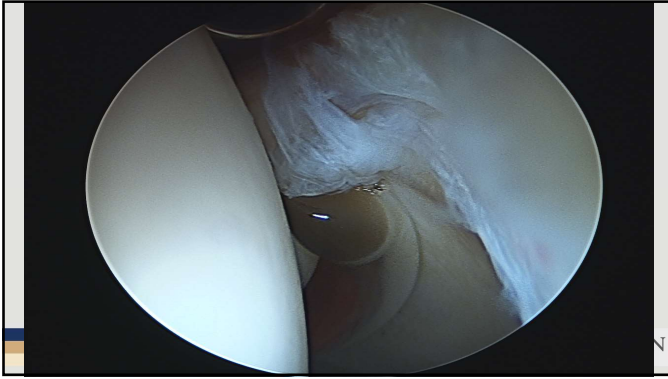
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Hip Injuries in the NFL

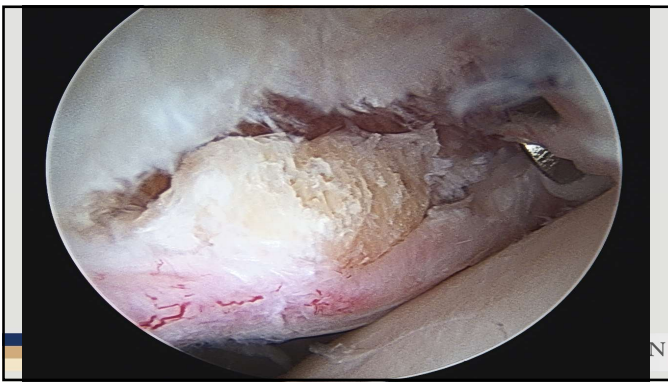
- **Core muscle surgery (CMI)**
 - Did not effect players draft status or NFL performance
 - 95% able to RTP with no statistical difference in performance but 6 month shorter career (INTERNET STUDY)



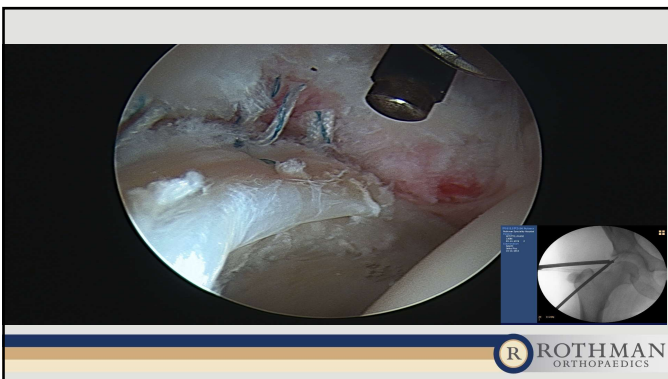
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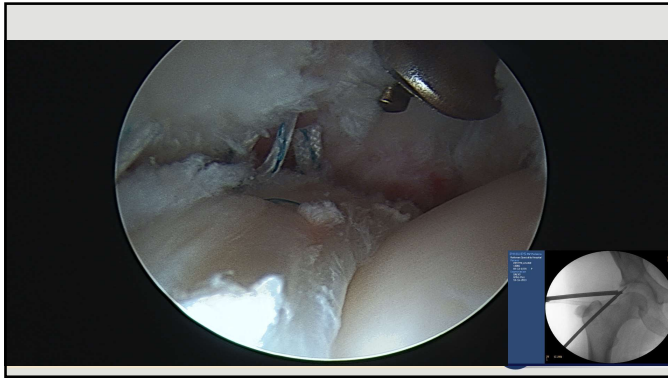
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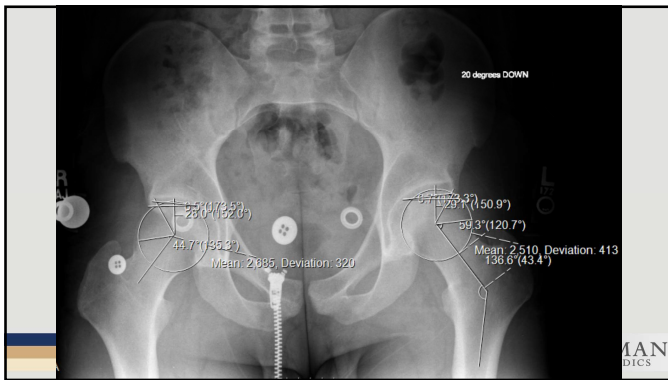
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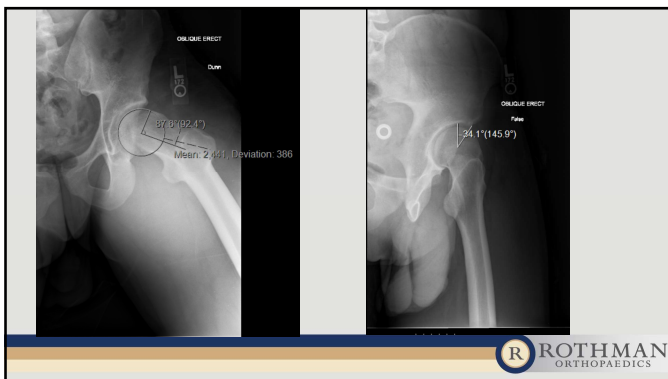
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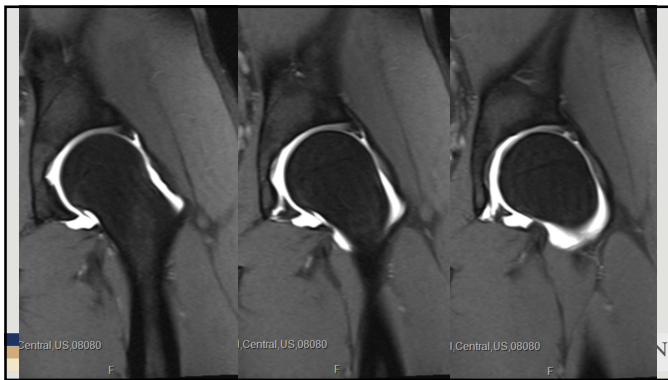
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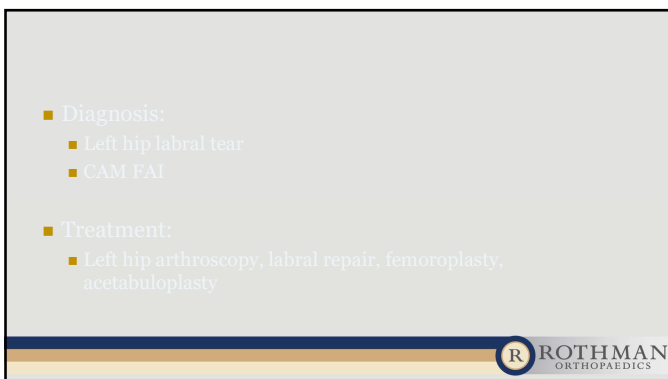
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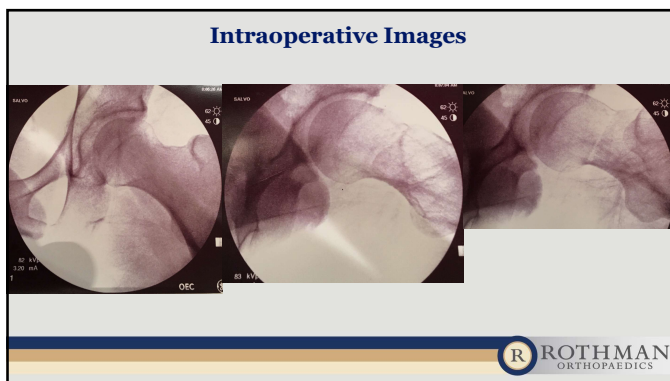
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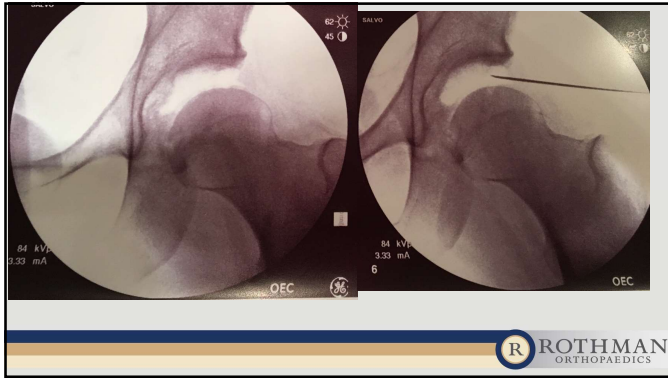
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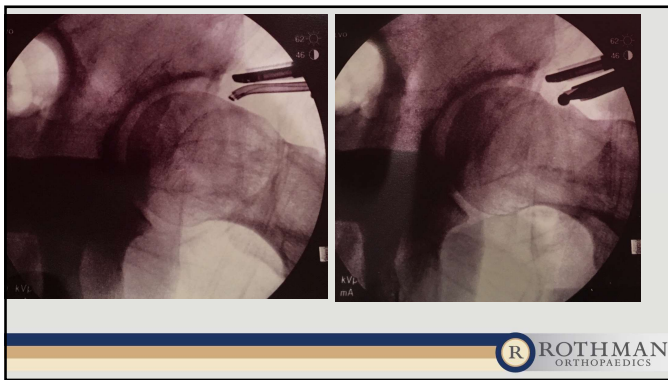
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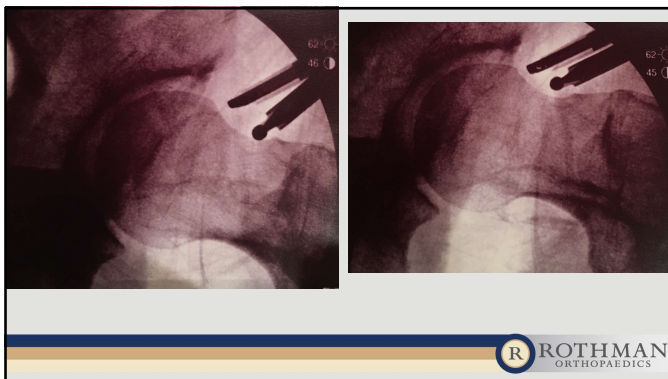
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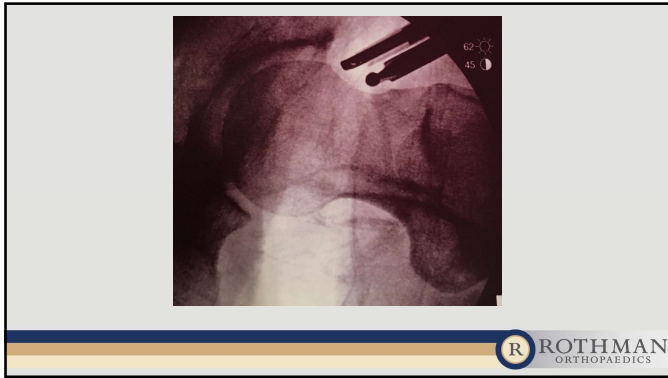
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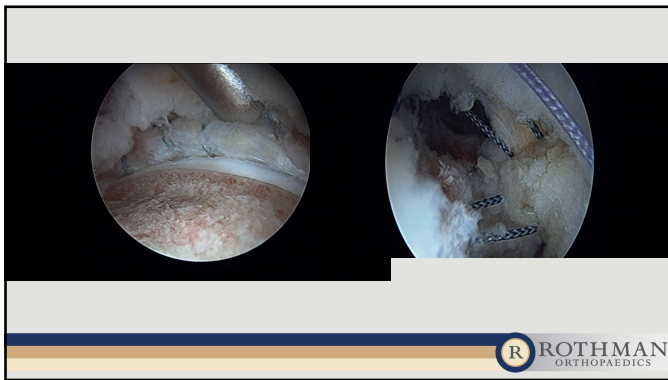
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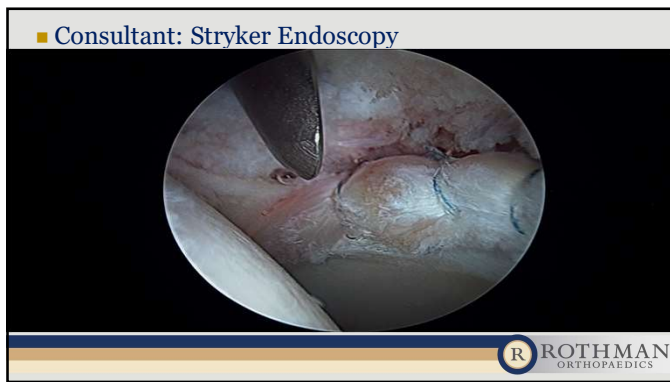
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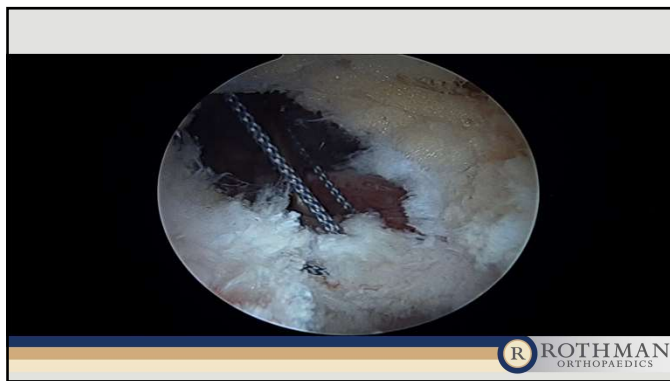
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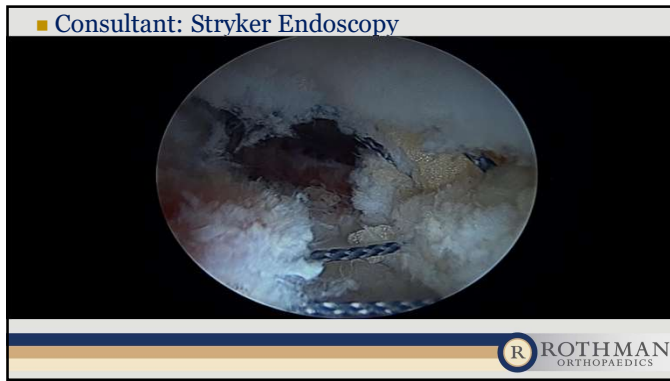
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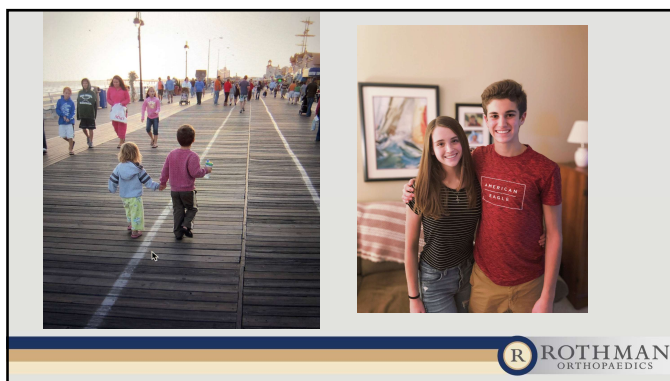
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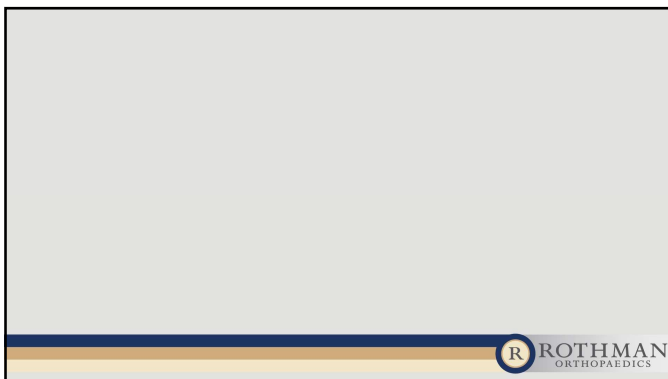
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