

# Effect of Dorsal Capsular Imbrication on Intraoperative DRUJ Instability following Arthroscopic TFCC Repair Surgery

CHEN-WEI YE, Yung-Cheng Chiu

## INTRODUCTION:

To assess the clinical outcomes and identify the ideal indication for implementing dorsal distal radioulnar joint (DRUJ) capsular imbrication after triangular fibrocartilage complex (TFCC) repair in cases of DRUJ instability.

## METHODS:

A retrospective study was conducted on patients who underwent arthroscopic TFCC repair between 2016 and 2021. Inclusion criteria were a symptomatic ulna fovea sign (>6 months) and dorsal DRUJ subluxation on MRI. A total of 225 patients were divided into two groups: Group 1 (n = 135) had a negative ballottement test after “Cross-form” TFCC repair (CR), and Group 2 (n = 90) had a positive test and received additional dorsal DRUJ capsular imbrication (CR + DCI). Clinical outcomes, including pain VAS, grip strength, modified Mayo Wrist Score (MMWS), wrist ROM, and PROMs, were assessed with a minimum 3-year follow-up.

The surgical procedure involved three steps: Part 1: “Cross-form” TFCC Transcapsular Repair (Figures 1–3); Part 2: Intraoperative Ballottement Test to assess DRUJ stability; Part 3: If Grade II or III instability was present, Dorsal DRUJ Capsular Imbrication was performed (Figure 5).

## RESULTS:

Patient characteristics are summarized in Table 1. Both groups showed significant postoperative improvements in pain VAS, grip strength, wrist ROM, MMWS, and PROMs compared to preoperative values (all P < 0.05). Recurrent DRUJ instability was observed in 3.7% of the CR group (Table 2) and 1.1% of the CR + DCI group (Table 3), showing a significant difference. Although the CR + DCI group initially had reduced ROM, no significant difference was found at final follow-up (Table 4).

## DISCUSSION AND CONCLUSION:

This study demonstrates that dorsal DRUJ capsular imbrication (DCI) significantly reduces postoperative DRUJ instability (1.1% vs. 3.7%) in patients with a positive intraoperative ballottement test. The DCI group showed improved grip strength and comparable long-term ROM. The intraoperative ballottement test is essential for identifying cases requiring DCI augmentation. DCI serves as a secondary stabilizer, reinforcing the dorsal capsule with two suture anchors in full pronation. No increased stiffness was noted, and transient sensory irritation (2.7%) resolved within two weeks.

In cases of chronic DRUJ instability with ulna fovea tears, “Cross-form” TFCC repair effectively restores stability. When residual instability is identified during ballottement testing, dorsal capsular imbrication provides reliable augmentation, offering a practical and effective approach to managing chronic DRUJ instability.

