

# Battling a biceps injury

March 3 2010

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People who suffer from injuries to the distal biceps tendon may benefit from earlier surgical intervention and new surgical techniques, according to a review article published in the March 2010 issue of the *Journal of the American Academy of Orthopaedic Surgeons* (JAAOS).

Located in the front of the elbow, the distal biceps tendon attaches to the lower end of the biceps muscle, and is responsible for two primary motions:

- allowing the elbow to bend (elbow flexion), and
- allowing the arm to turn the palm upward (supination).

The study reported individuals who undergo surgery soon after their injuries experience faster and more complete recoveries than patients who are treated nonsurgically, as well as those whose surgeries are delayed.

"Over the last 10 years there has been an increase in techniques to repair the distal biceps tendon," said Karen Sutton, MD, assistant professor at Yale Medical School and attending orthopaedic surgeon at Yale New Haven Hospital. "Newer techniques allow for smaller incisions and often use one incision, instead of two. Moreover, the use of hardware can often return the strength of the tendon to within 90 percent to 95 percent of its original strength."

The study revealed surgical treatment offered a 30 percent greater improvement in elbow flexion and a 40 percent greater improvement in supination when compared to non-surgical treatment. Upper extremity endurance was also improved in patients treated surgically.

The results of the study also indicate surgery is most effective, and much simpler, when completed within two weeks of the initial injury.

"Early diagnosis and treatment of these injuries make surgical repair more straightforward," Sutton added. "The ability to locate the end of the tendon in surgery is easier within the first two weeks, and if the tendon is repaired during this two-week period, the patient should regain the majority of his or her elbow flexion and forearm supination strength. After two weeks, the tendon tends to [scar](#), making it more difficult to bring the tendon back to its original attachment."

Injuries to the distal biceps tendon most often occur as the result of a single trauma involving lifting or moving heavy weights, and may occur more frequently in patients over the age of 30 years, as well as those who smoke and individuals who take anabolic steroids, Sutton noted.

Because other muscles initially may compensate for some of the loss of function following a trauma, these injuries occasionally can be difficult to detect initially, causing treatment to be delayed in some cases, she said. A detailed medical history is one of the primary components used to detect these injuries. Patients who injure their arm during exercise or other activity should be aware of the following warning signs which may point to an injury of the distal biceps tendon:

- a "popping" sensation in the arm and bruising around the elbow at the time of injury;

- a change in the contour or shape of the biceps muscle; and
- pain and weakness in flexion and supination of the injured arm

Sutton said people can help prevent biceps injuries by:

- avoiding smoking and anabolic steroid use, which decrease blood flow to the tendon, increasing the likelihood of injury;
- avoiding lifting heavy weights using a biceps curl; and
- exercising caution when moving heavy objects, especially in individuals who smoke, take steroids, or are older than 30.

When a biceps injury does occur, Sutton said no matter which surgical technique is used, one of the most important factors in successful treatment is ensuring the surgery is not delayed.

"There are multiple ways to repair the tendon surgically, and the specific technique used is based on the experience of the surgeon and the latest biomechanical studies on strength and stability of various repairs," Sutton said. "For a healthy, active individual, it is best to seek medical attention quickly and to be evaluated by an orthopaedic surgeon if a tear is suspected, in order to ensure the best possible outcome."

Provided by American Academy of Orthopaedic Surgeons

Citation: Battling a biceps injury (2010, March 3) retrieved 25 April 2024 from <https://medicalxpress.com/news/2010-03-biceps-injury.html>

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