

BACKGROUND

Ruptures of the distal biceps tendon are commonly treated by orthopedic surgeons and sports medicine specialists. Existing outcome studies focus on **objective findings without evaluating patient-reported outcome measures**¹. While partial loss of strength and endurance may appear significant on functional testing, there is **little data to support that these differences are of clinical importance to the patient.**

OBJECTIVE

To clarify whether **operative or non-operative treatment of complete distal biceps tendon rupture is superior, based on patient-reported outcomes** using the QuickDASH questionnaire.

STUDY DESIGN

- Retrospective cohort study in a multi-center, community-based hospital population
- Inclusion criteria: age ≥ 18 years old, diagnosis of complete distal biceps rupture confirmed by chart review, English-speaking, and KP.org online membership. Partial biceps tendon ruptures were excluded.
- Patients were sent an online QuickDASH questionnaire (Figure 1), an 11-item scoring system that measures physical function and symptoms related to upper-limb musculoskeletal disorders.

Operative vs non-operative management of distal biceps tendon ruptures: patient-reported outcomes

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Patients with complete distal biceps tendon rupture treated operatively reported statistically significantly better patient-reported outcomes than those treated non-operatively.

QuickDASH					
Please rate your ability to do the following activities in the last week by circling the number below the appropriate response.					
	NO DIFFICULTY	MILD DIFFICULTY	MODERATE DIFFICULTY	SEVERE DIFFICULTY	UNABLE
1. Open a light or new jar.	1	2	3	4	5
2. Do heavy household chores (e.g., wash walls, floors).	1	2	3	4	5
3. Carry a shopping bag or briefcase.	1	2	3	4	5
4. Wash your back.	1	2	3	4	5
5. Use a knife to cut food.	1	2	3	4	5
6. Recreational activities in which you take some force or impact through your arm, shoulder or hand (e.g., golf, hammering, tennis, etc.).	1	2	3	4	5

	NOT AT ALL	SLIGHTLY	MODERATELY	QUITE A BIT	EXTREMELY
7. During the past week, to what extent has your arm, shoulder or hand problem interfered with your normal social activities with family, friends, neighbours or groups?	1	2	3	4	5

	NOT LIMITED AT ALL	SLIGHTLY LIMITED	MODERATELY LIMITED	VERY LIMITED	UNABLE
8. During the past week, were you limited in your work or other regular daily activities as a result of your arm, shoulder or hand problem?	1	2	3	4	5

Please rate the severity of the following symptoms in the last week. (circle number)					
	NONE	MILD	MODERATE	SEVERE	EXTREME
9. Arm, shoulder or hand pain.	1	2	3	4	5
10. Tingling (pins and needles) in your arm, shoulder or hand.	1	2	3	4	5

	NO DIFFICULTY	MILD DIFFICULTY	MODERATE DIFFICULTY	SEVERE DIFFICULTY	SO MUCH DIFFICULTY THAT I CAN'T SLEEP
11. During the past week, how much difficulty have you had sleeping because of the pain in your arm, shoulder or hand? (circle number)	1	2	3	4	5

Figure 1. QuickDASH questionnaire. Lower scores signify better patient-reported outcomes.



Take a photo or use a QRS phone app to view resources.

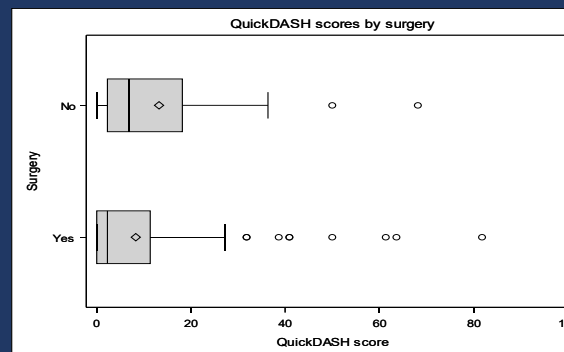


Figure 2: Non-operative and operative QuickDASH patient scores.

Patients who underwent surgery had an adjusted OR 0.60 for having QuickDASH score greater than 0, though this association was not significant ($p=0.291$). Among patients with scores greater than 0, patients who underwent surgery had significantly lower QuickDASH scores ($p=0.027$) (Figure 2).

RESULTS

- The study included 151 patients
- Mean overall QuickDASH score was 9.4 ($n=151$)
The non-operative group ($n = 34$) had a mean 13.2 (SD 15.8) and the operative group ($n = 117$) had a mean 8.3 (SD 14).
- Mean QuickDASH Work scores were 7.4 in the non-operative group and 6.2 in the operative group. Mean QuickDASH Hobby scores were 15.1 in the non-operative group and 11.3 in the operative group.
- Work and Hobby scores were lower in the operative group, but no statistical significant difference was found (Figure 3).

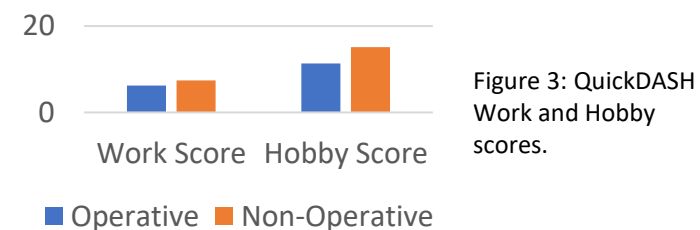


Figure 3: QuickDASH Work and Hobby scores.

DISCUSSION

- Data includes a larger patient population than most literature on distal biceps rupture management²
- Given overall low scores in both treatment groups, management of distal biceps rupture should consider the risks of surgery, post-operative recovery time, and costs of surgery