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Short Graft, Short Tunnel ACL Reconstruction with Single Hamstring and Internal Brace Comparable Outcomes Conventional Double Hamstring Technique

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Faculty Disclosure Information

- Nothing to disclosure



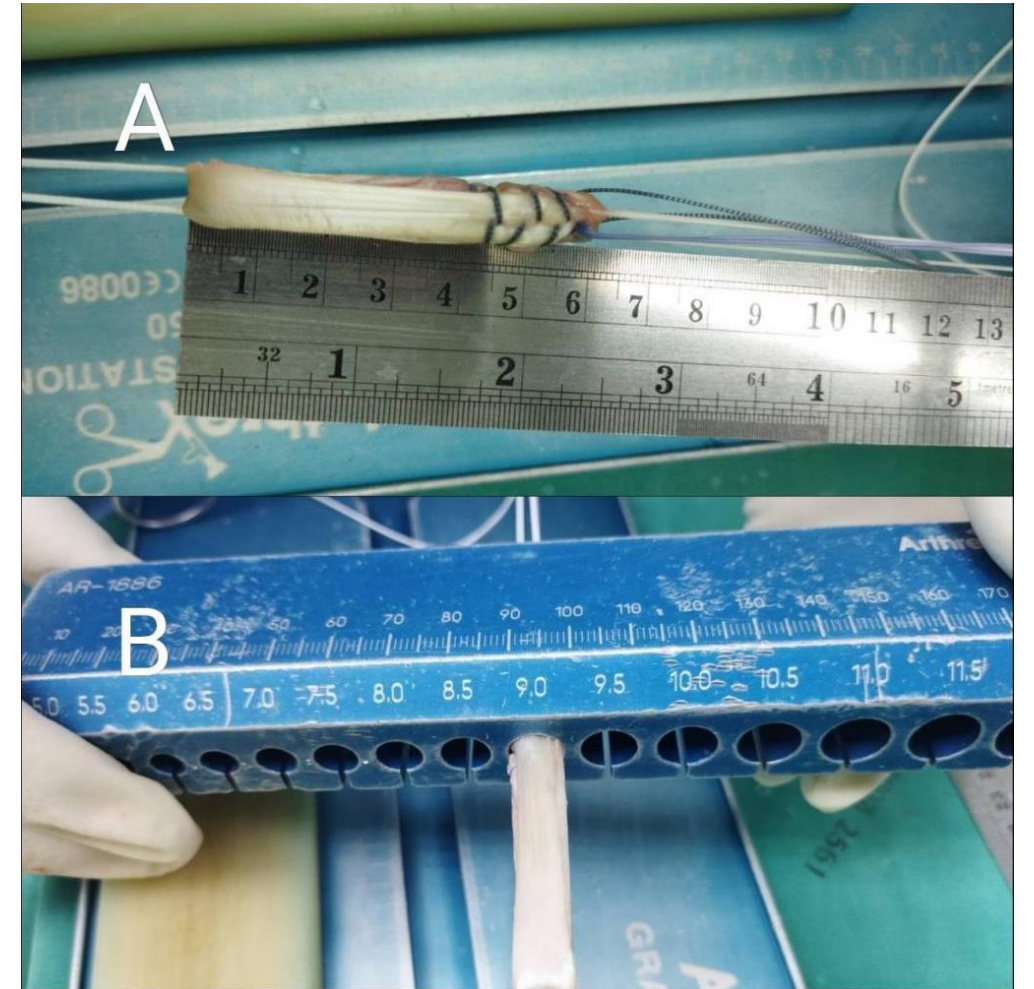
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Purpose

- To compare
 - (1) ACL graft healing,
 - (2) patient-reported outcome
 - (3) complications
- Short graft (length < 65mm), short tunnel (femoral tunnel < 20mm)
- Short graft short tunnel ACLR with an internal brace (SGST-ACLR) technique VS double hamstring autograft conventional ACL reconstruction (CON-ACLR) technique at minimum 2-year follow-up



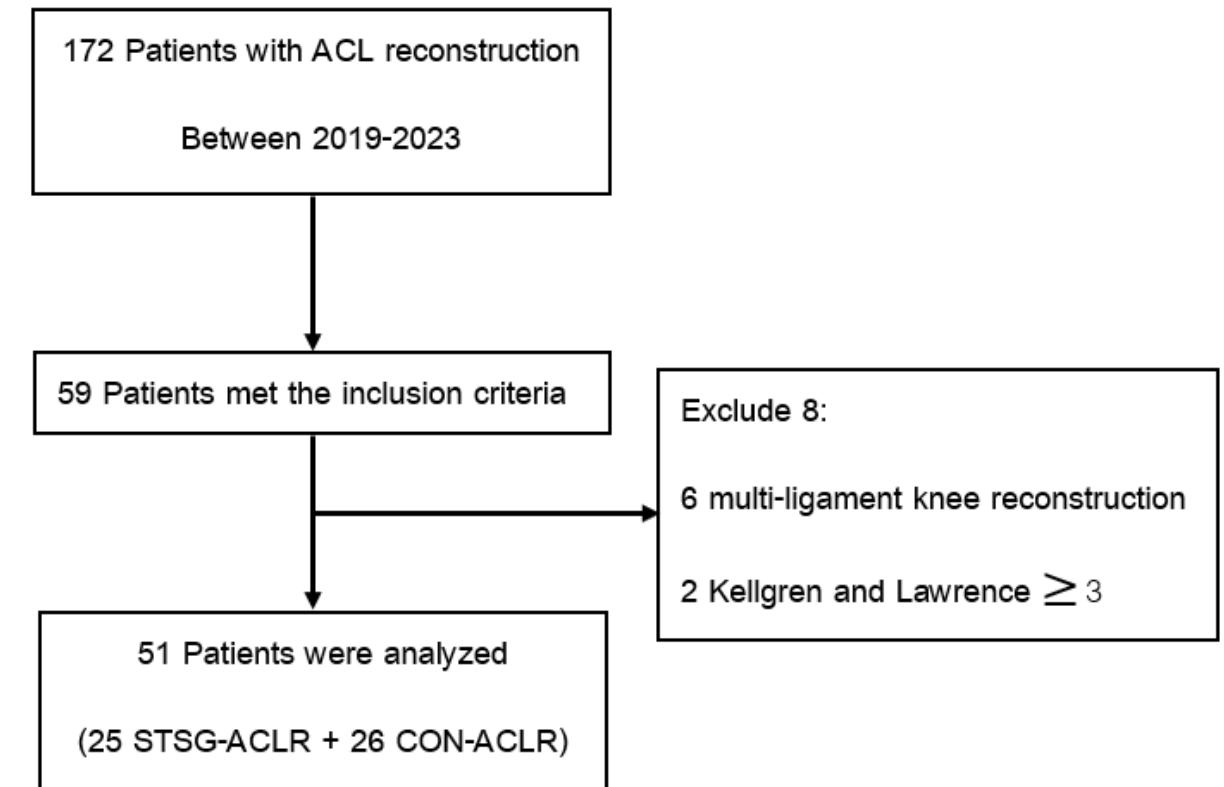
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Methods

- A retrospective cohort study of 51 patients
 - 25 in the SGST-ACLR group
 - 26 in the CONV-ACLR group
- a minimal 2-year follow-up



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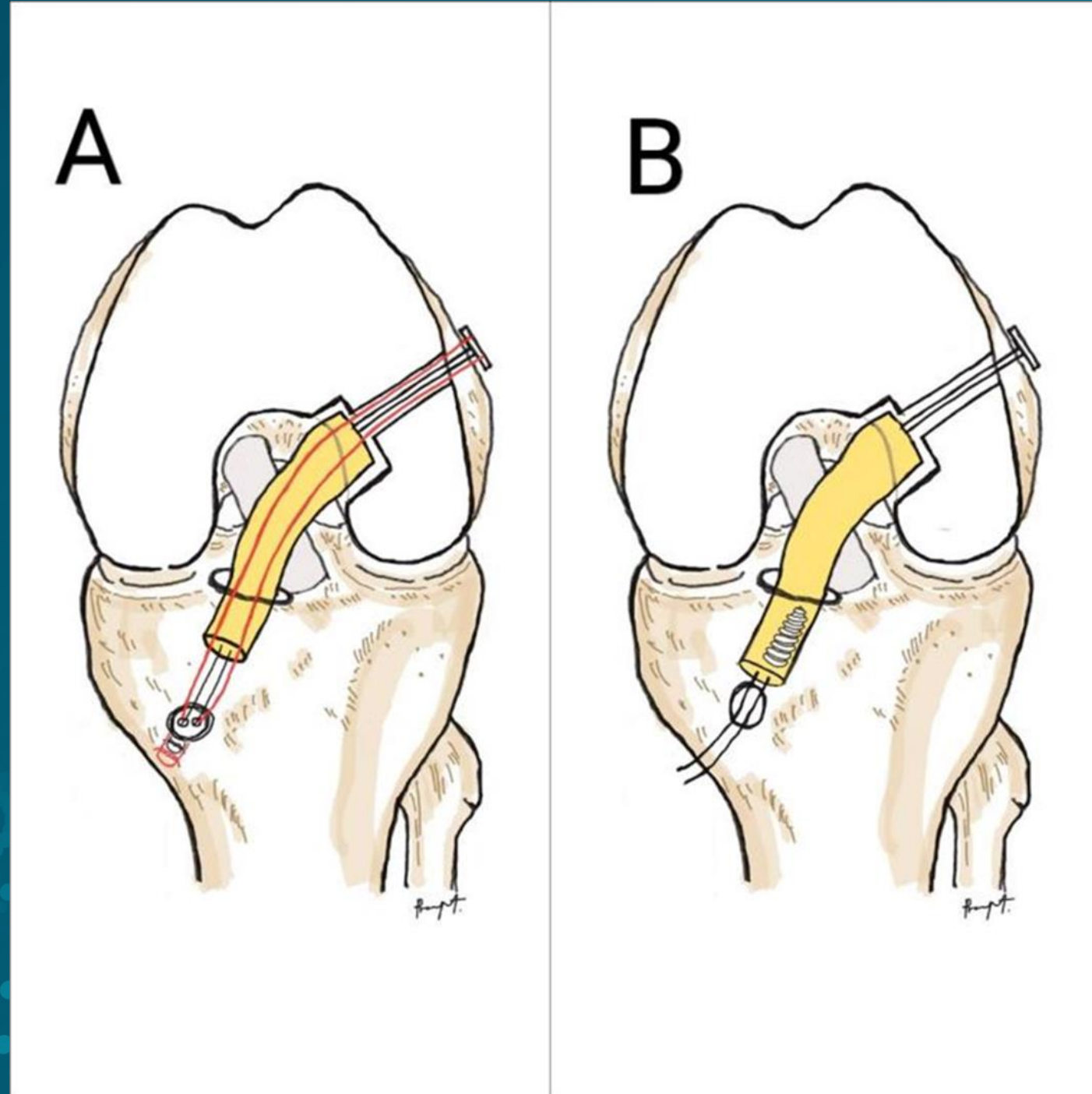


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Surgical Technique

A : SGST-ACLR +IB

B : CON-ACLR



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Result

Characteristics	SGST-ACLR (n=25)	CON ACLR (n=26)	P
Age (y)	29.8±10.8	33±10.9	.15
Body mass index	25.2±4.9	25.8±3.8	.30
Sex			.11
male	25	22	
female	0	4	
Time to reconstruction, mo. (range)	(1-36)	(1-12)	



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Patients' characteristics

Injury Characteristics, ACL Graft Size, and Additional Procedures

Characteristics	SGST-ACLR (n=25)	CON ACLR (n=26)	P
Meniscal injury	20(80)	19(73)	>.99
Meniscal repair or partial meniscectomy	20(80)	19(73)	>.99
Chondral Lesion	2(8)	7(26)	>.99
ACL graft size (mm.)	8.4±0.5	8.3±0.8	.32
ACL graft length (cm.)	6.48±0.1	7.6±0.4	>.99
Femoral tunnel (mm.)	8.3±0.5	8.2±0.8	.37
Tibial tunnel (mm.)	8.6±0.5	8.9±0.8	.33



Patient outcomes
at final follow-up



Outcome	SGST-ACLR	CON ACLR	P
	(n=25)	(n=26)	
IKDC score	79.3±8.3	80.1±9.5	.36
Lysholm score	94.5±4.4	95.5±4.6	.22
Tegner score	7.6±1.3	7.4±1.4	.3
Side-to-side difference, mm	1.6±1.1	1.7±1.5	.207
SNQ ratio mean	78.9±96.3	61.6±57.7	.21
SNQ proximal	85.7±104	51.2±50.3	.06
SNQ middle	87.2±93.7	65.1±63.1	.16
SNQ distal	67.8±94.8	67.7±65.7	.49
Femoral tunnel widening(mm)	1.7±0.7	1.6±0.9	.05
Tibial tunnel widening(mm)	2.2±1.2	2.4±1.4	.008
Complication	0	2	.49
Graft failure	0	1	1.0
Infection	0	1	1.0



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Conclusion

- The SGST-ACLR demonstrates outcomes comparable to conventional ACLR at a 2-year follow-up.
- MRI findings reveal significant tibial tunnel widening in the SGST-ACLR group
- Notably, the SGST-ACLR offers the distinct advantage of requiring only a single hamstring tendon, making it a resource-efficient for ACL reconstruction.



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