

Clinical Summary

Anterior Cruciate Ligament Reconstruction Using Bone-Tendon-Bone Allograft: Surgical Technique Using Augmentation with Bio-Composite Scaffold

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Aim:

To present a reproducible technique for ACL reconstruction using a bone-tendon-bone (BTB) allograft augmented with the BioBrace® biocomposite scaffold, aiming to improve graft healing, reduce re-rupture risk, and enhance mechanical strength.

Reasons for Augmentation

- BTB allografts offer bony incorporation but have thinner tendinous portions.
- BioBrace® provides:
 - » Increased thickness at the tendinous portion
 - » Mechanical reinforcement at time-zero

Surgical Techniques

- Graft Prep:
 - » Thaw and shape BTB allograft
 - » Lay BioBrace® flush on tendon side, leaving excess at both ends
 - » Whipstitch BioBrace® to graft
 - » Trim excess BioBrace® and hydrate with PRP
- ACL Reconstruction:
 - » Drill femoral and tibial tunnels sized to augmented graft diameter
 - » Shuttle graft through tibial tunnel and dock into femoral tunnel
 - » Fix with interference screws in hyperflexion (femur) and extension (tibia)
 - » Cycle knee and confirm graft placement arthroscopically

Key Takeaways

- BioBrace® augmentation in BTB allograft ACLR is a promising technique.
- Technique is reproducible and adaptable.
- Enhances graft strength and healing without donor site morbidity.

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