Arthroscopic Circumferential Acetabular Labral Reconstruction using Fascia Lata Allograft; One-Year Patient-Reported Outcomes

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Disclosure

- I have the following financial relationships to disclose:
  - Consultant: Arthrex, Stryker

Background

- As discussed in previous talk, several studies have shown improved biomechanical stability, decreased friction and decreased load to articular cartilage with intact labrum or reconstruction when compared with resection.

- Promising clinical results in small series—particularly in patients without osteoarthritis

Background

- Personal experience
  - Disappointed with my own non-reconstruction revision hip experience in practice
  - Transitioned to doing more primary reconstructions

Background

- Personal experience
  - Technique evolved substantially with longer and longer grafts showing better and better results
    - More stability
    - Elimination of pain generators
    - No weak junction points
  - January 2014 developed a robust infrastructure for data collection on current technique
  - Current study reflects those patients available for 1 yr follow-up at time of abstract deadline

Labral Recon Technique

Materials and Methods

- Retrospective review of prospectively collected data
- Single surgeon

Materials and Methods

- 46 patients consecutive patients undergoing circumferential labral reconstruction (RECON)
  - Moderate to severe labral damage
  - Included patients with
    - Segmental defects
      - Failed repairs
      - Failed debridements
    - Severe pincer deformities
    - Ossified labra
    - Intercalated os acetabuli/acetabular rim fractures
- 61 patients consecutive patients undergoing labral repair (REPAIR)
  - Minimal to moderate labral damage

Materials and Methods

- Intraobserver reliability assessment performed to assess accuracy of complexity of tear determination
- Groups compared using two-tailed, unequal sample size and unequal variance independent sample Student's t-test with regards to continuous demographic and 1-year outcome data
- Pearson's chi-squared test employed for categorical data
- P-value of less than 0.05 determined to be statistically significant

Results

- Follow-up obtained for 41 of 44 eligible RECON patients, for 91% follow-up rate
  - One RECON patient excluded after subsequent THA
  - One RECON patient excluded after core muscle injury procedure
- Follow-up obtained for 51 of 60 eligible REPAIR patients for 85% follow-up rate
  - One REPAIR patient excluded after subsequent THA

Results

- Severity of labral damage evaluated in separate sidearm study of 20 patient videos not involved in current study
- Videos were evaluated by surgeon one week apart
- Kappa value = 0.66 indicating moderately good reliability

Cohort Comparison

Table 1: Patient Characteristics			
	Repairs	**Reconstructions**	**p-value**
Age, μ ± Std. Err	30.36 ± 1.60	42.55 ± 1.94	2.82E-6*
Sex, n			0.326†
Male	19	11	
Female	42	29	
Procedure, n			0.0001†
Primary	49	26	
Revision	2	14	
Complexity of Tear, n			2.96E-15 †
Mild	28	0	
Moderate	23	8	
Severe	0	32	

* = Independent sample student's t-test

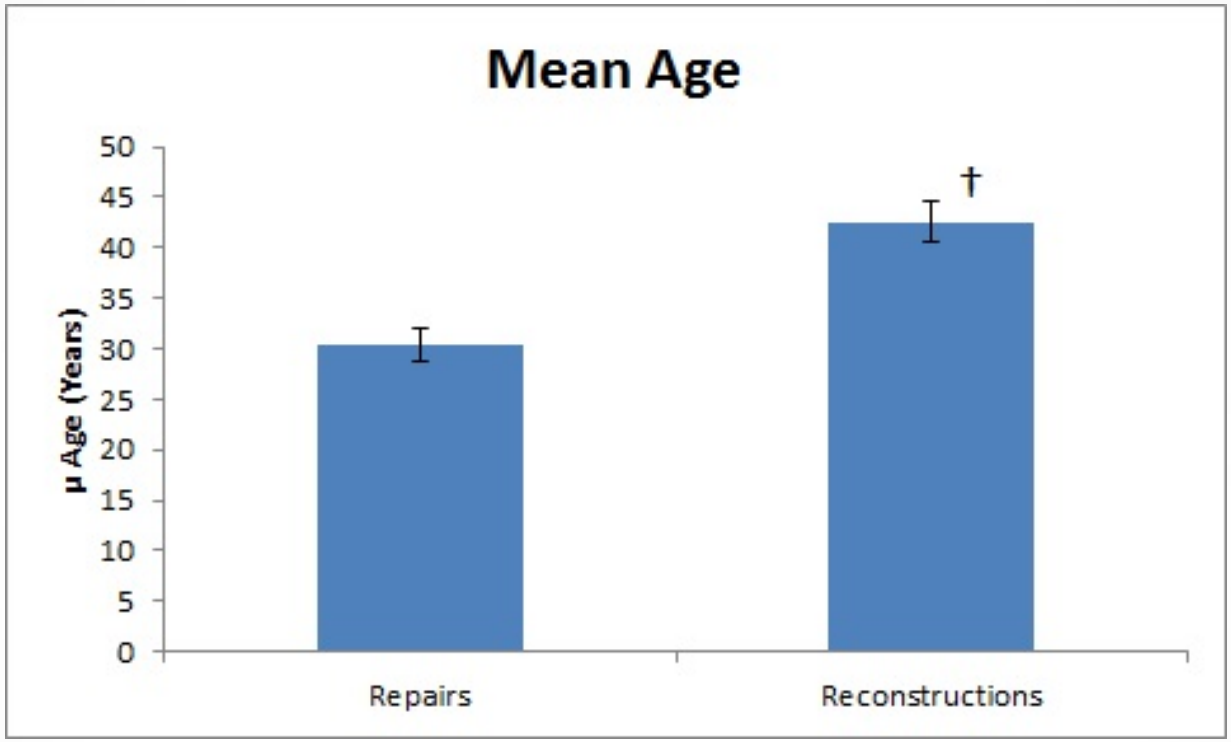
† = Pearson's chi-squared test

Cohort Comparison

Table 5. Procedural Breakdown

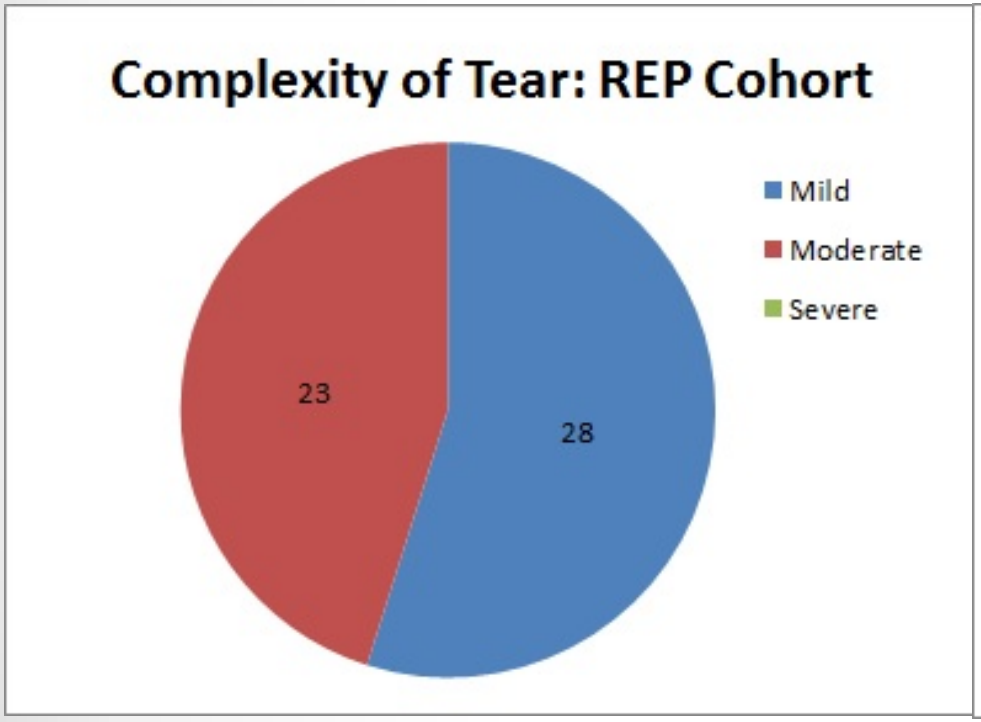
	CAM Osteoplasty n (%)	Pincer Osteoplasty n (%)	Excision Acetabular Rim Fx n (%)	Gluteus Medius Repair n (%)	Osteoplasty AIIS n (%)	Osteoplasty Lesser Trochanter n (%)	Osteoplasty Fovea n (%)
CLR	38 (95)	28 (70)	7 (17.5)	1 (2.5)	9 (22.5)	1 (2.5)	1 (2.5)
REP	39 (76.5)	19 (37.3)	1 (2)	1 (2)	2 (4)	1 (2)	0 (0)
p-value	0.015	0.002	0.009	0.862	0.007	0.862	0.256

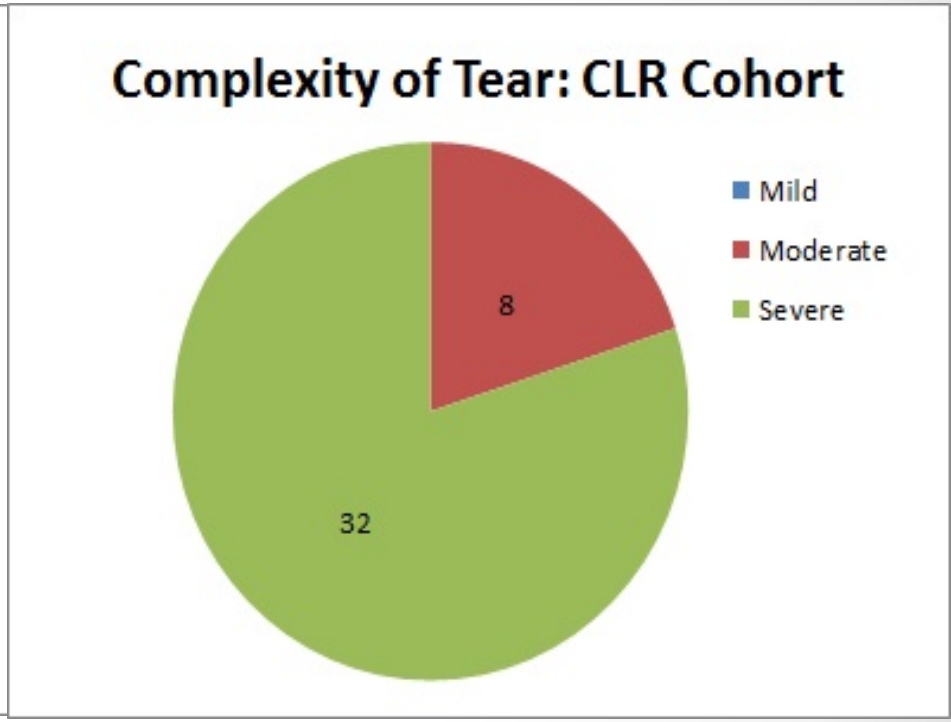
Cohort Comparison



- Mean age in RECON cohort (42.55 yrs) was significantly higher than in REPAIR cohort (30.36 yrs) (P=0.0000028)

Cohort Comparison





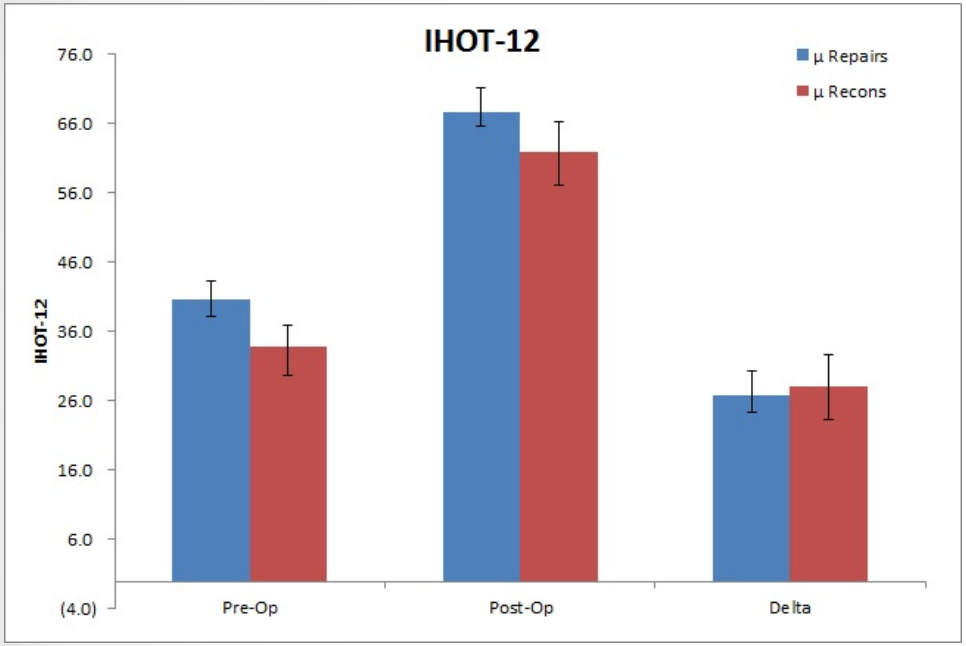
Results

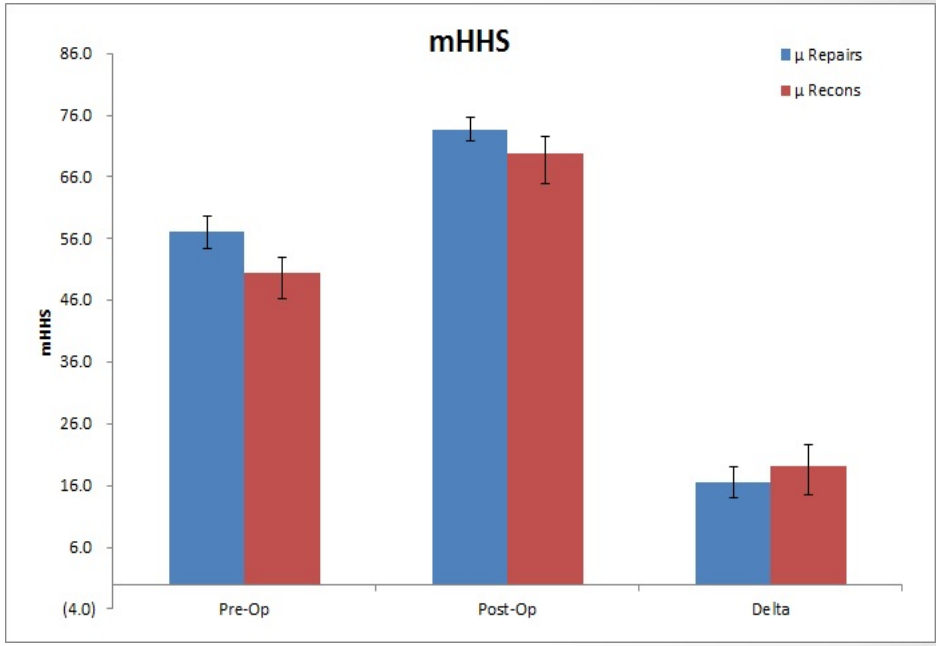
Table 2. Outcomes at 1-Year Follow-up

Outcome Measure	ΔRepairs μ ± Std Err	ΔReconstructions μ ± Std Err	p-value	power
Pain VAS	-1.91 ± 0.35	-2.74 ± 0.39	0.116	0.651
HOS-ADL	16.84 ± 2.36	22.50 ± 4.23	0.302	0.766
HOS-SSS	28.71 ± 4.25	27.19 ± 4.84	0.813	0.944
mHHS	16.59 ± 2.51	19.24 ± 3.31	0.523	0.902
IHOT-12	26.81 ± 3.44	28.09 ± 4.52	0.822	0.944
SF-12	9.52 ± 1.49	9.03 ± 1.71	0.828	0.945

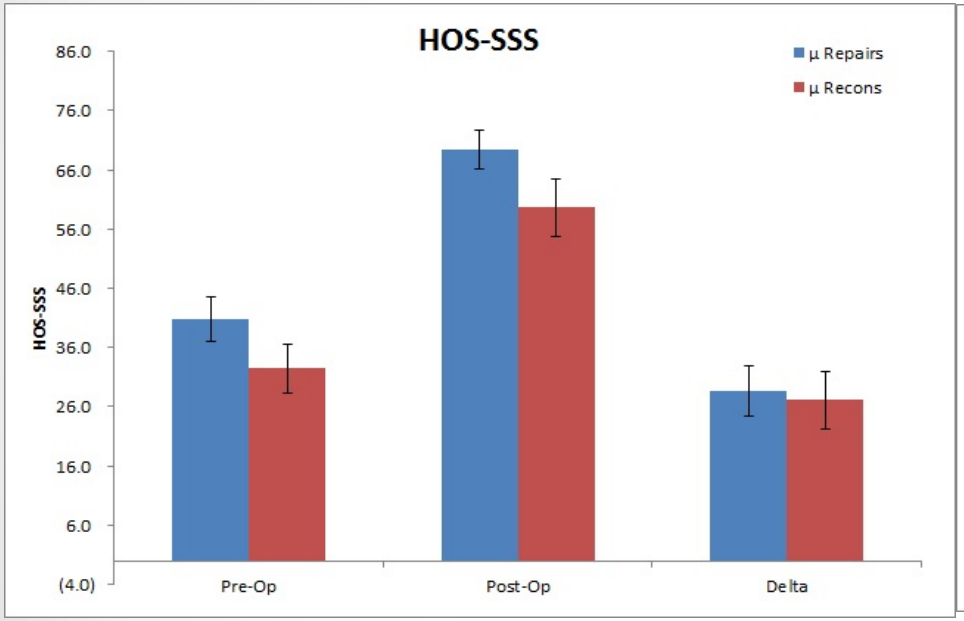
- No significant difference between RECON and REPAIR for HOS-SSS, mHHS, IHOT-12, or SF-12 (Power > 0.9)
- RECON cohort showed improved outcomes for Pain VAS, HOS-ADL, mHHS, and IHOT-12 when compared to REPAIR cohort

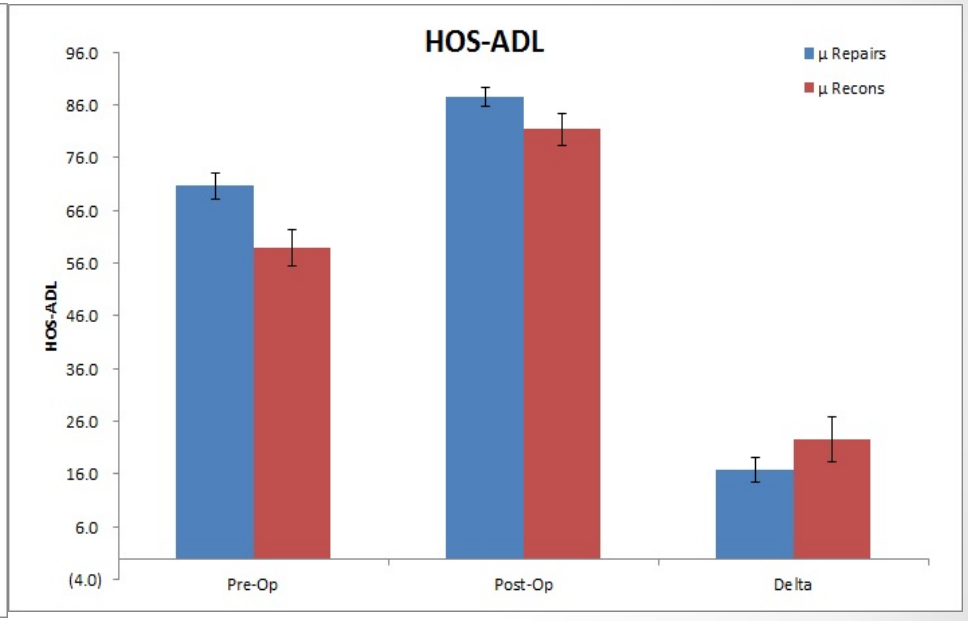
Results


IHOT-12
μ Repairs
μ Recons
76.0
66.0
56.0
46.0
36.0
26.0
16.0
6.0
(4.0)
IHOT-12
Pre-Op
Post-Op
Delta

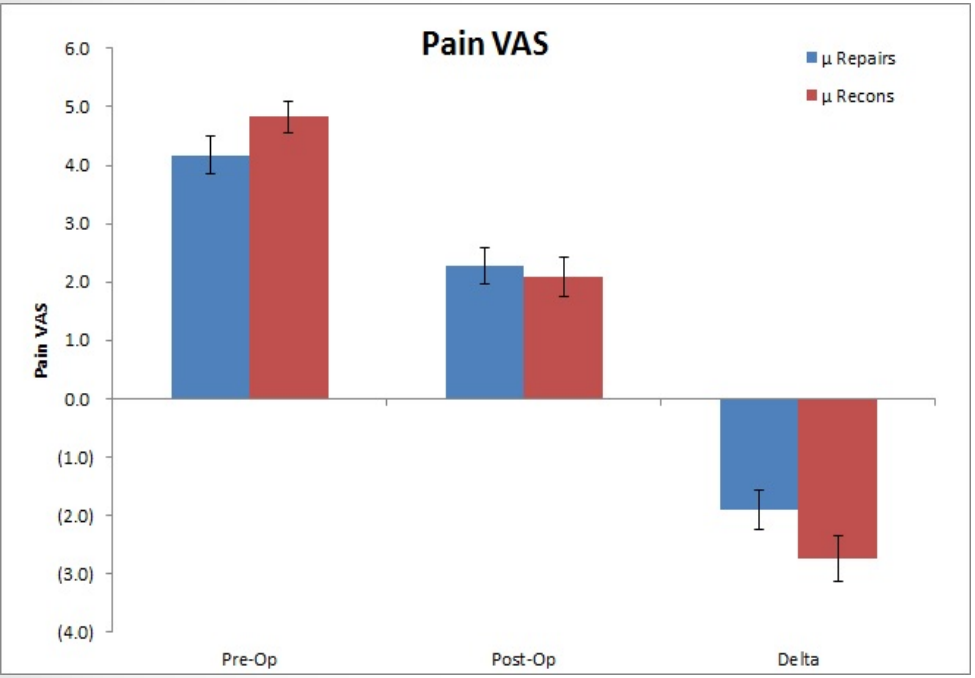

mHHS
μ Repairs
μ Recons
86.0
76.0
66.0
56.0
46.0
36.0
26.0
16.0
6.0
(4.0)
mHHS
Pre-Op
Post-Op
Delta

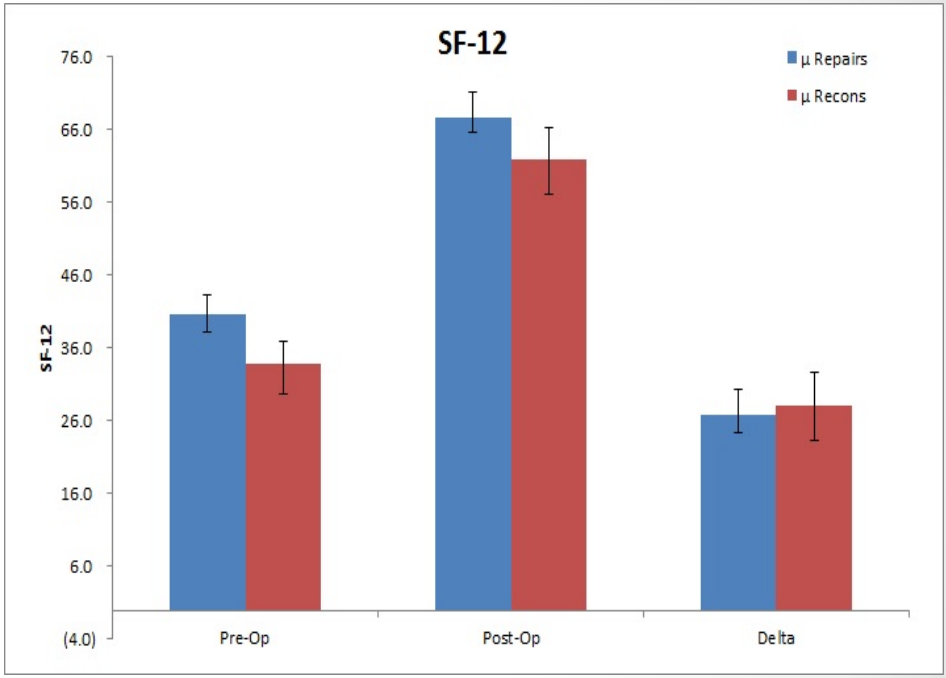
Results


HOS-SSS
μ Repairs
μ Recons
86.0
76.0
66.0
56.0
46.0
36.0
26.0
16.0
6.0
(4.0)
HOS-SSS
Pre-Op
Post-Op
Delta


HOS-ADL
μ Repairs
μ Recons
96.0
86.0
76.0
66.0
56.0
46.0
36.0
26.0
16.0
6.0
(4.0)
HOS-ADL
Pre-Op
Post-Op
Delta

Results


Pain VAS
μ Repairs
μ Recons
Pain VAS
6.0
5.0
4.0
3.0
2.0
1.0
0.0
(1.0)
(2.0)
(3.0)
(4.0)
Pre-Op
Post-Op
Delta


SF-12
μ Repairs
μ Recons
SF-12
76.0
66.0
56.0
46.0
36.0
26.0
16.0
6.0
(4.0)
Pre-Op
Post-Op
Delta

Conclusions

- Patient demographics were significantly less favorable in patients undergoing reconstruction:
  - 12 yrs older
  - 35% revisions in RECON group vs. 3.9% revisions in REPAIR group
  - More severe labral damage or defect

Conclusions

- Short term results of Circumferential Labral Reconstruction approximate those of patients undergoing labral repair for more modest labral damage at one-year follow-up.

Conclusions

- Circumferential labral reconstruction may be a viable option for treatment for patients with moderate or severe labral damage

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Thank You