Clinical Outcomes of ACL Repair Versus ACL Reconstruction: A Matched Pair Analysis

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Study Conducted at the Santy Clinic, FIFA Center of Medical Excellence, Lyon, France

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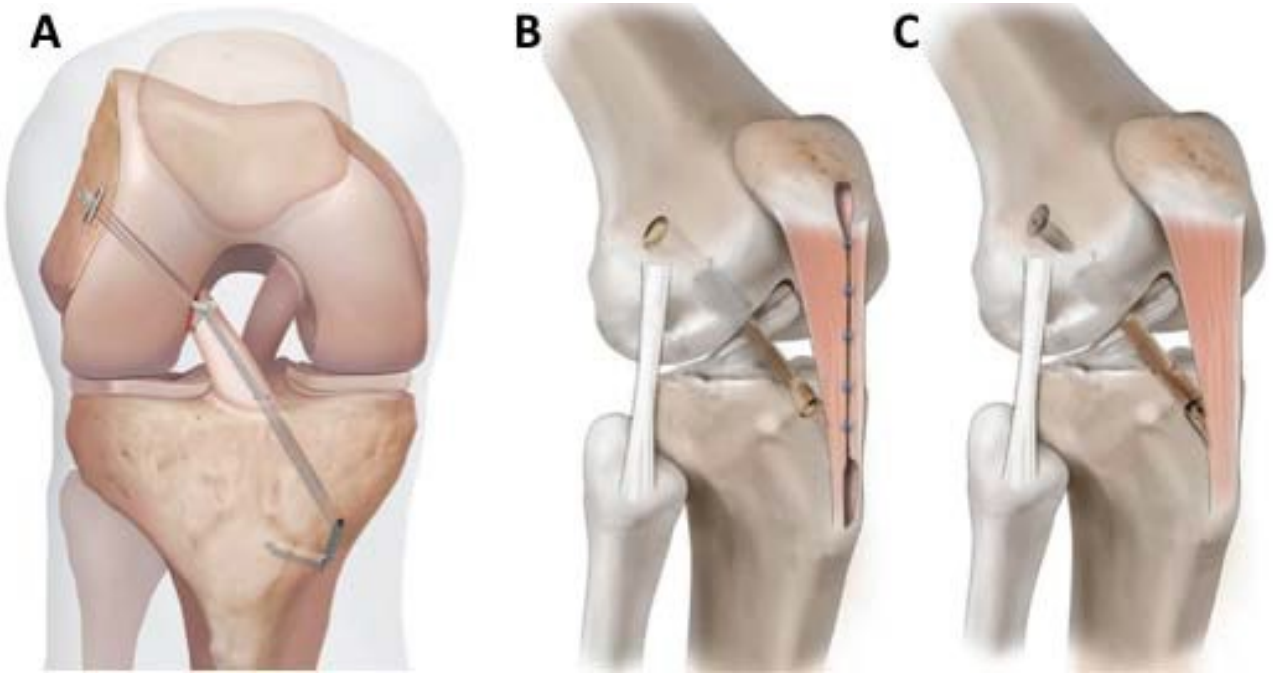
Disclosures

- AS: Consultancy for Arthrex, Associate Editor Arthroscopy Journal, Editorial Board AJSM and OJSM, AANA and ISAKOS Committees
- BSC: Consultancy for Arthrex, Royalties from Arthrex

Purpose

- Purpose: The purpose of this study was to retrospectively compare the clinical and functional outcomes of ACL repair versus ACL reconstruction (BTB or HT autografts), at a minimum follow-up of two years.



Methods

- Consecutive ACL repair patients were propensity matched (criteria: gender, age, BMI, chronicity, meniscus status, knee laxity, Tegner, and participation in pivoting and contact sports) to ACL reconstruction patients in a 1:1 ratio. All procedures performed by senior author (BSC)
- Isokinetic testing was used to evaluate strength deficits at 6 months post-operatively.
- Knee laxity parameters were evaluated at 12 months
- PROMS, return to sport and failures, recorded at final follow up (min 24 months)

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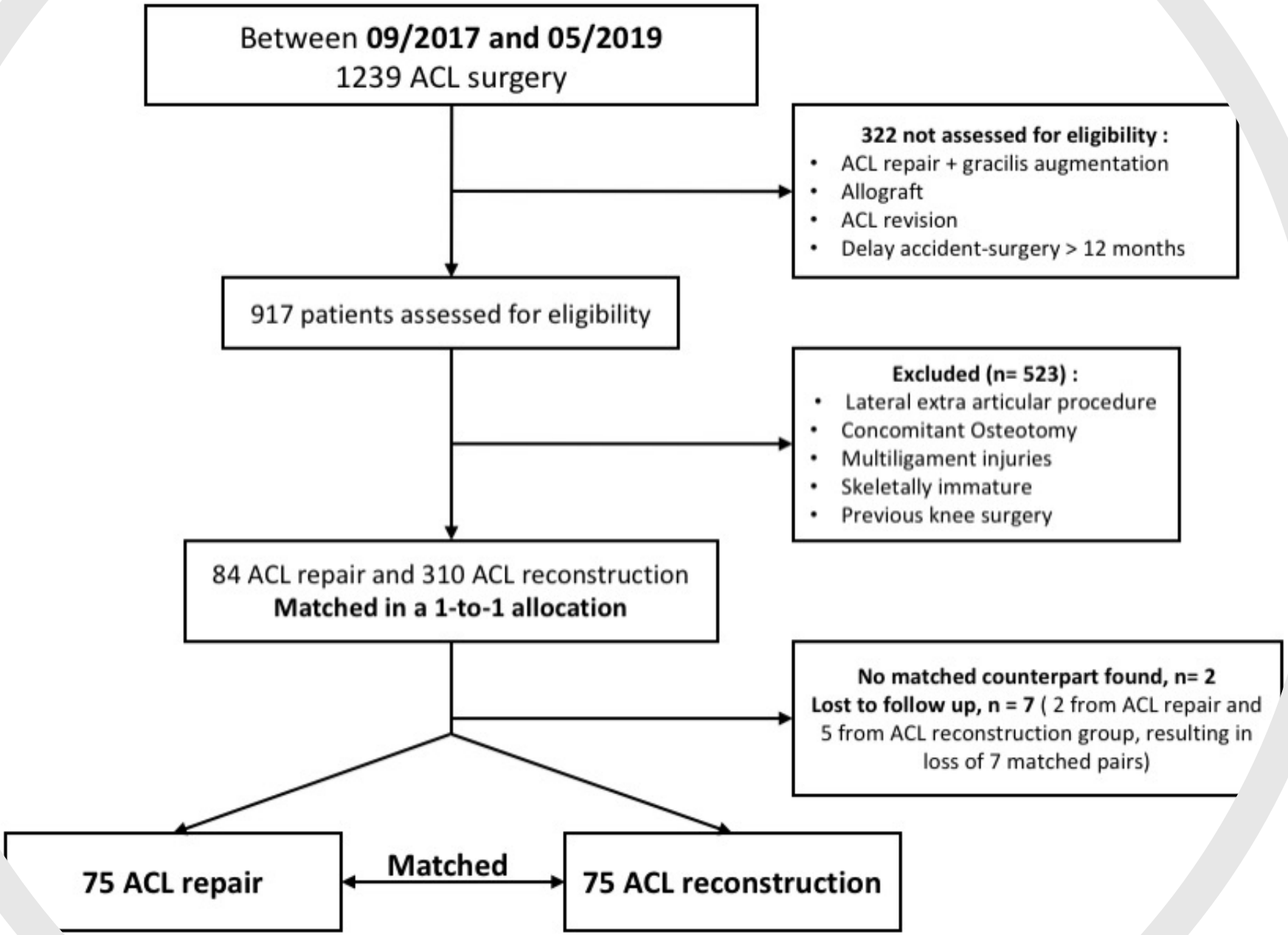
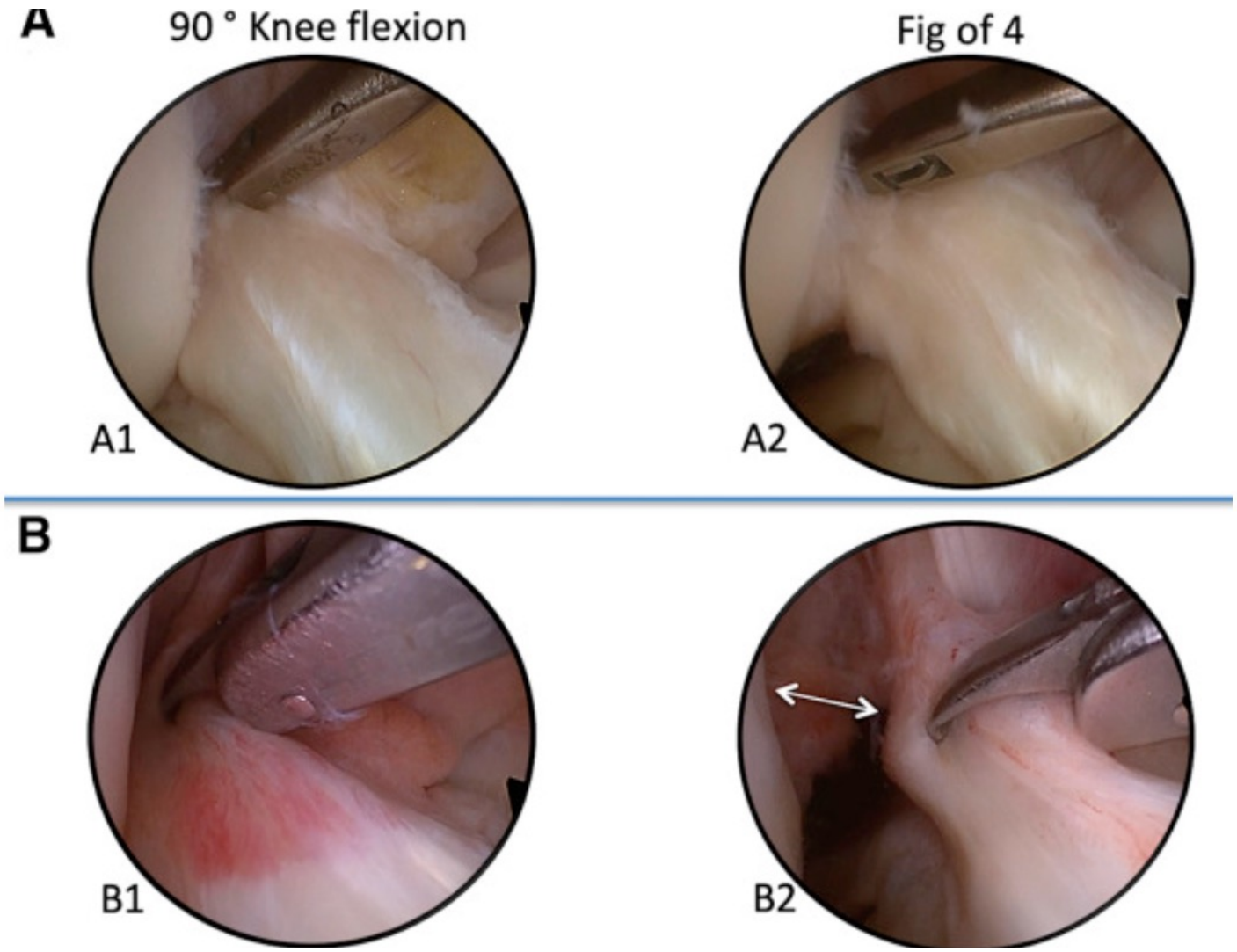


Criteria for Repair

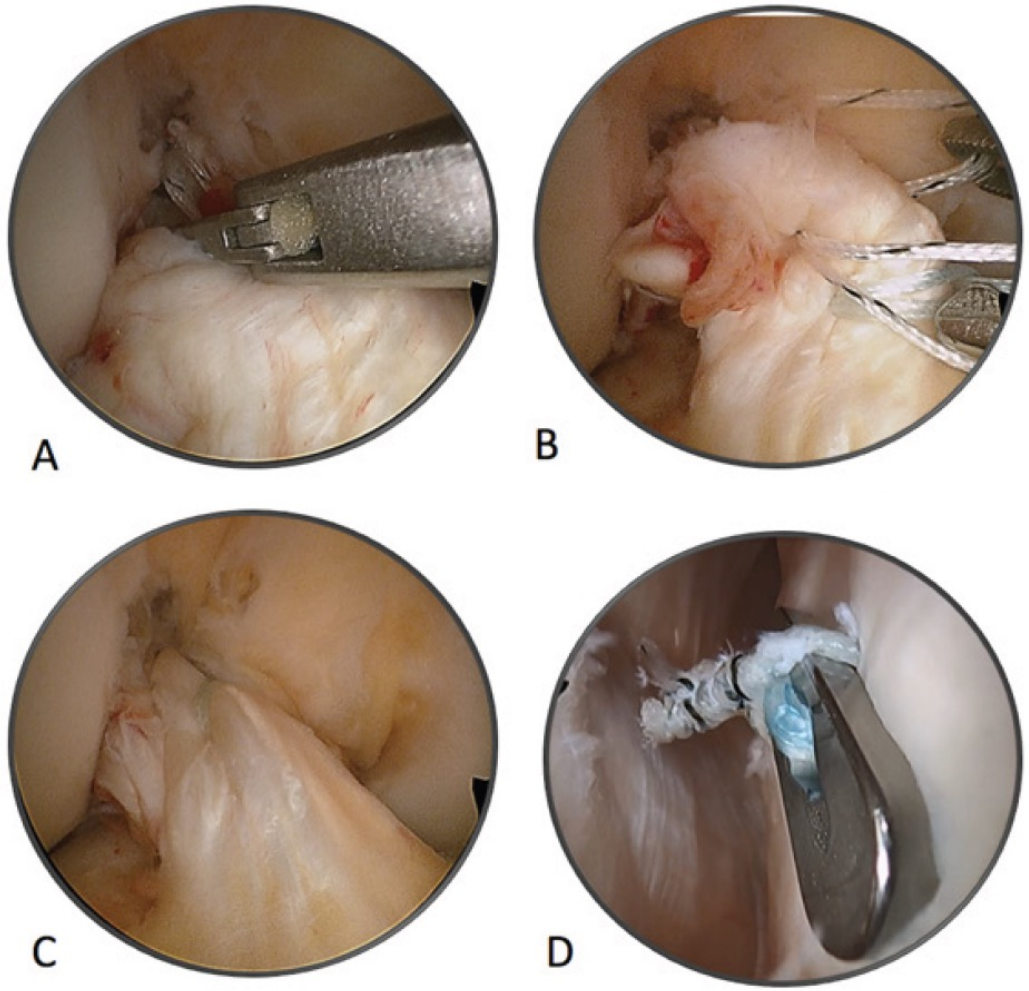
- Sherman I or II
- Good quality tissue
- Reducible (4CROSS Test)

Moura JL, Kandhari V, Rosenstiel N, Helfer L, Queirós CM, Abreu FG, Praz C, Sonnery-Cottet B. Figure-of-4 Cruciate Remnant Objective Assessment Test Reducibility of Anterior Cruciate Ligament Stump for Feasibility of Arthroscopic Primary Anterior Cruciate Ligament Repair. Arthrosc Tech. 2019 Jun 2;8(6)



Repair Technique

- Sutures passed through both bundles
- Cortical button fixation
- Internal brace augmentation



Isokinetic Strength, 6 Months

	ACL repair n = 56	ACLR n = 56	*P value*‡
Isokinetic assessment delay, months ± SD (Range)	6.4 ± 1 (5-10)	6.7 ± 1.5 (5-13)	0.4988
Isokinetic hamstring deficit, (%) ± SD (Range)	+1.7 ± 12.2 (-34.1-27.1)	-10 ± 12.8 (-44.7-17.3)	**<0.0001**
Isokinetic quadriceps deficit, (%) ± SD (Range)	-23.1 ± 14 (-50.6-3.5)	-28.2 ± 15.1 (-55.4-10)	0.102

‡ Significance determined with the Wilcoxon Signed-rank test

Non-Inferiority Analyses

	ACL repair n = 75	ACLR n = 75	Mean difference (95% IC)	*P value*‡
Side-to-side laxity (mm) ± SD	1.1 ± 1.4	0.6 ± 1.0	0.427 (0.630-0.790)	**<0.0001**
Subjective IKDC ± SD	86.8 ± 9.0	86.7 ± 10.1	0.148 (-2.853-3.148)	**<0.0001**

‡ Significance determined with the Wilcoxon Signed-rank test

Outcomes mean f/up 30 months

- No significant differences between groups with respect to Lysholm, Tegner, KOOS, ACL-RSI (mean differences or percentage of patients achieving PASS) or time to RTS
- Mean FJS-12 was significantly better in the ACL Repair Group meaning that those patients were more likely to forget about their knee during activity (82 vs 74, p=0.017).
- Similarly, 77 vs 60% achieved PASS wrt FJS 12 (p=0.034)

Failure of index procedure

- No graft failures in ACL reconstruction group vs 4 (5.3%) failures of ACL repair (p=0.045)

- Within the ACL repair group, patients experiencing failure were significantly younger than those that did not (26.8 vs 40.7 years, p=0.013)

- When only patients aged over 21 years were included in the analyses, there was no significant difference in the failure rate between groups (failure of repair 2 (2.9%) p=0.157).

Conclusions

- ACL Repair was non-inferior to reconstruction with respect to knee laxity parameters and subjective IKDC
- ACL repair was associated with some advantages over ACL reconstruction including superior hamstring strength at 6 months, and significantly better FJS-12 scores.
- ACL repair failure rates were significantly higher than reconstruction in patients under the age of 21, but not in those older than 21 years
- A potentially useful treatment option in highly selected patients

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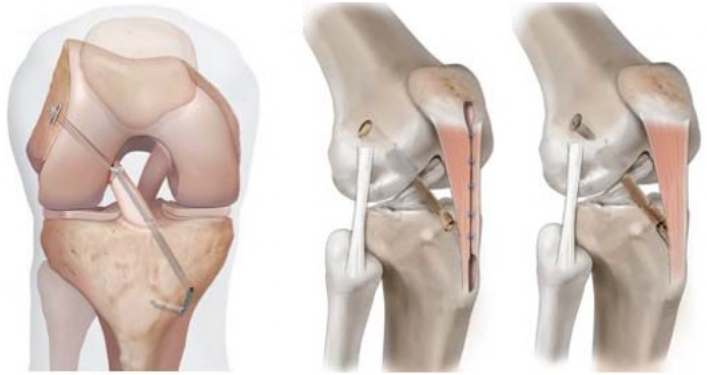

SANTI Scientific ACL NeTwork International

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