ISAKOS CONGRESS 2025 | MUNICH GERMANY June 8–11

Posterolateral Corner Reconstruction: Modification of the LaPrade Technique Using Autologous Hamstring Tendon Grafts: “The Popliteofibular Loop”

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Faculty Disclosure Information

- Nothing to disclosure

Purpose

*This is a **technical note** that describes a modification of the LaPrade procedure for PLC reconstruction using hamstring autografs.*

Purpose

- The surgical technique is described to ensure reproducibility, with particular emphasis on the proposed modifications:

1. The use of **autologous grafts** (gracilis and semitendinosus tendons)

2. The configuration in which they are used, to allow **adequate tensioning** and to **increase the thickness** of the reconstructed structures

3. The fixation with **widely available interference screws**

Methods

- Lateral surgical access and standard dissection, with fibular nerve identification and protection

- The bone tunnels are created just as described by LaPrade et al.

- First, **the gracilis tendon is used for reconstruction of the popliteus tendon (PT)**: the graft is passed without any folds (single-stranded) through the tibial tunnel, from anterior to posterior.

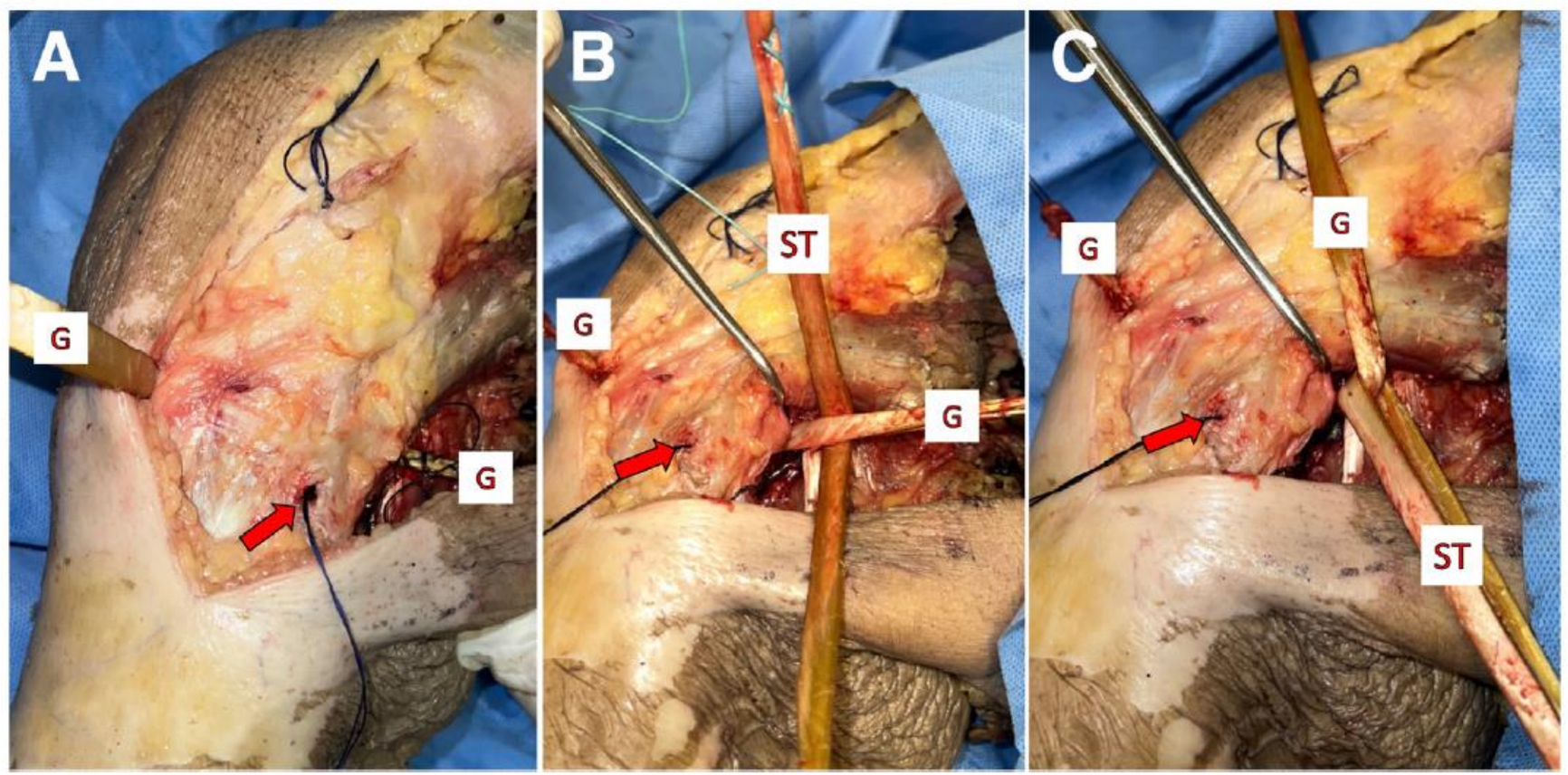
Methods

- Then, **the semitendinosus tendon is “looped” around the previously passed gracilis tendon**, so that this winding of one graft over the other is adjacent to the posterior exit of the tibial tunnel and the proximal tibiofibular joint.

- The gracilis tendon is then directed to the femoral tunnel, ensuring that it lies deep to the lateral structures.

- With the semitendinosus graft now folded (double-stranded), it is passed through the fibular tunnel, from posterior to anterior.

Methods



Passage of the grafts and "looping" of one graft around the other.

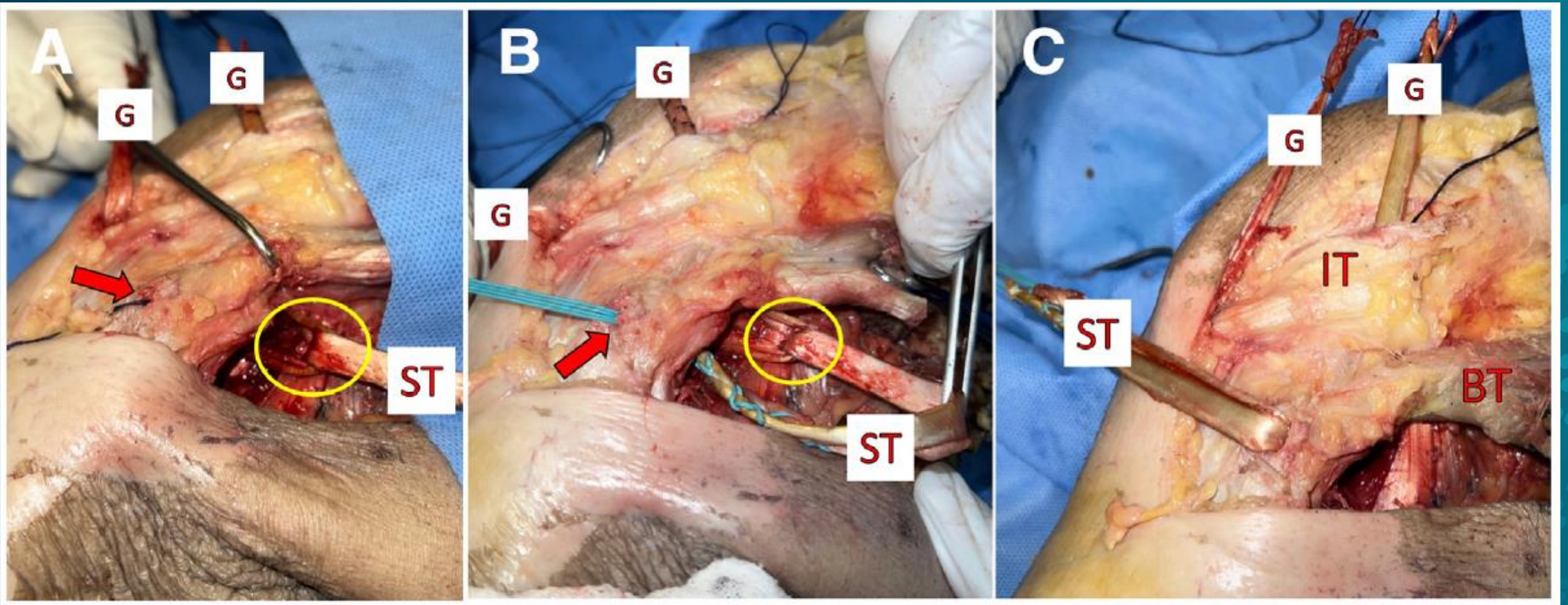
ST = semitendinosus; G = gracilis; red arrow = fibular tunnel

Methods

- After passage through the femoral tunnel created at the popliteus tendon insertion, fixation of the gracilis graft with interference screws is then performed

- Gracilis fixation (**popliteus tendon reconstruction**) should be done first in the femoral tunnel, and then in tibial tunnel, under manual tension while keeping the knee at 60^{o} of flexion.

Methods



Passage of the double-stranded ST through the fibular tunnel. The yellow circle shows the "popliteofibular loop".

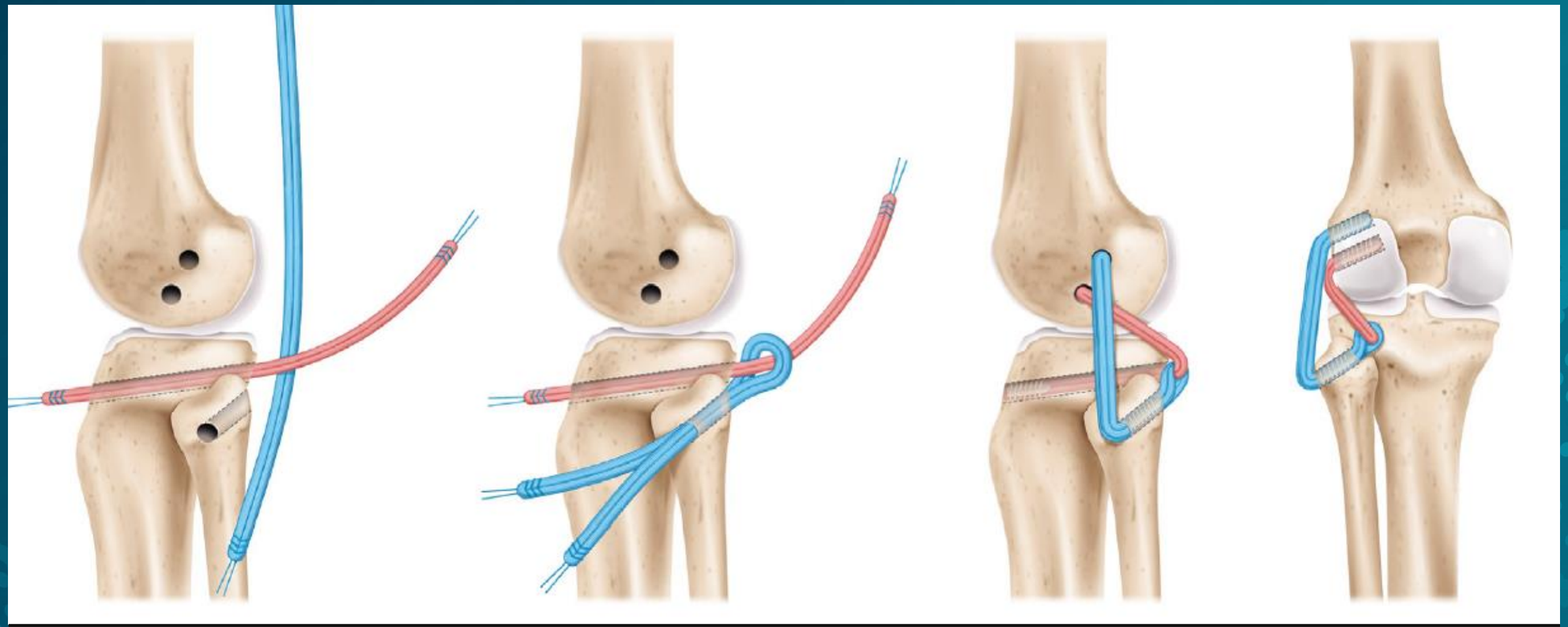
ST = semitendinosus; G = gracilis; red arrow = fibular tunnel

Methods

- The double-stranded semitendinosus graft is now fixed with an interference screw in the fibular tunnel, reproducing the **popliteofibular ligament (PFL)**, again with the knee at 60º of flexion.

- Finally, after passing the double-stranded semitendinosus graft under the iliotibial band (ensuring that it is adjacent to the remaining native lateral collateral ligament - LCL), it is passed and fixed with an interference screw, keeping the knee at 30º of flexion, for **reconstruction of the LCL**.

Methods



The “popliteofibular loop” technique, where each PLC structure (PT, PFL and LCL) is separately tensioned and fixed with interference screws

In blue = semitendinosus; in red = gracilis

Conclusion

- Since it does not depend on allograft availability and requires simple materials for adequate fixation, the modification of the LaPrade technique presented here is:

1. ***Reproducible***
2. ***Inexpensive***
3. ***And easily implemented***

References

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