Distal Biceps Tendon Repair (Tension-slide technique)- Dr. Trueblood

**Indications:** Full thickness tears of any type and partial thickness distal biceps tears with pain refractory to activity modification, splinting, and/or NSAIDs may benefit from reimplantation of the distal biceps into the bicpital tuberosity of the proximal radius. Dr. Trueblood uses a one-incision technique with a cortical button to provide strength for the repair with an interference screw that pushes the tendon against the tunnel wall to minimize tendon-bone-gap formation.

**Technique:** A 6 cm incision is made over the interval between pronator teres and brachioradialis. The cephalic vein and lateral antebrachial cutaneous nerve are identified, mobilized, and retracted gently out of the way for the duration of the case. The underlying fascia is then split and the brachioradialis retracted radially. The superficial radial nerve is identified and protected and crossing braches of the radial recurrent artery are ligated with electrocautery or vessel clips. The radial tuberosity is identified and cleared of remaining soft tissues. In cases of partial thickness tears, the tendon is release from the radial tuberosity and trimmed back to healthy appearing tissue. In full-thickness tears, the tendon is identified proximally and delivered into the distal wound. Meticulous attention is paid to avoiding compression of surrounding neurovascular structures. A locked, looped stitch is then used to prepare the distal biceps for reinsertion. A guide wire is then placed across the radial tuberosity, slightly distal to its midpoint for optimal mechanics and bone quality. This is then over-reamed on the near cortex. The guide wire is removed and a cortical button is attached to the distal biceps stitch. The button is placed through the small, pin hole and flipped perpendicular to the cortex. The stitches are then tensioned to deliver the end of the biceps into the docking hole and one strand is passed through the tendon itself. This is tied securely to fix the position of the distal biceps. An interference screw is then placed radial and proximal to the tendon within its docking hole, pressing the tendon distal and ulnar. The wounds are irrigated copiously and the skin closed in layers with absorbable stitches below the skin. Dermabond glue is used to formally seal the incision. The patient is placed into a sterile dressing with a sling, extubated, and discharged to post-op recovery. The patient will be discharged with plans to follow-up with Dr. Trueblood in 2 weeks to monitor their wound and review operative findings.

**Postoperative Recovery:**
- Sling full time, except for range of motion, for 1st week following surgery and then wean as pain allows. Encourage patient to wear sling in public settings for the full 6 weeks.
- Strict, non-weight bearing to operative extremity for 6 weeks.
- AROM/ AAROM and gravity assisted extension of the elbow from the immediate postoperative period, on.
• Patient may type and write. No lifting, pushing, or pulling allowed.
• Patient may remove dressing on postop day 2 and is then encouraged to keep a bandaid over the wound at all times for the first two weeks.
• Inspect wound. Scar massage teaching.
• Assess pain level/need for refill or redosing of pain medications.
• Assess range of motion. Start gentle passive ROM therapy with PT if and only if arc of motion is less than 30-130° at this time.
• Teach terminal stretching techniques for elbow flexion and gravity assisted extension techniques.
• Work restrictions: May drive when patient has full range of motion and is no longer taking narcotic pain medications. Strict NWB. May type, write, lift a lightly loaded fork. Must wear splint at work.

Return to Activities

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<th>Activity</th>
<th>Time</th>
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<tr>
<td>Computer</td>
<td>3-4 days</td>
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<tr>
<td>Golf</td>
<td>8 weeks (chip and putt)</td>
</tr>
<tr>
<td>Tennis/ Golf (driving)</td>
<td>12 weeks</td>
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<tr>
<td>Contact Sports</td>
<td>4 months</td>
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Weeks 2-6
• Continue AROM/ AAROM with terminal stretching for flexion and gravity assistance for extension.

2nd postop visit at week 6.
• Review postoperative restrictions.
• The patient may now use operative arm for ADLS.
• Measure ROM. May consider progressive splints as needed.

Phase 2 (Passive) Continue Exercises from Phase 1
Weeks 6-8
Add terminal, passive stretching to AROM exercises. No limits.

Phase 3 (Strengthening) Cont. Phase 1 and 2 exercises
Weeks 9-12
Biceps curls/ bear hugs
Resisted Pronation/ supination
Grip strengthening

3rd postop visit at week 12 Monitor strength return/ ROM and assess activity limitations.