

Clinical Summary

Preparation of Bone Patellar Tendon Bone Allograft with Biocomposite Scaffold Augmentation

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Journal: Arthroscopy Techniques



Aim:

To describe a reproducible surgical technique for augmenting a bone—patellar tendon—bone (BTB) allograft with a BioBrace® biocomposite scaffold in anterior cruciate ligament reconstruction (ACLR). 90% of patients with ACL injuries opt for surgical treatment. More than 350,000 ACLRs are performed each year in the United States.

Surgical Technique

- **Graft Selection**
 - » A BTB allograft is selected for ACLR, particularly in cases where tissue quality or graft size may be suboptimal
 - » The technique is applicable in both primary and revision ACLR settings
- **Graft Preparation**
 - » **Trimming:** The BTB allograft is trimmed to standard dimensions
 - » **Scaffold Matching:** A BioBrace® scaffold is cut to match the tendinous portion of the graft
 - » **Fixation:** The scaffold is secured using multiple locking loop sutures at both ends and along the graft body
 - » **Biologic Soaking:** The final construct can be soaked in a biologic agent (e.g., PRP, BMAC, or whole blood) to enhance healing potential
 - » **Insertion:** The augmented graft is used in ACLR with standard tunnel fixation techniques

Key Takeaways

- **Arthroscopy:** Perform diagnostic arthroscopy to assess patellar tracking and intra-articular pathology
- **Mechanical Support:** BioBrace® provides initial load-sharing strength to support graft integrity.
- **Biologic Enhancement:** The collagen-based scaffold promotes tissue ingrowth and remodeling.
- **Resorbable Material:** Fully resorbs reducing long-term foreign body concerns.
- **Customizable and Off-the-Shelf:** Easily tailored to graft dimensions and available for immediate use.
- **Potential for Improved Healing:** Especially beneficial in cases with compromised graft quality or revision surgeries.