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# Outcomes of Revision Anterior Cruciate Ligament Reconstruction with autogenous Quadriceps Tendon graft

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# DISCLOSURE

I (Gustavo A. Rincón) have relevant financial relationship to be discussed, directly or indirectly, referred to or illustrated with or without recognition within the presentation as follows:

Paid Consultant:

Smith&Nephew



# BACKGROUND

- Anterior Cruciate Ligament (ACL) revision surgery is performed increasingly in the world
- The rate of revision surgery continues to rise
- Autogenous Quadriceps tendon graft (QT) has gained interest as an anterior cruciate ligament reconstruction
- Current literature shows equivalent clinical results compared to other autografts with less donor site morbidity



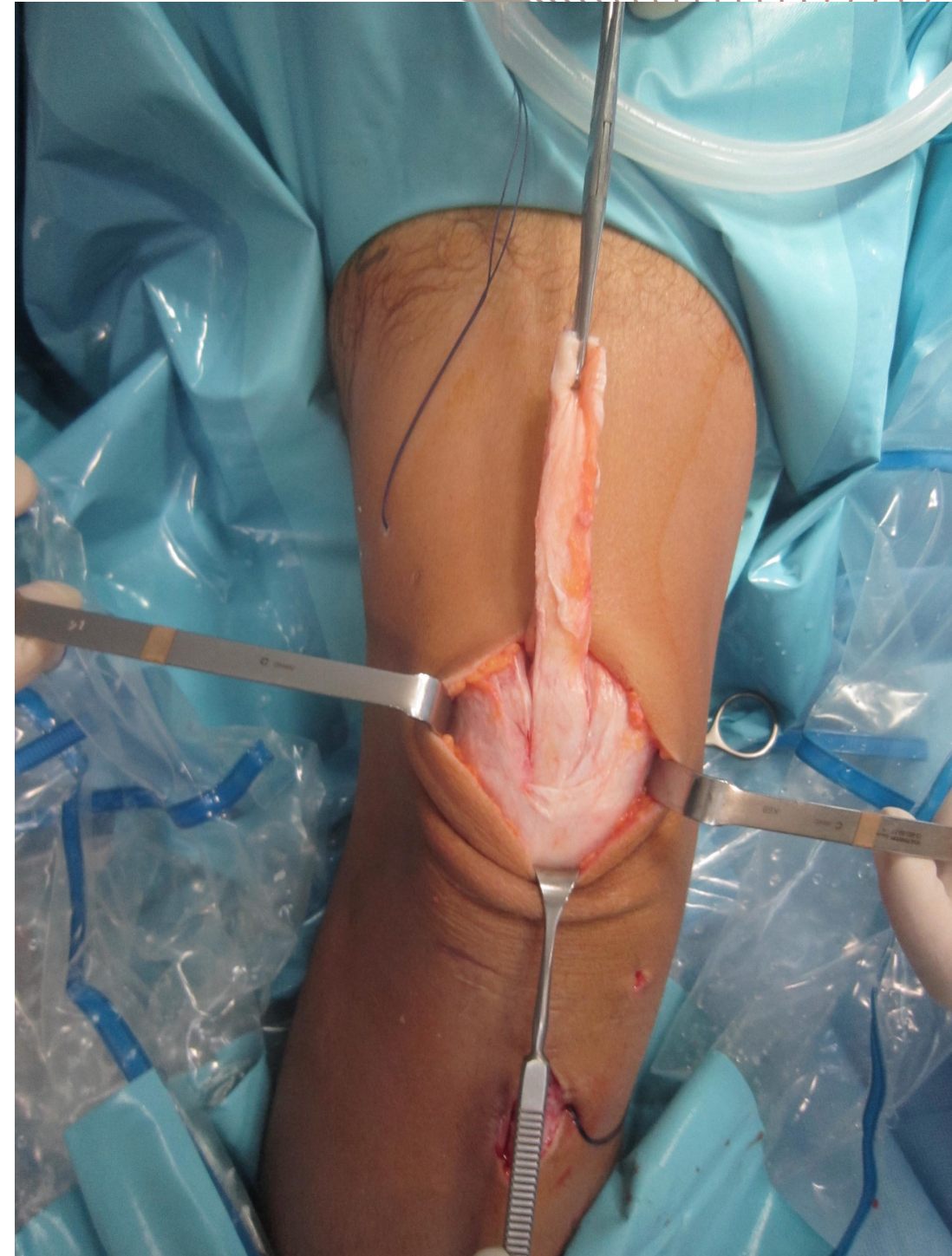
# PURPOSE

Evaluate the functional outcomes of patients who had undergone Revision ACL reconstruction with autogenous Quadriceps tendon graft (QT)



# METHODS

- 50 patients / 50 knees
- Revision ACL reconstruction between 2011 - 2019
- Autogenous Quadriceps tendon graft with bone block
- Same surgeon
- IKDC and Lysholm scores were collected before and two years after surgery

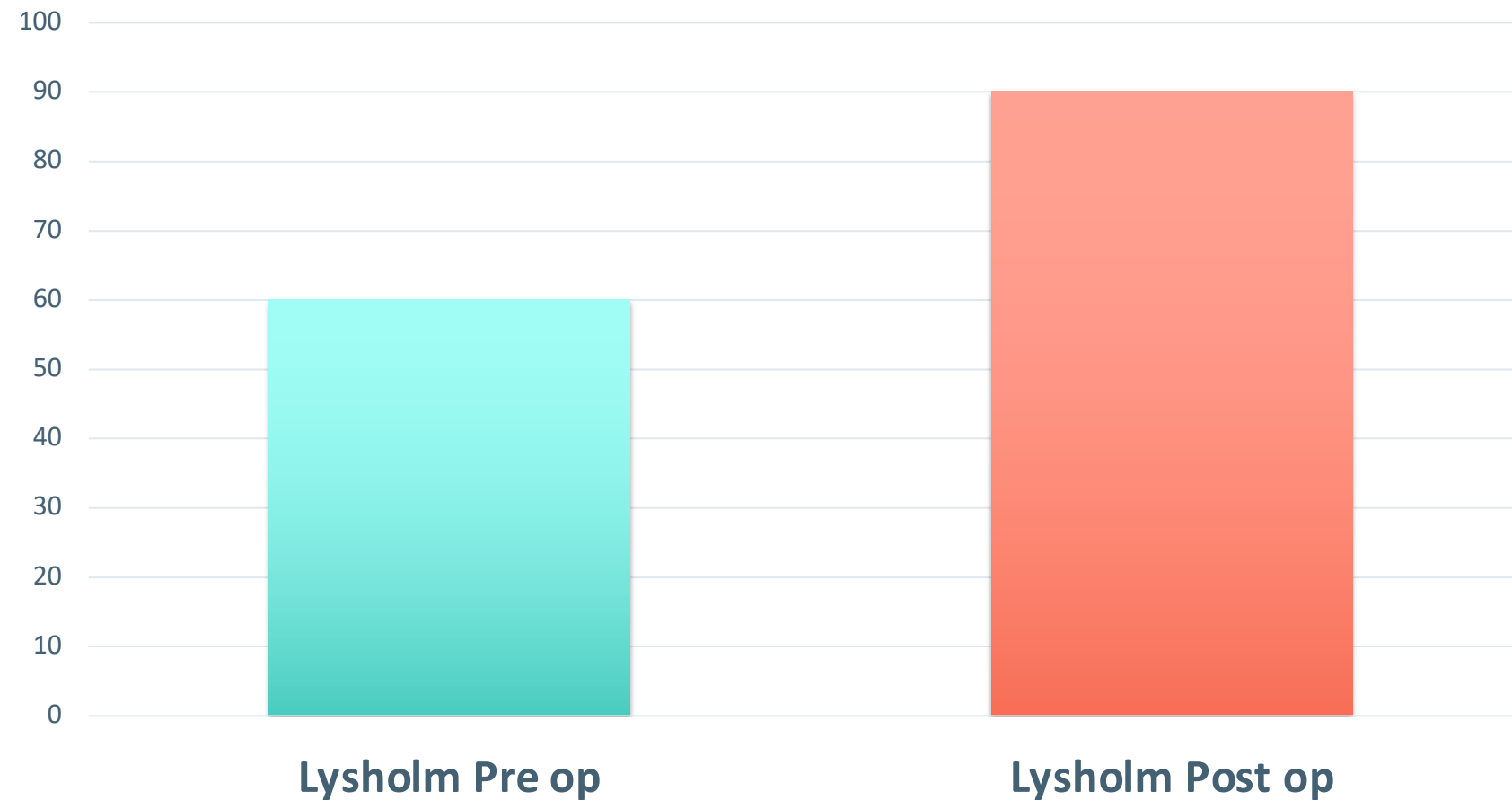


# RESULTS

<b>Table 1 – Demographics, procedure and functional scores</b>	
Demographics/ graft type	N=50
Age at surgery (years), median (ICR)	31 (17 – 47)
Sex, n (%)	
Male	42 (84)
Female	8 (16)
Laterality, n (%)	
Right	30 (60)
Left	20 (30)
Procedure, n (%)	
QT	36 (72)
QT + LET	14 (28)
Lysholm score before surgery, media (SD)	60.1 (±12.3)
Lysholm after surgery, media (SD)	90.1 (±8.42)
IKDC before surgery, media (SD)	56.7 (±13.8)
IKDC after surgery, media (SD)	85.7 (±9.1)
<i>IKDC: International Knee Documentation Committee</i>	



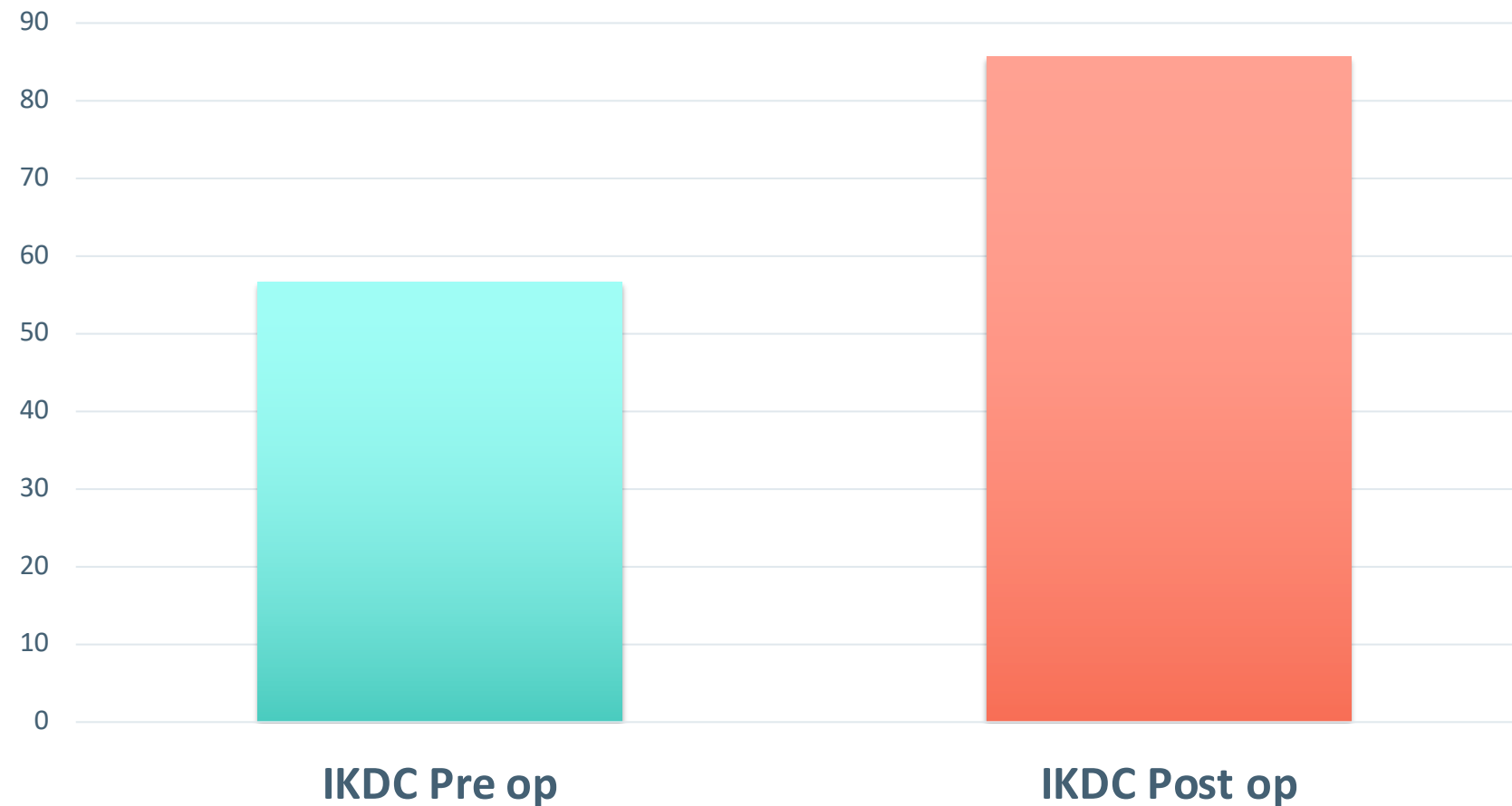
## Lysholm score before and after surgery



**Fig 1.** This figure shows the results of the Lysholm score over time. Difference between before and two years after surgery (mean difference - 30 [- 27.1 to - 32.9];  $p < 0.001$ )



## IKDC score before and after surgery



**Fig 2.** This figure shows the results of the IKDC score over time. Difference between before and two years after surgery (mean difference - 28.9 [- 25.5 to - 32.2];  $p < 0.001$ )



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# RESULTS

- 50 patients
  - 14 patients (28%) required LET
  - 29 patients (58%) required meniscal repair: 16 medial/13 lateral
  - 1 patient (2%) required medial meniscal transplantation
  - 3 patients (6%) traumatic re-rupture
- 4% anterior knee pain at two years FU
- Lysholm improve significantly  $p < 0,001$
- IKDC improve significantly  $p < 0,001$



# DISCUSSION

- QT autograft with bone block showed satisfactory outcomes for ACL revision surgery
- Less anterior knee pain compared with BPTB
- Graft failure in 3 patients (6%), all soccer players
- None of the re-ruptures had LET
- Functional outcomes were satisfactory:
  - Lysholm score 90.1
  - Subjective IKDC score 85.7



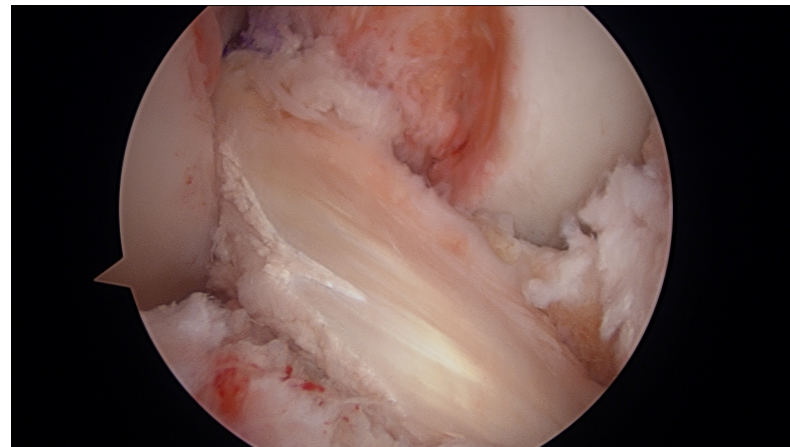
# DISCUSSION

- QT graft does not seem to be detrimental to extensor mechanism
- Patients who had Cybex isokinetic test did not show weakness of extensor mechanism at 1 year FU
- Low anterior knee pain: 4% at 2 years after ACL revision surgery
- QT have greater intra-articular volume in MRI
  - Cross-sectional area 2 times greater than BPTB
  - Risk of notch impingement



# CONCLUSION

- QT autograft with bone block is an alternative graft choice for patients undergoing ACL revision surgery
- Great clinical and functional outcomes
- P-Value statistically significantly in functional scores
- Less anterior knee pain than BPTB / HT



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