

# Editorial Commentary: Ulnar Variance Is Not the Sole Determinant of Arthroscopic Wrist Triangular Fibrocartilage Complex Repair Outcome: Considering the Forest From the Ulnar-Positive Tree



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**Abstract:** When choosing the best treatment option for patients with tears of the triangular fibrocartilage complex, there are multiple patient factors that should be carefully considered. The role of ulnar variance is often overemphasized when attempting to predict the success of arthroscopic repair. In practice, variables such as the age of the patient and location and nature of the tear as traumatic or degenerative should primarily drive the decision between arthroscopic repair and primary ulnar-shortening osteotomy. Arthroscopic repair should generally be avoided in favor of ulnar-shortening osteotomy in patients with degenerative tears and evidence of ulnar impaction syndrome. However, for acute, traumatic, ulnar-sided tears in young patients, arthroscopic repair remains an effective treatment option regardless of ulnar variance.

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The impact of ulnar variance on the successful treatment of triangular fibrocartilage complex (TFCC) tears has long been debated and has been a focus of our department's own research.<sup>1</sup> We were therefore interested to read the article "What is the Effect of the Ulnar-Plus Variance on the Outcomes of Arthroscopic Repair for the Peripheral Ulnar-Side Triangular Fibrocartilage Complex Tear?" by Kwon, Lee, and Lee.<sup>2</sup> This retrospective comparison study of patients undergoing arthroscopic repair of peripheral ulnar-sided TFCC tears sought to determine whether ulnar variance affected postoperative Disabilities of the Arm, Shoulder, and Hand questionnaire (DASH) scores, visual analog scale scores, and the rate of subsequent revision to ulnar-shortening osteotomy (USO). Although the authors found no difference between their ulnar-positive and ulnar-neutral/negative cohorts with regard to outcomes or revision rates, they did find

that the presence of a concomitant degenerative, central tear was a significant risk factor for revision to USO. This finding accurately demonstrates that ulnar variance is not the only determinant of success of arthroscopic repair of TFCC tears.

Previous literature has identified multiple risk factors to be associated with the failure of arthroscopic repair. The current study cites our own 2005 case series, in which we were the first to identify patient age as a risk factor for poor outcome.<sup>1</sup> In this study of 35 patients with traumatic ulnar-sided peripheral tears, patients older than 50 years of age, regardless of additional variables, reported only good or poor results by DASH score following arthroscopic repair. This finding is intuitive, considering that the TFCC undergoes age-related changes that predispose to degenerative tears of the disk and surrounding ligaments, with incidence increasing from the third to fifth decades of life. Although our study also demonstrated ulnar-positive variance to be associated with worse outcomes compared with ulnar-negative variance, we believe that ulnar variance should not be viewed in isolation but rather considered as part of the full presentation. Equally important to consider are the age of the patient, chronicity of the tear, presence of distal radioulnar joint instability, weight-bearing requirements for the wrist (i.e., gymnastics, competitive cheer, etc.), evidence of ulnocarpal impaction syndrome, and other degenerative injuries. For

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The authors report the following potential conflicts of interest or sources of funding: D.S.R. reports other from Acumed, outside the submitted work. Full ICMJE author disclosure forms are available for this article online, as supplementary material.

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0749-8063/201230/\$36.00

<https://doi.org/10.1016/j.arthro.2020.07.033>

example, in the young patient with an acute, traumatic tear and a stable distal radioulnar joint, ulnar positive variance is unlikely to negatively affect the outcome of their arthroscopic repair.

Our group conducted a follow-up study in 2010 that compared the results of arthroscopic repair with ulnar shortening osteotomy for the management of type 1B tears in the setting of ulnar positive variance.<sup>3</sup> We ultimately found no difference between USO and arthroscopic repair in terms of postoperative wrist range of motion, DASH, or pain scores; however, both treatment groups achieved statistically significant improvements compared with their preoperative baseline. It is critical to highlight, however, that this and multiple of the articles cited by the current study routinely exclude degenerative tears when evaluating the impact of ulnar variance on outcomes. The current study found that 57% of their patients with coexistent degenerative central TFCC tears required revision of their index surgery with USO following arthroscopic repair of peripheral ulnar-sided tears. As a result, the authors correctly conclude that arthroscopic repair should be avoided in favor of primary USO for patients with degenerative tears suggestive of ulnar impaction syndrome. We agree with this strategy and have found ulnar shortening to be a safe, effective treatment option. Although USO does carry the risks of hardware irritation, malunion, and nonunion, the rates of these complications have decreased in recent years with improved implant design and surgical technique.<sup>4</sup> It remains reasonable to attempt arthroscopic repair in patients without evidence of ulnar impaction syndrome, with the understanding that a subset of patients may have persistent ulnar-sided symptoms following repair<sup>5</sup> and can still benefit from an ulnar shortening at that time.<sup>6</sup>

The main limitation of this study, which the authors correctly acknowledge, is its small sample size, which

was underpowered to detect meaningful differences in revision rates and outcomes. With small numbers of patients comes a tendency to combine treatment groups and modalities, which introduces heterogeneity into the analysis. The authors in this study combined peripheral tear types (superficial vs deep avulsions) as well as repair methods (capsular vs transosseous repairs) to improve the small sizes of their cohorts. Despite these limitations, the current study is valuable and serves to emphasize that ulnar variance is only one variable affecting the success of arthroscopic repair of the TFCC.

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