

Distal biceps tendon rupture

(Information for assessing physicians)

ACUTE DISTAL BICEP TENDON RUPTURES REQUIRE URGENT ORTHOPAEDIC ASSESSMENT AND SURGERY

Distal biceps tendon ruptures are best treated with surgical repair within two weeks of the rupture. After three weeks, the success of surgical repair rapidly declines in many patients due to scar tissue growth, tendon retraction and degradation, which can result in permanent functional impairment to the worker.

Remember, WCB-Alberta's Visiting Specialist Clinic is intended to provide expedited access to non-urgent assessments and elective surgeries as available and not for urgent acute injuries such as fractures or these types of ruptures.

Distal bicep tendon rupture definition

A distal biceps rupture occurs when the tendon attaching the biceps muscle to the proximal radius is torn from the bone.

Cause

- This injury occurs mainly in middle-aged men during heavy work or lifting (i.e. lifting a heavy box or item while the elbows are bent).
- Often the load is heavier than expected or the load may shift expectantly during lifting. This forces the elbow to straighten even though the biceps muscle is working hard to keep the elbow bent. The biceps muscle contracts to handle the extra load and as the tension on the muscle and tendon increases the distal bicep tendon snaps or tears where it connects to the radius (eccentric load).

Symptoms

- When the tendon ruptures, it usually sounds and feels like a pop directly in front of the elbow.
- At first the pain is intense and then subsides quickly after tension is taken off of the pain sensors in the elbow.
- Swelling and bruising usually develop in front of the elbow and along the medial forearm. Muscle belly

deformity is often present with the muscle belly retracting proximally up the arm.

- The arm often feels weak with attempts to bend the elbow, lift the shoulder and especially to "twist" the forearm into supination.

Exam

- The patient will have obvious weakness to resisted supination. Often biceps muscular deformity is present. Patients develop medial forearm bruising within the first 48 hours.
- Positive hook test: The normal distal biceps can be "hooked" behind it on palpation. All other structures crossing the elbow cannot be "hooked". The biceps tendon can be palpated contracting when patient is asked to resist supination.
- Based on history and physical exam most distal biceps ruptures can be diagnosed. If uncertain then urgent MRI or ultrasound should be done the same week.

What should you do if you assess an injured worker with a possible bicep tendon rupture?

- Contact the orthopaedic surgeon on-call at the closest hospital to discuss the case (in Edmonton, you can also contact the Orthopaedic Consult Line at 1-800-282-9911). Reinforce with them that WCB-Alberta does not have any avenues to act in urgent cases. If the on-call surgeon feels it is appropriate, direct the worker to report to the emergency department for treatment and/or urgent triage.
- Document your findings in your report to WCB-Alberta.

References

- *The Hook Test for Distal Biceps Tendon Avulsion*, Shawn W. O'Driscoll, PhD, MD, Lucas B. J. Goncalves, MD, and Patricio Dietz, MD
- *Am J Sports Med* November 2007 vol. 35 no. 11 1865-1869