

All Soft Tissue Quadriceps Tendon Versus Quadriceps Tendon With Bone Block in Primary ACL Reconstruction

Joshua C. Setliff BA¹, Ehab M. Nazzal, MD¹, Nicholas P. Drain, MD¹, Zachary J. Herman MD¹, Asher B. Mirvish, BA¹, Bryson P. Lesniak MD¹, Volker Musahl MD¹, Jonathan D. Hughes MD^{1,2}

¹UPMC Freddie Fu Center for Sports Medicine, Department of Orthopaedic Surgery, University of Pittsburgh Medical Center, Pittsburgh, PA

²University of Gothenburg, Gothenburg, Sweden



Department of
Orthopaedic Surgery



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Disclosures

Volker Musahl, MD, FAAOS (Pittsburgh, PA)

AAOS: Board or committee member

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Background

- All-soft tissue quadriceps tendon (sQT) and quadriceps tendon with bone block (bQT) are both popular choices for primary anterior cruciate ligament reconstruction (ACLR)^{1,2}
- Despite the increased popularity of QT autografts, direct comparisons of sQT and bQT preparations are lacking³

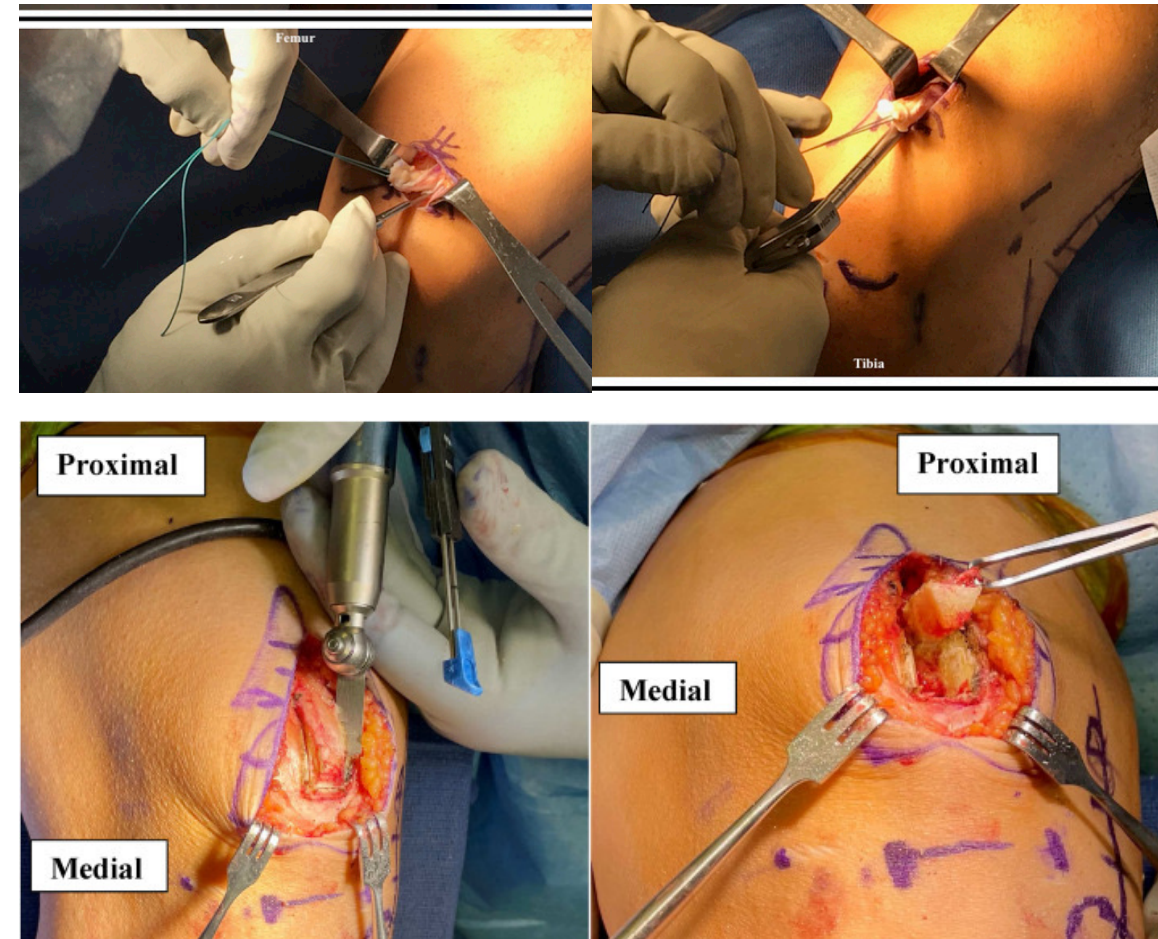


Figure 1. sQT⁴ (above) and bQT⁵ (below) graft harvest

Study Aim

- Evaluate whether there was a difference in clinical outcomes between patients who underwent primary ACLR with sQT versus bQT

Hypothesis

- No difference in clinical outcomes between sQT and bQT in primary ACLR

Methods

Inclusion Criteria

- Primary QT ACLR between 2010-2021
- ≥ 12 months of follow up

Exclusion Criteria

- Revision ACLR
- Multi-ligamentous injury
- Double-bundle ACLR or posterolateral bundle augmentation
- Concomitant procedures (e.g., osteotomy, cartilage restoration, lateral extra-articular tenodesis)

Methods (continued)

Data Collection and Analysis

- Mean pre- and post-op PROs
 - Number meeting minimum clinically important difference (MCID) was compared for IKDC
- Stability testing^{6,7} (Figure 2)
- Return to sport (RTS): number who fully resumed preinjury level of play and mean time to do so
- Rate of complications: retear, stiffness
 - Stiffness = loss of $>10^{\circ}$ flexion or $>5^{\circ}$ extension⁸

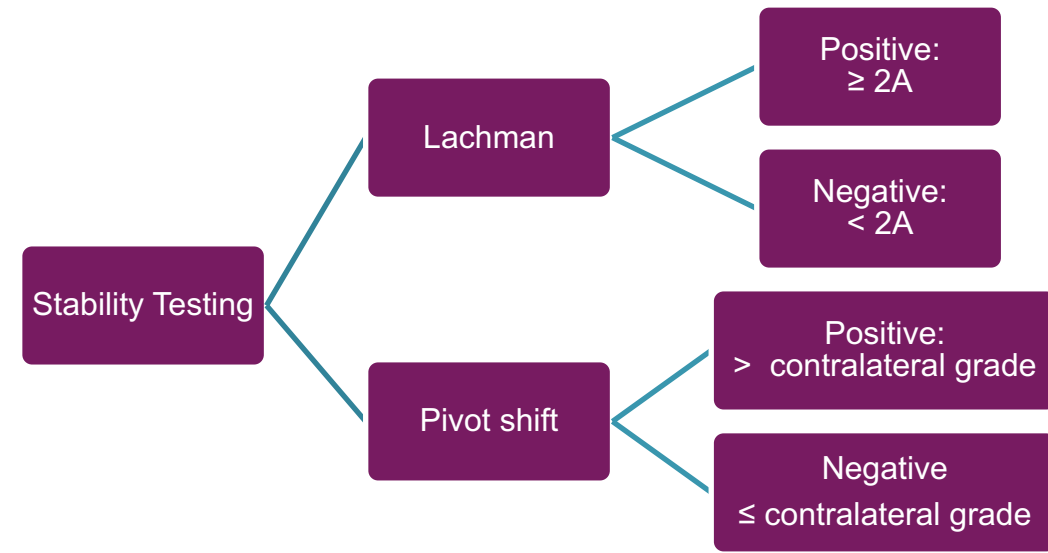


Figure 2. Lachman and pivot shift findings were dichotomized to positive and negative^{6,7}.

Results

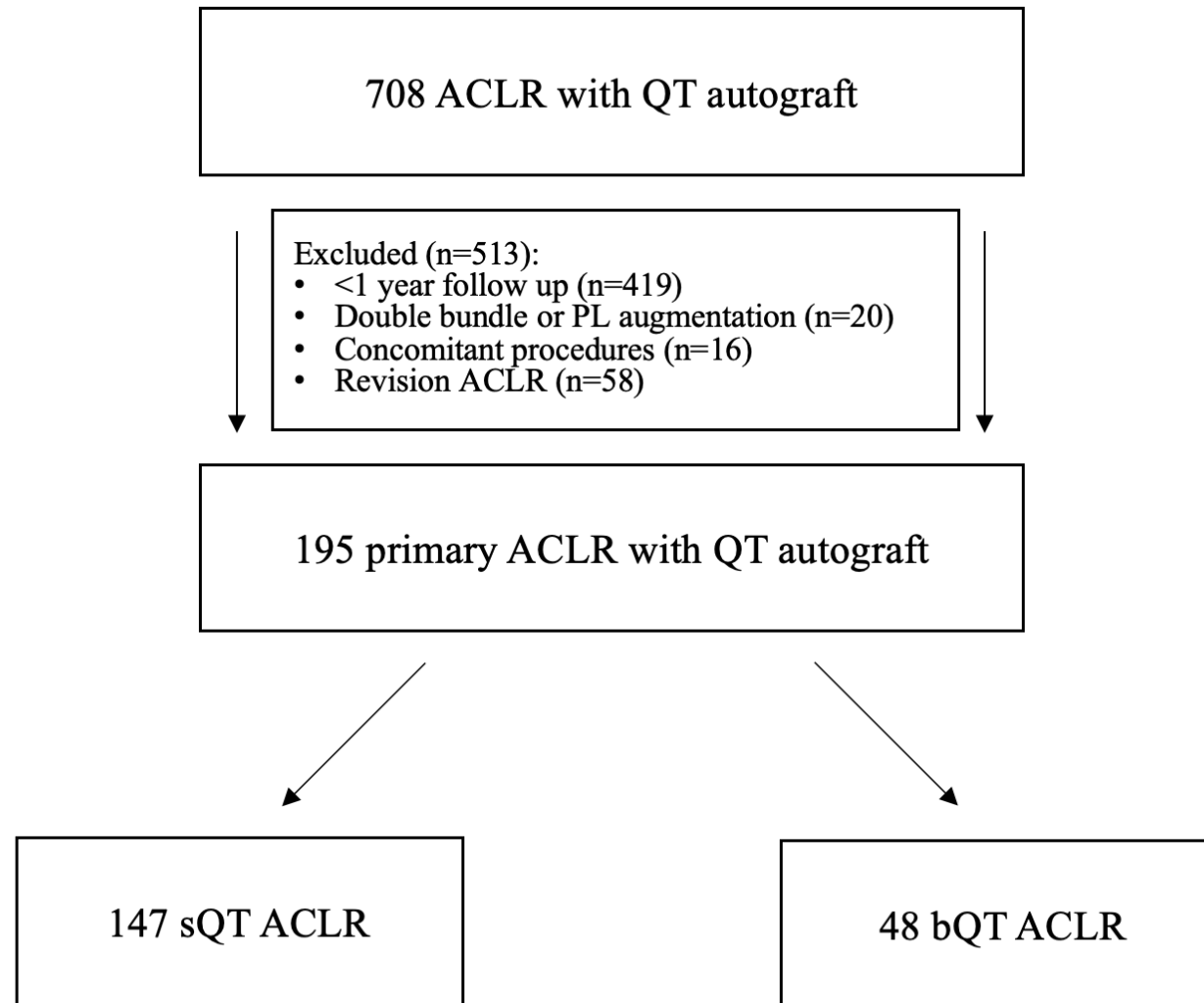


Figure 3. Patient recruitment flowchart. Of 708 QT ACLR patients identified, 195 met inclusion criteria.

Results (continued)

- No difference in IKDC measures (Figure 4) or other PROs at final follow up
- No difference in stability testing (Table 1)

Table 1. Postoperative Stability Testing

	sQT (147)	bQT (48)	p-value
Lachman (+) – n (%)	8 (6%) (n=144)	1 (2%) (n=48)	n.s.
Pivot shift (+) – n (%)	8 (13%) (n=64)	2 (5%) (n=39)	n.s.

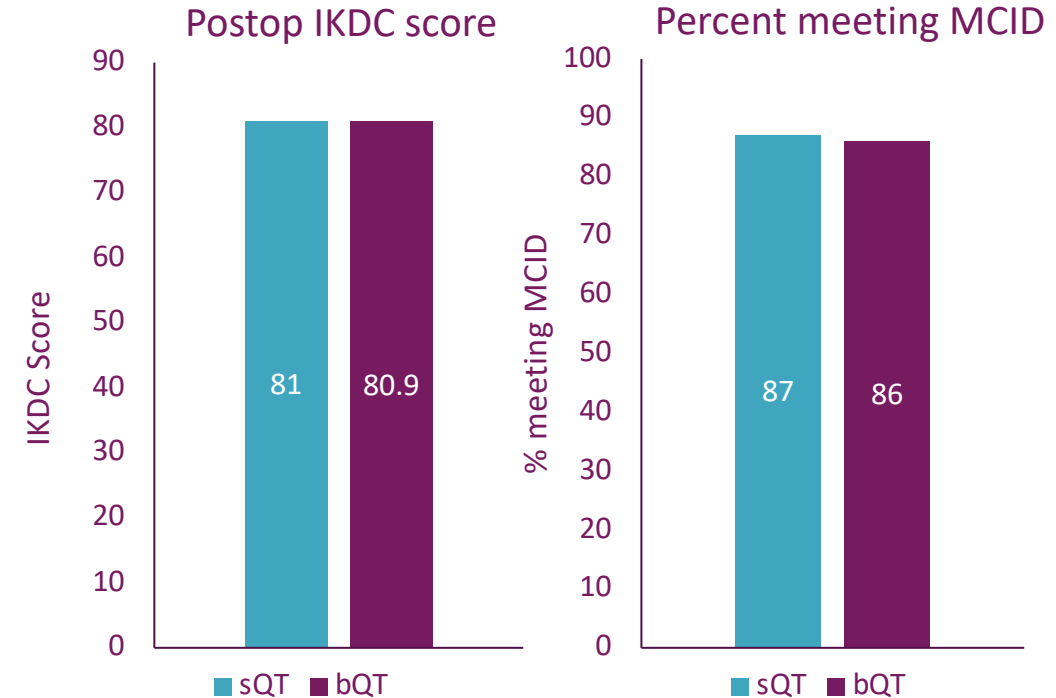


Figure 4. Mean postoperative IKDC score and percentage of patients in each cohort who met IKDC MCID

Results (continued)

- No difference in RTS (Figure 5)
- No difference in postoperative complications (Table 2)

Table 2. Postoperative Complications

	sQT (147)	bQT (48)	p-value
Graft retear – n (%)	7 (5%) (n=147)	3 (6%) (n=48)	n.s.
Stiffness – n (%)	21 (14%) (n=147)	5 (10%) (n=48)	n.s.

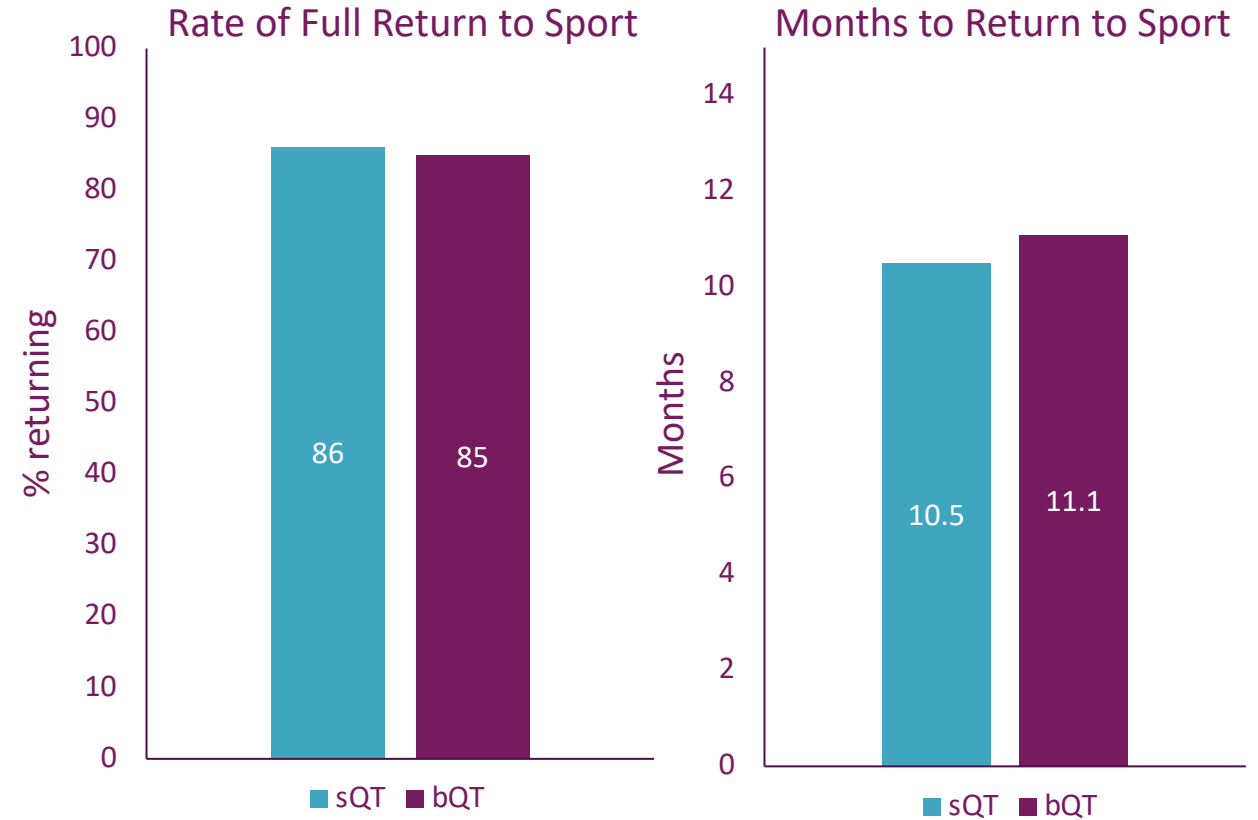


Figure 5. Percentage of patients in each cohort who were able to make a full return to sport and mean time for athletes to return

Conclusion

- No differences in clinical outcomes were detected between patients who underwent primary ACLR with sQT autograft versus bQT autograft
- Both sQT and bQT can be considered as first-line options for primary ACLR

Clinical Significance

Currently, use of sQT or bQT is largely determined by surgeon preference. This study demonstrates excellent outcomes with both preparations and supports the use of either graft type at surgeon discretion.

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