

Distal Biceps Tendon Injury in a Division-I Offensive Lineman

Ben Rouah, Athletic Training Student; Jason Craddock, EdD, ATC, LAT, CSCS; Jenna Kennedy, MS, ATC, LAT; Shawn Felton, EdD, ATC, LAT
*Florida Gulf Coast University, College of Health Professions and Social Work, Fort Myers, FL 33965, barouah2971@eagle.fgcu.edu

ABSTRACT

In this case report, the athlete suffered an injury to the distal biceps tendon during practice. He was participating in a blocking drill when he heard a “pop” in his left arm. The athlete was referred to a physician and underwent an MRI where he was diagnosed with a grade III distal biceps tendon strain. The athlete was scheduled for surgery the following week. Following the procedure, the athlete underwent 21 weeks of rehabilitation.

INTRODUCTION

Most often, a grade III strain will occur following an eccentric load to a forcefully flexed elbow; this causes an avulsion of the tendon from the radial tuberosity. Following a complete rupture, the athlete will lose function and strength of the biceps muscle including flexion and supination. Most often times the patient will report an audible “pop” and a likely obvious deformity in the antecubital fossa. In the instance of an athlete, a surgical repair is the likely course of treatment to repair function and strength.

PURPOSE

This case highlights the presentation, diagnosis, and treatment of a grade III distal biceps tendon strain. This case also highlights the best ways to assist an athlete in their recovery, due to the uniqueness of the injury

PATIENT HISTORY

This athlete is a 20 year-old (76in and 317lb) Division-I offensive lineman. The athlete has a prior medical history of a metacarpal fracture; however, he has no previous history of upper extremity soft tissue injury or surgery. This athlete also participates a rigorous weight lifting routine.

DIFFERENTIAL DIAGNOSIS

- Grade III ulnar collateral ligament sprain
- Biceps tendon muscle belly strain
- Grade III distal biceps tendon strain

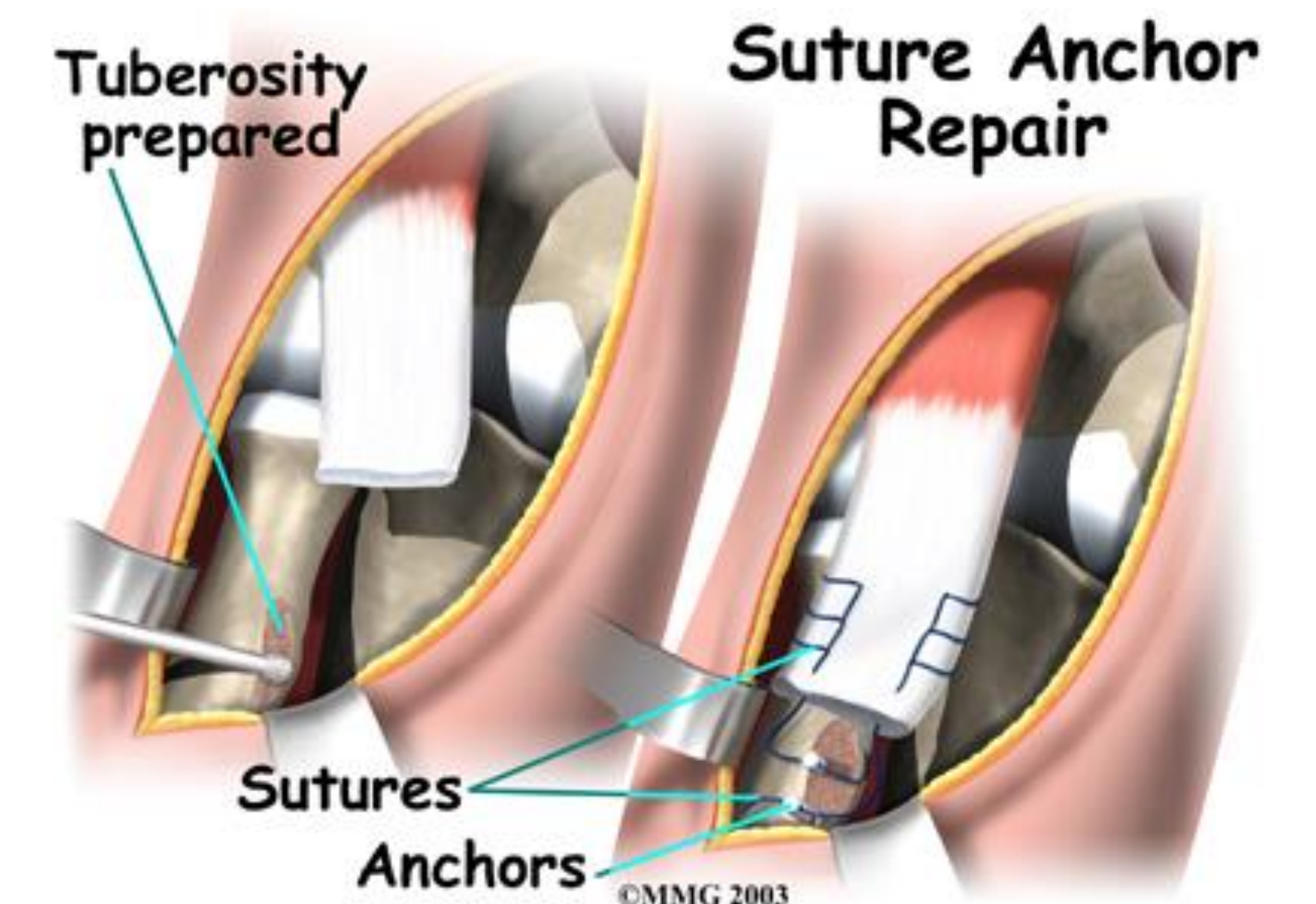


CLINICAL PRESENTATION

The athlete presented point tender over antecubital fossa and distal portion of biceps muscle belly. The athlete presented with no AROM in biceps flexion, however; passive ROM of flexion was pain free. Since there was no contraction during AROM, no manual muscle tests were performed prior to further evaluation.

UNIQUENESS

Distal biceps tendon (DBT) ruptures occur in roughly 1.2 of every 100,000 people, usually in men in the third-fourth decade of life. DBT injuries represent only 3% of total injuries that occur to the biceps muscle complex. This rivals the 96% that occur in the long head biceps tendon. Evidence has indicated the rate of incidence occurs among men with an average age of 47 years and a prior history of tobacco and/or steroid use. This case also highlights the use of an Endobutton and a two-incision technique procedure. The two incision method was used due to the evidence of increased flexion strength following rehabilitation. This case remains unique because of the age of the athlete as well as no predisposing factors to lead to the injury.



CONCLUSION

This case highlights the diagnosis and treatment of a Division-I offensive lineman with a distal biceps tendon rupture. The goal of the athlete is to return to his pre-injury level of strength and function; along with having the athlete return to full participation by the start of next season. Since distal biceps tendon ruptures are uncommon, it is important that the diagnosis is not overlooked. Since the athlete did not present with a previous history of biceps tendon or elbow injury, it makes the rate of injury fairly rare.

REFERENCES

- Walton, C.; Pennings, A.; Agur, A.; Elmaraghy, A. A 3-dimensional anatomic study of the distal biceps tendon: implications for surgical repair and reconstruction. *The Orthopaedic Journal of Sports Medicine*, 3(6), 1-6. doi: 10.1177/2325967115585113.
- Pascarelli, L., Righi, L.C., Bongiovanni, R.R., Imoto, R.S., Teodoro, R.L., Anjos-Ferro, H.F. (2013). Technique and results after distal braquial biceps tendon repair, through two anterior mini-incisions. *Acta Orthopædica Brasileria*, 21(2), 76-79. doi: 10.1590/S1413-78522013000200002.
- Quach, T., Jazayeri, R., Sherman, O.H., Rosen, J.E. (2010). Distal biceps tendon injuries: current treatment options. *Bulletin of the NYU Hospital for Joint Diseases*, 68(2). Retrieved from <http://hjdbulletin.org/files/archive/pdfs/283.pdf>.
- Johnson, T.S., Johnson, D.C., Shindle, M.K., Allen, A.A., Weiland, A.J., Cavanaugh, J., Noonan, D., Lyman, S. (2008). One-versus two-incision techniques for distal biceps tendon repair. *Hospital for Special Surgery Journal*, 4, 117-112. doi: 10.1007/s11420-008-9085-4