Clinical Summary

Medial Patellofemoral Ligament Repair Augmented with Reinforced Bioinductive Implant Using Double-Bundle Patella Docking Technique

Authors: Matthew J. Schultz, D.O., A.T.C., Elizabeth Ford, D.O., Merrick Wetzler, M.D., and Sean McMillan, D.O., F.A.O.A.O., F.A.A.N.A.
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Aim:

To describe a novel surgical technique for medial patellofemoral ligament (MPFL) repair augmented with a reinforced bioinductive implant (BioBrace®) using a double-bundle patella docking technique, aiming to improve biomechanical strength and reduce complications associated with traditional MPFL reconstruction.

Background

- MPFL reconstruction (MPFLR) is the current standard for recurrent lateral patellar instability but carries a complication rate of up to 26%.
- MPFL repair (MPFLr) has historically shown high redislocation rates.
- The BioBrace® is a collagen-based, bioresorbable scaffold that provides mechanical strength and promotes tissue healing.
- This technique seeks to combine the simplicity of repair with the strength and biological benefits of augmentation.

Surgical Technique Overview

- **Arthroscopy:** Perform diagnostic arthroscopy to assess patellar tracking and intra-articular pathology
- **Implant Preparation:** Whipstitch both ends of the BioBrace® implant and attach an adjustable femoral button construct at the midpoint. BioBrace® can be trimmed to 220mm in smaller patients.
- **Patellar Fixation:** Anchor the BioBrace® ends into the 2 patellar sockets using knotless anchors
- **Femoral Tunnel:** Use fluoroscopy to locate Schottle's point; confirm button deployment on lateral cortex
- **Tensioning:** Set tension at 30° knee flexion to mimic native MPFL
- **Soft Tissue Repair:** Incorporate native MPFL into the construct and close the medial retinaculum securely

Key Takeaways

- This technique offers a biomechanically robust and biologically active alternative to traditional MPFL reconstruction.
- The reinforced bioinductive implant provides early mechanical strength and supports tissue healing.
- The double-bundle docking technique mimics native MPFL anatomy.

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