



QUESTION | I HAVE A 50 YEAR OLD MALE WHO HAS RUPTURED HIS DISTAL BICEPS TENDON. DO YOU RECOMMEND SURGERY FOR THIS CONDITION?

ANSWER | The bicep muscle attaches to both the shoulder and the forearm. The 'long head' enters the shoulder and the long and 'short heads' (bi=2) combine to form one tendon at the elbow. The tendon at the shoulder is called the proximal biceps tendon and the tendon at the elbow is called the distal biceps tendon.

Rupture of the distal biceps tendon at the elbow joint is uncommon and accounts for less than 5% of all biceps tendon ruptures. There is usually some degree of degenerative change within the tendon that predisposes it to rupture and it is seen almost exclusively in males. Ruptures of the distal tendon near the elbow usually occur when an unexpected force is applied to a bent arm. This is most commonly an activity such as lifting a heavy rock or doing weights at the gym. It can also happen during sports such as a rugby tackle or a snowboarder using the arm to try to break a fall.

Without surgical repair, patients who experience complete rupture of the distal biceps tendon will notice loss of strength at the elbow. This has been shown to be about a 30 % decrease in flexion strength and at least a 40 % loss of supination strength. Typically patients get fatiguing and pain in the elbow with repetitive use.

Initially the patient may notice bruising in the forearm and a change in the contour of their upper arm. They typically restore their range of motion quite quickly but have ongoing supination weakness.

Clinical Examination

Clinical examination will show absence of the biceps tendon in the antecubital fossa with a positive hook test. There will typically be a full range of motion of the elbow with normal extension and pronation power, either normal or reduced flexion power and supination weakness.

Investigations

Xrays should be performed to exclude any bony pathology but further investigations are generally not required. MRI scanning is occasionally needed to diagnose a partial tear of the tendon.

Treatment

There is no doubt that the best results are achieved with surgery, ideally within 3 weeks and certainly within 6 weeks of the injury. After this time patients are still better off with surgery but a reconstruction procedure with a hamstring tendon may be required rather than a direct repair.

If the tear is incomplete then surgery may not be needed (or if the patient is elderly or has very low demands of the arm). Most patients who want more normal use of their arm will benefit from surgery to repair the ruptured tendon to the bone. It is my experience that even patients with a partial tear continue to be symptomatic and request the surgery eventually. My preference is to use a 2 incision technique which has a very low complication rate. I immobilise patients in a backslab for one week to allow wound healing. They then limit their extension for 6 weeks but perform flexion, supination and pronation exercises regularly. Light lifting starts at 6 weeks and full usage is allowed at between 3 and 6 months depending on the quality of the tendon at surgery.

All surgical procedures have risks. While they are uncommon the complication which is most troublesome from this operation is called a cross union or synostosis. Bone grows in tissues that it would not normally form in as part of the healing process. This blocks the rotation of the radius and the patient loses the ability to rotate the forearm. It is not usually painful and usually responds well to a surgical release performed a few months later. There is no difference in the incidence of this complication with a one or 2 incision repair.

Generally speaking the procedure is a very successful one with patients returning to their previous level of activity.

Dr Doron Sher