RUPTURE AND FAILED REPAIR OF THE DISTAL BICEPS TENDON IN A COLLEGIATE CHEERLEADER

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Background: A 21 year-old, male, cadet cheerleader complains of pain over his anterior elbow after catching a flyer while practicing stunts. The patient reports that the traumatic impact was primarily absorbed by his left arm which was flexed at a 90 degree angle at the time of injury. The patient reports immediately feeling a “pop” and sharp pain in his cubital fossa. The patient also complains of having a “dead arm”, inability to actively flex his elbow, following the injury. Initial evaluation by an Athletic Trainer (AT) identifies obvious deformity just proximal to the cubital fossa. Assessment of range of motion, strength testing, and special tests are deferred due to this obvious deformity. Neurological and circulatory assessment are grossly within normal limits. Differential Diagnosis: Differential diagnosis in this patient includes cubital bursitis, bicipital tendinosis, entrapment of lateral antebrachial cutaneous nerve, elbow dislocation, radial head or tuberosity fracture and biceps tendon rupture. Treatment: The initial diagnosis of the AT is a distal biceps tendon rupture. The patient is immediately referred to an orthopedist for evaluation. Physician assessment reveals the same findings as the AT evaluation. An MRI is ordered, which confirms the diagnosis of a distal biceps tendon rupture. The patient is scheduled for a surgical repair ten days following the injury. Following the surgical repair, the patient is immobilized in a sling for 2 days before beginning PROM exercises in elbow and wrist flexion / extension. Rehabilitation is then progressed to include AAROM exercises of the elbow, forearm and wrist without limitation of motion. The patient is also instructed not to lift greater than two pounds with the involved upper extremity. Following several weeks of rehabilitation, the patient suffers a second mechanism of injury when he trips and falls with his left arm outstretched. The patient is again evaluated by the AT and the patient is again referred to an orthopedist for follow-up care. During the second physician visit, the Hook Test is performed, revealing a ruptured distal biceps tendon. Repeat MRI confirms a second distal biceps tendon rupture, which is again surgically repaired. A more conservative rehabilitation plan is implemented, including the use of a ROM brace locked at 90 degrees elbow flexion for four weeks. ROM limitations are then reduced to 45 degrees from full elbow extension during weeks 5-8 post-surgery; progressing to full elbow extension 12 weeks following surgery. Uniqueness: Distal bicep tendon ruptures are uncommon; constituting between 2-10% of all biceps tendon injuries. The incidence of injury is 2:100,000 in the general population. The injury occurs most commonly in males aged 50-70 years due to a sudden eccentric contraction of the biceps brachii. Post-surgical complications occur in 31-36% of cases. However, re-rupture is extremely rare, occurring in only 2% of cases. Conclusion: The patient continues his rehabilitation, beginning a progressive resistive exercise program of isometric strengthening (weeks 8-10), single plane AROM (week 10-12), and progressive resistive, isotonic exercise (beginning 20 weeks post-surgery). The patient is expected to return to unrestricted sport-specific activity 6-8 months following the second surgical repair. Relevant Evidence: In a study by O’Driscoll and colleagues, the Hook Test demonstrated a sensitivity and specificity of 1.00. By contrast, MRI results in a sensitivity of 0.92 and a specificity of 0.85 for identifying distal biceps tendon ruptures. Word Count: 542