

Results of Arthroscopic Labral Reconstruction of the Hip in Elite Athletes

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Disclosures

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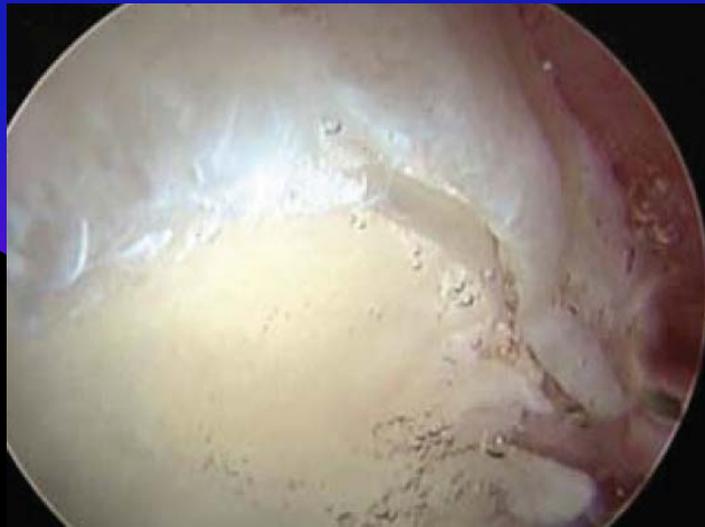
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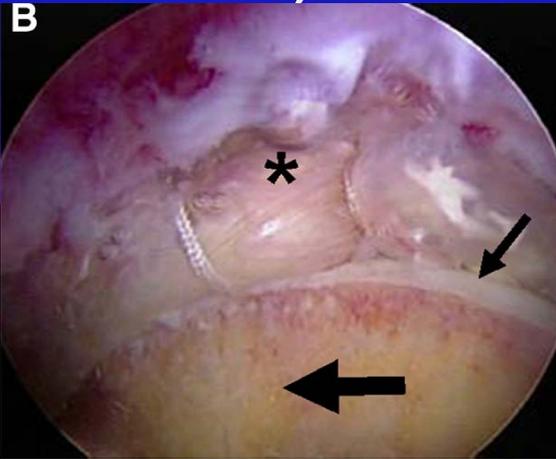
Background

- **Clinical studies** have demonstrated better results with labral repair than labral debridement (Philippon JBJS 2009, Espinosa JBJS 2006)
- **Biomechanical studies** have shown that the labrum provides a seal creating a hydrostatic fluid pressure
 - Enhances lubrication and limits the rate of cartilage layer consolidation (Ferguson, J Biomech 2003)
 - The patient with an irreparable labrum presents a difficult clinical challenge



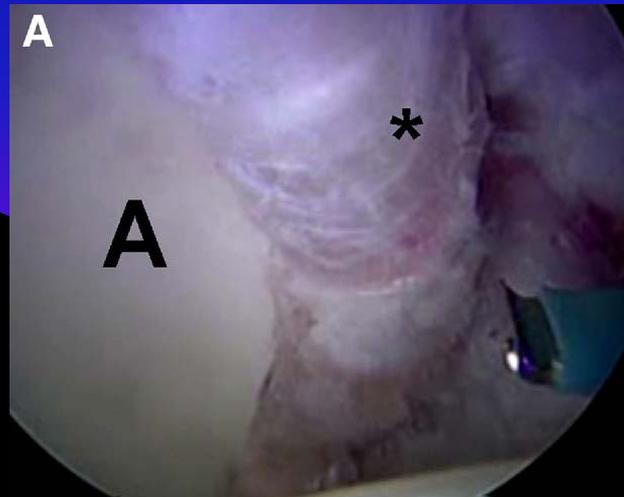
Background

- To address labral deficiency, reconstruction has been reported
 1. Open technique utilizing *ligamentum teres autograft* (Sierra, CORR 2009)
 2. Arthroscopic technique using *iliotibial (IT) band autograft* (Philippon, Arthroscopy 2010)
 - 47 patients with a min 1 year follow-up
 - Improvement in mean modified Harris hip score (MHHS) (62 -> 85)
 - Mean patient satisfaction of 8/10
 3. Arthroscopic technique using *gracilis autograft* (Matsuda, AANA 2010)



Purpose

- To report the clinical outcomes of arthroscopic labral reconstruction of the hip in elite athletes in addition to return to sport
- Hypothesis: Arthroscopic IT band labral reconstruction of the hip in high level athletes yields good clinical outcomes, allowing patients to return to a similar level of play



Methods

- Retrospective review of a prospective registry
- **Inclusion criteria:** an “elite” athlete having undergone an IT band arthroscopic labral reconstruction from 8/2005 to 11/2010 (with min 1 year follow-up)
 - “Elite” defined as Olympic-level, on a recognized professional team, or whose sport is their primary job and source of income
- **Exclusion criteria:**
 - < 18 years old
 - Dysplasia (Center edge angle < 20° or Sharp’s >42°)
 - Previous acetabular or femoral osteotomy
- **Return to play:**
 - Defined as return to participation in a patient’s individual sport
 - Further analysis based on sport specific statistics compared to pre-injury stats



Results

- 25 elite athletes on initial query
 - 1 excluded for previous peri-acetabular osteotomy, 3 excluded for dysplasia:
 - 21 total included (all male)
 - 7 soccer
 - 5 hockey
 - 4 football
 - 2 skiing
 - 1 baseball
 - 1 basketball
 - 1 ice skating
 - 2 bilateral reconstructions = 23 hips



- Average age 28 years (range 19-41)



Results

Clinical Outcomes

	<u>Pre-op</u>	<u>Post-op</u>	<u>Mean Δ</u>	<u>95% CI</u>	<u>p-value</u>
MHHS	67	84	16.4	2 to 30	0.026
HOS ADL	77	85	8.6	0 to 17	0.048
HOS Sport	56	77	20.8	6 to 35	0.009
SF-PCS	44	51	7.0	2 to 11	0.008
SF-MCS	49	54	5.0	0 to 11	0.068



Results

Clinical Outcomes

- Overall mean patient satisfaction 8/10 (range 1-10)
- No significant difference in patients with vs. without *microfracture*
- No significant difference in patients with vs. without *previous surgery*



Results

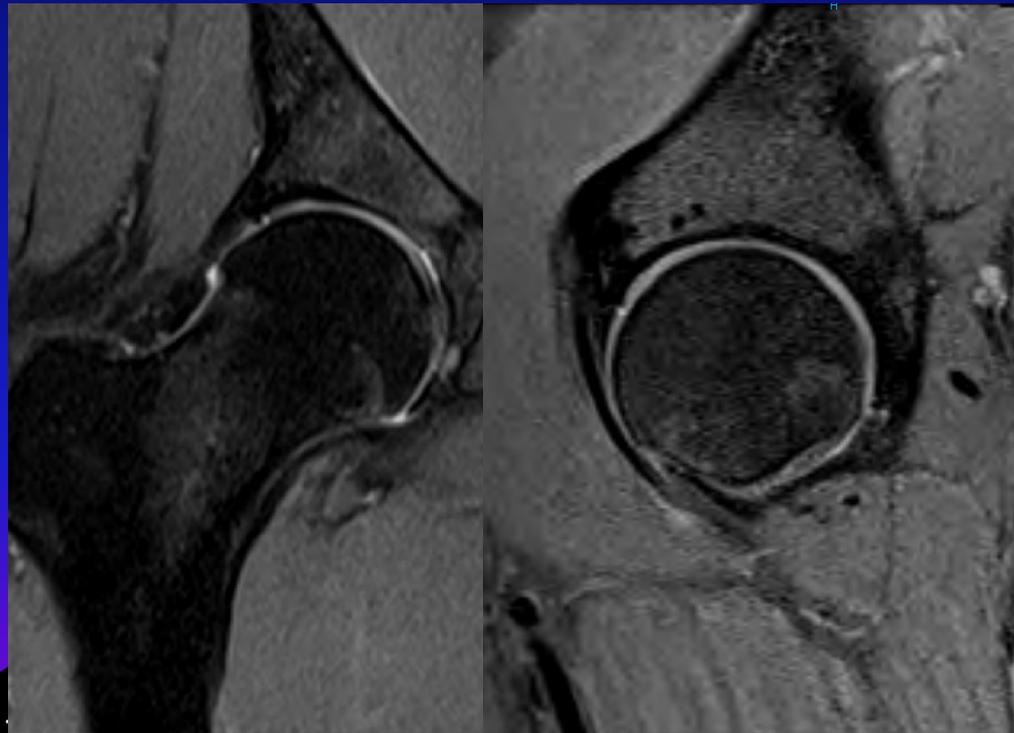
- **Return to play**
 - **18/21 (86%)** returned to sports
 - **15/21 (76%)** returned to previous level of play based on sport specific statistics
 - **1/21 (5%)** returned to professional level play, but with lower statistics than pre-injury
 - **1/21 (5%)** returned to practice or minor league play but did not have any confirmable return to previous level of play
 - **3/21 (14%)** did not return to sports
 - **2/21 (9.5%)** progressed to arthroplasty
 - **1/21 (4.8)** retired from professional sports shortly after surgery



Results

Graft Integration:

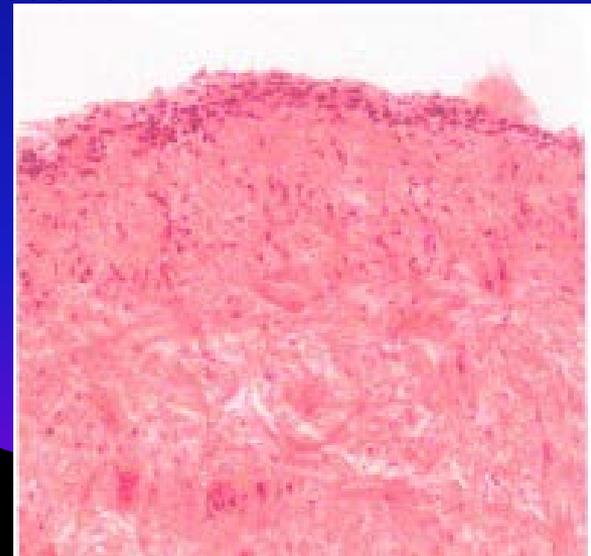
- MRI 25 months post reconstruction:



Pathology:

25 months post reconstruction

1. Histologically viable fibrovascular connective tissue with focal benign synovial type lining
2. No infection or foreign body reaction



Conclusions

1. Arthroscopic labral reconstruction of the hip using an ipsilateral iliotibial band autograft yields good short term clinical outcomes, high patient satisfaction, and a satisfactory level of return to play in a select group of elite athletes
2. Graft integration is seen *arthroscopically, on MRI, and histologically*
3. The procedure should be considered for athletes presenting with a hypoplastic or irreparable labrum
 - Patients with < 2mm joint space have a high failure rate



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