

Distal Biceps Repair Rehabilitation Protocol

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Rupture of the distal biceps may be either acute or chronic, and if complete rupture with contracture is present it is important to repair these within three weeks of the time of the injury in order to more easily restore the normal muscle/tendon unit length. In chronic cases when the lacertus fibrosis is intact and the tendon has not migrated proximally, delayed repair is possible.

In the procedure for the acute repair the incision is made just lateral to the biceps tendon extending across the antecubital crease. The tendon stump is exposed by incision to the fascia, and modified Kessler sutures with #2 Ethibond are placed into the tendon stump. A large Boseman clamp is then placed in the interosseous space until the skin is tented posteriorly and a 2nd incision is made posteriorly centered over the clamp. Dissection is carried out through the tissues, and the fascia of the extensor communis and supinator are incised; the bicipital tuberosity is then exposed by subperiosteal dissection. Sutures in the tendon are passed from anterior to posterior through the interosseous space.

Using a powerburr, an elliptical trough is made in the bicipital tuberosity of the radius, and 2 small holes are made in the posterior cortex. The sutures are passed through the drill holes, the tendon end is placed into the elliptical trough, and the sutures are tied.

A long arm splint with the elbow flexed at 90° is placed on the patient. The patient returns in approximately one week for the first post-op visit by the physician and to begin therapy.

Phase I: 1-3 weeks

Clinical Goals

- ◆ Elbow ROM from 30° of extension to 120° of flexion
- ◆ Maintain minimal swelling and soft tissue healing
- ◆ Achieve full forearm supination/pronation

Testing

- ◆ Bilateral elbow and forearm ROM

Exercises

- ◆ Six times per day the patient should set his IROM hinged brace at 30° of extension and 120° of flexion and perform active assistive flexion and active extension exercises within

the brace. Two sets of 10 are performed.

- The brace is then reset at 90°, the forearm straps are loosened, and the patient performs 2 sets of 10 forearm rotations. The straps should then be secured.
- ◆ Ice after exercise, 3-5 times per day
- ◆ A sling should be worn only as needed for comfort with the patient maintaining full shoulder ROM.

Phase II: 3-6 Weeks

Clinical Goals

- ◆ Full elbow and forearm ROM by 6 weeks
- ◆ Scar management

Testing

- ◆ Bilateral elbow and forearm ROM
- ◆ Grip strengthening at 5-6 weeks

Exercises

- ◆ 3 weeks:
 - The extension limit in the brace is changed to 20°. Flexion remains at 120°, but patient may remove brace to allow full flexion 2 times per day. The brace stays on at all other times except when washing the arm.
 - Scar massage 3-4 times per day.
- ◆ 4 weeks:
 - Extension limit is changed to 10°.
 - Continue the same exercises.
 - Putty may be used 3 times per day for 10 minutes to improve grip strength.
- ◆ 5 weeks:
 - The extension limit is changed to 0° and exercises are continued in the brace.
- ◆ 6 weeks:
 - The brace is discontinued, unless needed for protection.
 - Passive elbow extension exercises are initiated if needed.
 - Light strengthening exercises are initiated with light tubing or 2-3 pound weights for elbow flexion, extension, forearm rotation and wrist flexion and extension.
 - Ice is continued after strengthening exercises.

Clinical Follow-up

- ◆ The patient usually is seen at 3 weeks and at 5-6 weeks, then only as needed with doctor appointments, until full motion is achieved and to monitor the patient's strengthening program.

Phase III: 6 Weeks to 6 Months

Clinical Goals

- ◆ The strengthening program is gradually increased so that the patient is using full weights by 3 months. It may be as long as 6 months before a patient returns to heavy work.

Testing

- ◆ Grip strengthening
- ◆ Elbow ROM

Exercises

- ◆ Elbow ROM exercises are performed if ROM is not WNL
- ◆ Strengthening exercises to wrist, elbow, forearm, and possibly shoulder depending on sport and/or work requirements

Clinical Follow-up

- ◆ The patient is seen only as needed, usually with doctor appointments, to monitor progress with strengthening program.

DISCLAIMER

These general rehabilitation guidelines are created by physical and occupational therapist for the rehabilitation of various shoulder and elbow pathologies. These are to simply be used as guidelines. This information is provided for informational and educational purposes, only. Specific treatment of a patient should be based on individual needs and the medical care deemed necessary by the treating physician and therapists. The University of Kentucky and The American Society of Shoulder and Elbow Therapists take no responsibility or assume no liability for improper use of these protocols. We recommend that you consult your treating physician or therapist for specific courses of treatment.