Push Back and Pull Down to Socket Manoeuvre: An Effective Technique to Engage Graft into Tibial Socket in All-Inside ACL Reconstructions

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INTRODUCTION

- **Background**:
- ACL reconstruction (ACLR) is a frequently performed procedure in orthopedic surgery.
- The All-Inside ACL Reconstruction (AIACLR) technique uses a semitendinosus graft (STG) fixed with variable loop titanium endobuttons.
- **Rationale**:
- Optimal graft tension is essential to prevent complications and ensure proper healing.

CHALLENGES

- **Current Challenge:**
- Soft tissue interposition during engagement of the STG into the tibial socket, particularly due to the risk of peri-patellar soft tissue entanglement.

- **Impact**:
- Potential loss of graft tension
- Risk of graft-tunnel motion leading to suboptimal healing

AIMS & OBJECTIVES

- **Aim**:
- To evaluate the "Push Back and Pull Down" manoeuvre in preventing soft tissue interposition during AIACLR.

- **Objectives**:
- Standardise the technique
- Analyse graft tip trajectory via radiological assessment
- Assess operative time and overall efficacy

TECHNIQUE:PUSHBACK PHASE

- **Key Steps**:
- Use an artery forceps to grasp the tip of the STG.
- Push the graft tip straight into the postero medial zone near the medial semilunar cartilage.

- **Goal**:
- To clear the peri-patellar tissue and position the graft for a smooth pull into
- the tibial socket.

TECHNIQUE:PULLDOWN PHASE

- **Key Steps:**
- With the graft tip positioned, use the attached fibre wires from the variable loop titanium endobutton (TEB) to pull the graft into the tibial socket.

- **Outcome**:
- Achieve optimal graft tension without soft tissue interposition.

METHODS

- **Study Period**: 2011-2023
- **Patient Sample**: 356 cases undergoing arthroscopic primary AlACLR
- **Graft Details:**
- 342 cases: Semitendinosus graft (STG)
- 14 cases: Ipsilateral peroneus longus graft
- **Socket Preparation & Dimensions:**
- Tibial socket: 18 mm (average)
- Femoral socket: 24 mm (average)
- Graft: 72 mm (length), 9.5 mm (diameter)

RESULTS

- **Key Findings**:

- No incidences of soft tissue interposition (no STG entanglement).
- Average surgical duration: 78 minutes (time saved with no intraoperative complications).
- Consistent graft positioning with an average tip trajectory of 48 degrees.

DISCUSSION

- **Clinical Implication**s:
- The manoeuvre eliminates the risk of interposed soft tissues, ensuring direct graft placement.
- Improved graft engagement increases healing potential and stability.
- Reduced operative time enhances surgical efficiency and ergonomics.
- **Additional Considerations**:
- Technique reproducibility in AIACLR
- Potential for broader clinical adoption

ADVANTAGES AND LIMITATIONS

- **Advantages**:
- Simple and reproducible technique
- Improved surgeon comfort and operational speed
- Minimises graft-tunnel motion
- **Limitations**:
- Retrospective study design
- Future prospective studies are needed to validate long-term outcomes

CONCLUSION

- **Summary**:
- The "Push Back and Pull Down" manoeuvre effectively prevents peri-patellar soft tissue entanglement, ensuring secure graft fixation in tibial sockets for AIACLR.
- The method is time efficient, enhances surgical ergonomics, and holds promise for improving graft healing outcomes.
- **Take Home Message:**
- Incorporation of this technique may optimise surgical outcomes in All-Inside ACL Reconstructions.

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