No difference in clinical outcome between quadriceps tendon anterior cruciate ligament reconstruction with and without bone block – Results from the Danish Knee Ligament Registry.

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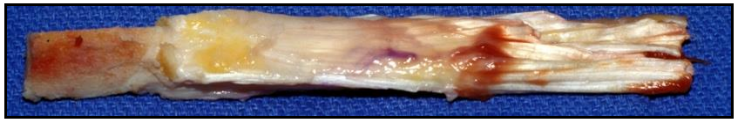

Disclosures

Research support

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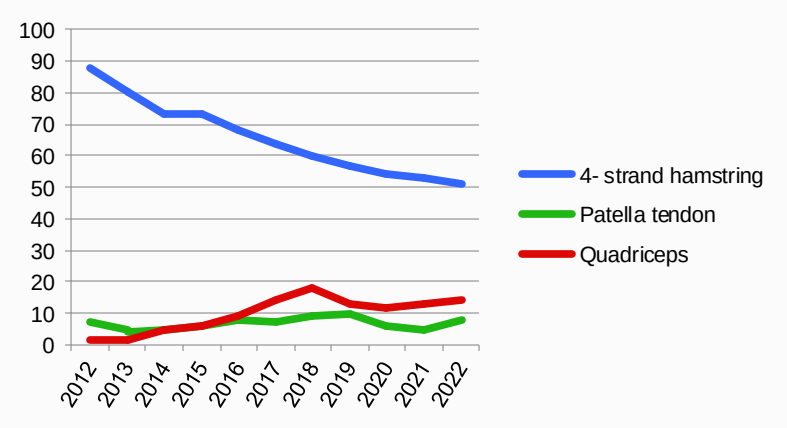
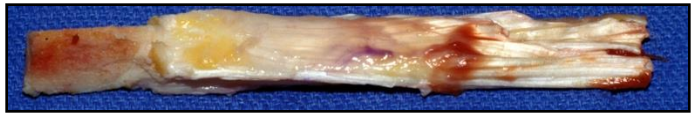
Smith & Nephew

Background

Quadriceps tendon (QT) has recently gained increased interest as ACL reconstruction (ACLR) graft due to the introduction of minimal invasive harvesting techniques and low donor site morbidity.



QT grafts can be used either with patella bone block or as complete soft tissue graft.



It is unknown whether QT graft type affects clinical outcomes.

Purpose

To compare revision rates, knee stability and subjective clinical outcomes in patients who underwent ACLR with QT graft with (QT-B) and without block (QT-S).
Based on data from Danish Knee Ligament reconstruction Registry regarding:

- Instrumented sagittal knee laxity
- Remaining positive Pivot shift
- Patient reported outcomes measures (KOOS)
- Graft failure based on revision rates

Material and methods

Patient cohort from Danish ACL Reconstruction Registry limited to those who underwent surgery between 2014 and 2021.

The inclusion criteria was primary ACLR using a QT autograft.

The exclusion criteria were

- Previous ligament procedure,
- Age < 16 years,
- Previous contralateral ACL injury,
- Previous meniscus or cartilage surgery.

A total of 1584 ACL reconstructions included.

QT autografts with bone blocks (QT-B)(*n* = 925)

QT autografts without bone blocks (QT-S)(*n* = 659).

Material and methods

Graft groups	QT-B	QT-S	p-value
N total	925	659	
Age, mean±SD (range)	26.3 ± 9.0 (16-67)	27.1± 8.2 (16-57)	ns
Male sex, n (%)	556 (60.1)	426 (64.6)	ns
Injury in sports, n (%)	804 (86.9)	557 (84.5)	ns
Preoperative laxity (mm), mean ± SD	4.9 ± 1.8	4.8 ± 1.9	ns
Preoperative pos. pivot shift, n (%)	867 (94.4)	535 (92.4)	ns
Meniscus injury, n (%)	428 (46.3)	335 (50.8)	ns
Cartilage Injury, n (%)	229 (24.8)	173 (26.2)	P=0.03

* Represents p-value <0.05

Results – 1 year postoperatively

	QT-Bone (n = 925)	QT-soft tissue (n = 659)
Sagittal knee laxity (mm)	1,5 mm	1.6mm
Pivot shift (%) Positive (grade 1-3)	**22 %**	**29 %***
Revision rate (%) 2 year	2,8 %	2.8%

* Represents p-value <0.05

Results – 1 year postoperatively

	QT-Bone (n = 925)	QT-soft tissue (n = 659)
KOOS (1 year score)		
Pain	83	85
Symptom	76	79
ADL	89	91
Sport	62	67
QOL	57	57
KOOS Improvements Pre-OP to 1 year		
Pain	10,5	12,2
Symptom	3,5	7,9 *
ADL	8,8	9,9
Sport	19,6	26,0*
QOL	17,3	16,9

* Represents p-value <0.05

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Conclusion

ACL reconstructions with QT autograft with a bone block or as a complete soft tissue graft resulted in

- **Similar low revision rates**
- **Similar good sagittal knee stability**
- **QT graft with a bone block obtained better rotational stability (less pivot shift) than with complete soft tissue QT grafts.**
- **QT graft with a soft tissue improved more from pre-OP to 1 year in symptom and sport subjective scores**

Thank you

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