Diagnostic Accuracy of the Ulnocarpal Grinding and Stress Test for Symptomatic Triangular Fibrocartilage Complex Tear

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Introduction

Provocative tests play a critical role in guiding further tests and subsequent treatment for patients with ulnar-sided wrist pain. The ulnocarpal grinding test (UCGT) and ulnocarpal stress test (UCST) are well-known provocative tests for triangular fibrocartilage complex (TFCC) tear. However, there is a paucity of studies investigating the diagnostic value of these tests.

This study aimed to determine the diagnostic value of the UCGT and UCST for symptomatic TFCC tear.

Material/methods

This was a retrospective diagnostic study on two provocative tests for TFCC tear, performed at tertiary referral hospital.

We searched electronic medical record database at our institution for patients who presented with wrist pain and underwent 3.0 T MRI or multi-detector CT-arthrography, and/or arthroscopy from January 2014 to December 2016.

We excluded patients with 1) age < 18 years, 2) fractures of the wrist, 3) infection or inflammation of the wrist including RA, gout, or CPPD, 4) no records of fractures of the wrist, 3) infection or inflammation of the wrist, and/or arthroscopy from January 2014 to December 2016.

We searched electronic medical record database at our institution for patients who presented with wrist pain and underwent MRI, or arthroscopy in the standard manner. Provocative tests for TFCC tear were performed at tertiary referral hospital.

Reference standard of the TFCC tear.

We used symptomatic TFCC tear as the reference standard and regarded patients with only TFCC tear associated with ulnar-sided wrist pain as disease-positive and patients with symptomless TFCC tear as disease-negative.

Statistical methods

We calculated the sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), negative likelihood ratio (LR), positive LR, and overall diagnostic accuracy, with their 95% confidence intervals, for the provocative tests. We used McNemar’s test to compare diagnostic accuracy of the two provocative tests. The level of statistical significance was set at P=0.05.

Results

Participants

Of the 339 consecutive patients who visited our institution with wrist pain and underwent MRI, or CT-arthrography, and/or arthroscopy, a total of 178 patients were included in this study (Fig 1). A total of 121 patients were found to have TFCC tear. Of these patients, 110 patients who presented with ulnar-sided wrist pain were allocated to the symptomatic TFCC tear group, whereas the remaining 68 patients were allocated to the control group.

Conclusions

The results of this study indicate that both the UCGT and UCST have limited diagnostic value for symptomatic TFCC tear, although the former had a significantly better sensitivity than the latter. Thus, provocative tests need to be regarded as part of the diagnostic process, and their results should be interpreted in the context of other relevant clinical information from history taking, laboratory tests, and imaging studies before establishing the diagnosis of symptomatic TFCC tear. Future studies with a prospective design and improved reference standard can elucidate the role of various provocative tests for symptomatic TFCC tear.

Reference
