

Clinical Summary

A Novel Distal Biceps Rupture Repair Technique Utilizing a Biocomposite Scaffold

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Aim:

To describe a novel technique for augmenting distal biceps tendon repairs using the BioBrace® biocomposite scaffold.

Indications for Distal Biceps Repair with BioBrace®

- **Complete Distal Biceps Ruptures:** To prevent loss of supination and elbow flexion strength.
- **Partial Tears:** When conservative management fails.
- **Poor Tissue Quality or Massively Retracted Tears:** Augmentation required due to insufficient native tissue.

Surgical Techniques

- **Patient Positioning:** Patient is kept in the supine position on the operating room table.
- **Incision and Dissection:** A transverse single incision approximately 5 to 6 cm in length is made, centered over the radial tuberosity. The skin is carefully dissected to develop a plane to the biceps tendon stump.
- **Preparation of the BioBrace®:** After the native tendon is identified and prepared. The 5x250mm BioBrace® is placed adjacent to the distal biceps tendon to determine the desired size and length, then trimmed to accommodate the tendon needs.
- **BioBrace® Incorporation:** The BioBrace® is incorporated into the tendon with a whipstitch using a #2 non-absorbable suture. The locking stitch extends approximately 4 cm above the distal biceps stump. The augmented tendon is affixed to a button fixation device and delivered into a 8mm socket.

Postoperative Rehabilitation

- **Initial Immobilization:** Post operative rehabilitation protocols vary widely but it is generally recommended to immobilize the elbow at 110 degrees to allow for healing.

Key Takeaways

- MRI at 1 year has demonstrated restoration of the native biceps tendon and showed an increase in tendon diameter from 5mm at pre-op to 8mm at 1 year post op.
- **Enhanced Healing:** BioBrace® promotes a beneficial healing environment and provides structural support.
- **Mechanical Support:** Provides load-sharing strength at time zero, reducing re-rupture risk.
- **Versatility:** Suitable for both acute and chronic distal biceps injuries.
- **Improved Outcomes:** Early results show promising restoration of tendon strength and diameter.
- **Future Potential:** BioBrace® may be widely applicable in biceps tendon rupture.