



Best approach for the repair of distal biceps tendon ruptures

Izaäk F Kodde, Michel P J van den Bekerom, Denise Eygendaal

Izaäk F Kodde, Michel P J van den Bekerom, Denise Eygendaal, Department of Orthopaedics, Upper Limb Unit, Amphibia Hospital, 4800 RK Breda, The Netherlands

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Correspondence to: Dr. Izaäk F Kodde, Department of Orthopaedics, Upper Limb Unit, Amphibia Hospital, Molengracht 21, PO Box 90158, 4800 RK Breda,

The Netherlands. if.kodde@hotmail.com

Telephone: +31-76-5955000 Fax: +31-76-5955000

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subject of debate. Despite the fact that this article currently presents the highest level of evidence for the surgical repair of distal biceps tendon ruptures, we have some comments on the study that might be interesting to discuss. We think that some of the results and conclusions presented in this study need to be interpreted in the light of these comments.

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Abstract

The preferred treatment of distal biceps tendon ruptures is by operative repair. However, the best approach for repair (single *vs* double incision) is still subject of debate. Grewal and colleagues recently presented the results of a randomized clinical trial evaluating two different surgical approaches for the repair of distal biceps tendon ruptures. Despite the fact that this article currently presents the highest level of evidence for the surgical repair of distal biceps tendon ruptures, we have some comments on the study that might be interesting to discuss. We think that some of the results and conclusions presented in this study need to be interpreted in the light of these comments.

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Key words: Distal biceps tendon; Elbow; Operation technique; Repair; Rupture

Core tip: The preferred treatment of distal biceps tendon ruptures is by operative repair. However, the best approach for repair (single *vs* double incision) is still

TO THE EDITOR

With great interest we have read the article of Grewal and colleagues^[1]. We have however, some comments on this trial and think that the conclusions of this article should be interpreted in this light. The preferred treatment of distal biceps tendon ruptures is by operative repair^[2,3]. A systematic review by Chavan *et al*^[4] showed that refixation of the distal biceps tendon is best done with a cortical button. However, the best approach for repair (single *vs* double incision) is still subject of debate. Grewal *et al*^[1] recently presented the results of the largest randomized clinical trial evaluating two different surgical approaches for the repair of distal biceps tendon ruptures. In this great piece of research were 91 acute distal biceps tendon ruptures randomized between a single incision repair with use of suture anchors ($n = 47$) or double incision repair with use of transosseous drill holes ($n = 44$). The postoperative treatment protocol was identical for both groups. Primary outcome measure was the American Shoulder and Elbow Surgeons elbow score and secondary outcome measures included number of complications, elbow range of motion, elbow strength, Patient Rated Elbow Evaluation and Disabilities of

Arm, Shoulder and Hand scores. After two years were outcome measure questionnaires completed by 91% of the patients. One patient in the single incision group had died. Six patients (three in both groups) were lost to follow up. Both at short term (3-6 mo) and long term (12-24 mo) there was no difference in mean outcome scores. The final isometric flexion strength was significantly better in the double incision technique. In addition, there were significantly more (minor) complications seen in the single incision group (predominately because of transient neuropraxias of the lateral antebrachial cutaneous nerve in this group). Despite the fact that this article currently presents the highest level of evidence for the surgical repair of distal biceps tendon ruptures, we have some comments on the study that might be interesting and relevant for the readers to be discussed.

Besides the difference in approach, there is also a difference in fixation technique used between both groups. This raises the question whether the presented differences between the groups (number of complications and especially the isometric flexion strength) is related to different approach used, or to the difference in fixation technique used. The article of Grewal *et al*^[1] suggests the first, though it can not be ruled out that the latter might be of even or greater importance. Previous studies^[4,5] concluded that suture anchor repair is a stronger fixation technique than transosseous drill holes.

Current study does not mention whether or not the biceps ruptures were complete or partial. If partial ruptures were included, the question rises whether or not these are divided equally between both groups. Since more dissection is required in complete ruptures, this might reasonably result in more complications.

The technique of drilling the holes is not described in detail; it is for example not clear in which direction the drill holes were made for both groups. This is of importance since drilling in the wrong direction can cause injury to the posterior interosseous nerve^[6].

The authors found more transient neuropraxias of the lateral antebrachial cutaneous nerve in the single incision group. This might be caused by more traction on the nerve during the single incision surgical approach. However, the single incision group represents more patients that are operated after 2 wk (38%) *vs* the double incision

group (25%). It is of interest whether this difference is significantly, as longstanding ruptures often need more dissection and possible more retraction of the soft tissues. From other part of the body we also know that that chronic pathology is more difficult to treat than acute ones^[7].

In conclusion, we think that Grewal and colleagues performed an excellent study, which represents a major contribution to the “distal biceps tendon reconstruction literature”. However, we think some of the results and conclusions presented in this study need to be interpreted with care. We hope that the authors can present some more information based on the above-mentioned comments in order to enrich the common knowledge in the repair of distal biceps tendon ruptures.

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