



Distal Biceps Tendon Repair: Trends in the United States 2015 to 2022

Poster 30

Adam B. Thompson, B.S.¹, Eugenia A. Lin, M.D.¹, Jose M. Iturregui, M.D.¹, Alexandra Cancio-Bello, M.D.¹, Anikar Chhabra, M.D.¹

¹Mayo Clinic Arizona Department of Orthopedic Surgery, Phoenix, AZ

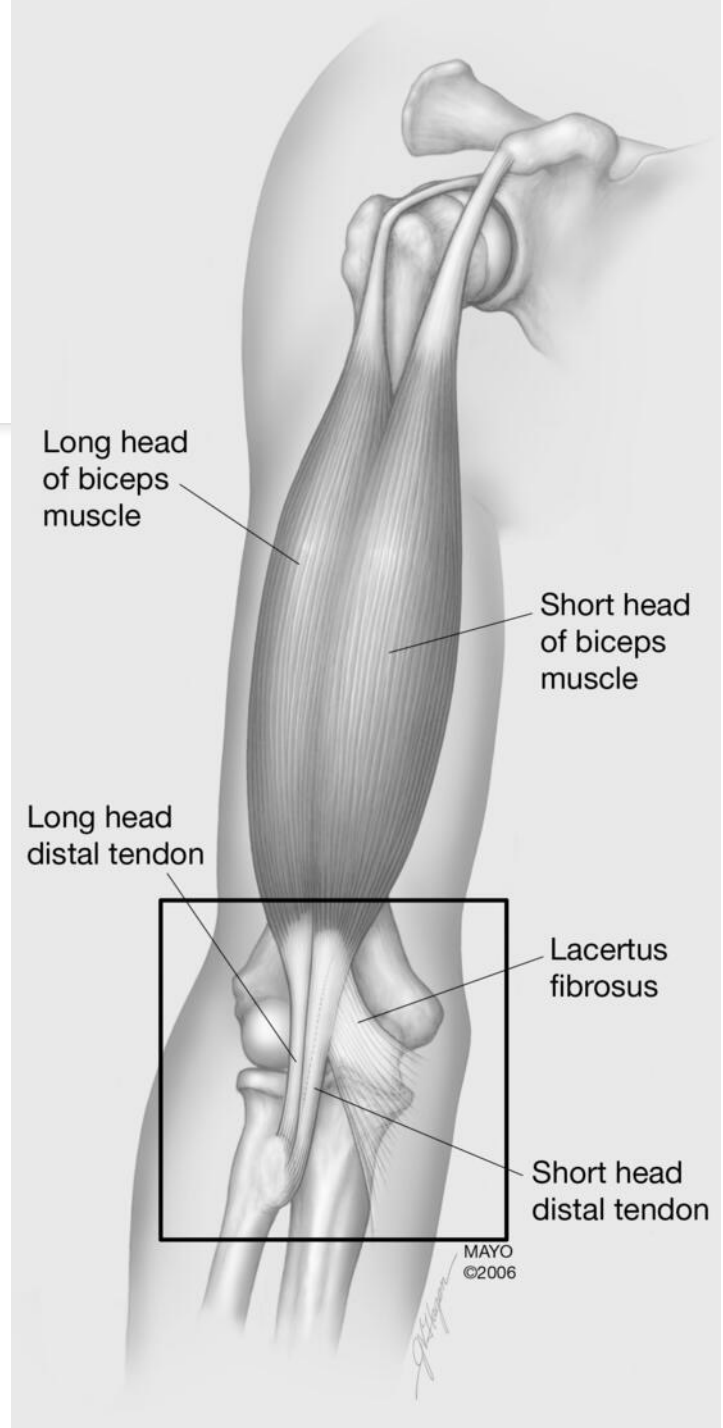


Disclosures

- The authors report no relevant conflicts of interest.

Background

- Distal biceps tendon injuries of the upper extremity are significant injuries affecting strength and function of the extremity.
- **Early diagnosis and surgical repair are the standard of care**, providing restoration of maximal supination and flexion strength following injury.
- Surgical repair aims to internally fix the torn tendon to its anatomic footprint on the radial tuberosity, commonly by a single or double-incision approach.
- While previous studies have assessed the trends of distal biceps tendon repair, **no studies have assessed these trends throughout the last decade on a national level.**



Objective



The purpose of this study was to *evaluate the current patient demographics, surgical patterns, and rates of postoperative complications associated with operative management of distal biceps tendon tears*, utilizing a large-scale national database of privately insured patients.



Methods

- Retrospective study utilizing the PearlDiver database, a national insurance de-identified database, to identify patients with distal biceps tendon injury and operative repair from 2015 to 2022.
- International Classification of Disease tenth revision (ICD-10) codes were used to identify patients diagnosed with distal biceps tendon rupture.
- Identification of surgical management was performed using Current Procedural Terminology (CPT) codes for reinsertion with or without graft (CPT-24342), or tenodesis to the brachialis (CPT-24340).
- Time to repair statistics and postoperative complications were assessed.
- Statistical analysis included descriptive statistics for demographic data including median time to repair, linear regression to examine difference in surgical trends over time, and the χ^2 test was employed to evaluate the relationship among categorical variables. Statistical significance was set as $P < 0.05$.





Results

- 18,036 patients with Distal Biceps Tendon Repair from 2015 to 2022
- 68% of surgical patients aged 40 to 59
- Median time from diagnosis to surgery: 9 days (SD 131.84 days)
- ***Surgical trend: 96.8% were Reinsertion with or without tendon graft***
- ***Revision rate of 4.7%; no statistically significant differences by age range***

MAYO
CLINIC



- Postoperative infection rate: 0.52%
 - Postoperative peripheral nerve injury rate: 0.11%
-

Results

Surgery	CPT Code	Subjects (% of total)	Postoperative Complication	Subjects (% of total)
Distal Biceps Reinsertion with or without tendon graft	24342	17,451 (96.8%)	Rerupture	855 (4.7%)
Distal Biceps Tenodesis	24340	585 (3.2%)	Infection	94 (0.52%)
Total	24342 & 24340	18,036 (100%)	Peripheral Nerve Injury	19 (0.11%)
			Compartment Syndrome	-1*
			Fibrosis	-1*
			Elbow Arthrofibrosis	0
			Heterotopic Ossification	0
			Non-healing Wound	0
			Synostosis	0

Fig 1. Surgical trends of distal biceps tendon repair including respective CPT codes and the patient population of each cohort.

Fig 2. Postoperative complications following distal biceps tendon repair. Postoperative infection, peripheral nerve injury, compartment syndrome, and non-healing surgical wounds were recorded within 30 days from surgery. Rerupture, fibrosis, synostosis, and arthrofibrosis evaluated within 1 year from surgery.

* "-1" in PearlDiver indicates a cohort of less than 11 subjects.

Results

Demographics	Subjects	P
Gender	--	<0.0001
Male	17,493	--
Female	543	--
Age Range	--	--
15 to 19	12	<0.0001
20 to 24	41	<0.0001
25 to 29	160	<0.0001
30 to 34	646	0.721
35 to 39	1707	<0.0001
40 to 44	2753	<0.0001
45 to 49	3371	<0.0001
50 to 54	3390	Intercept
55 to 59	2761	<0.0001
60 to 64	1792	<0.0001
65 to 69	944	<0.0001
70 to 74	462	<0.0001
75 to 79	191	<0.0001
80 to 84	36	<0.0001

Fig 3. Demographic data of all distal biceps tendon repair patients.
Statistical significance represented by $P < 0.05$

Conclusions

In the modern era of distal biceps tendon repair:

- Middle-aged males make up the largest cohort of operative patients
- *Surgeons exhibited a preference for prompt surgical intervention in treating distal biceps tendon injuries, notably favoring the anatomic reinsertion procedure.*

Postoperative complication rates were low overall, with revision being the primary risk for this population.





THANK YOU

References accessible via QR code:

