Comments on “The Diagnostic Utility and Clinical Implications of Wrist MRI in the Pediatric Population”

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Sebastian Farr¹

Dear Editor,

With great interest, I read the study of Gornitzky et al, who evaluated the utility of wrist magnetic resonance imaging (MRI) in a pediatric population.⁵ Although this paper was well conducted, I believe that some issues need to be further discussed.

Previous studies have directed our understanding toward the fact that pediatric patients with so-called wrist sprains do in fact have some sort of underlying bone pathology such as bone contusion or occult fractures.³ These results have been shown to change the clinical consequences in 35%, which is—despite all necessary resources needed to obtain an MRI—a considerably high rate. This is in accordance with our own results. We were surprised that a high rate of triangular fibrocartilage complex (TFCC) tears (81%) was found in our pediatric cohort with chronic, ongoing wrist pain necessitating further intervention for many cases.⁴ Our study has thus shown that not all pediatric wrist injuries heal spontaneously. Although MRI was not an optimal method to reliably delineate each and every pathology from healthy intra-articular and extra-articular structures, it can certainly help to show important structural changes, which can not be seen in simple native radiographs. In times of increasing malpractice lawsuits, one should take advantage of this imaging modality before directly proceeding to (arthroscopic) surgery. Of note, MRI results should be read only in conjunction with clinical presentation and radiography to provide the best possible advice to parents and caregivers.

The authors evaluated MR images but did not provide information on who (radiologist vs orthopedic surgeon) evaluated the reports, and whether 1.5 or 3.0 Tesla machines were used.⁵ The fact that the actual images have not been reviewed is a major bias and would most likely have resulted in a much higher rate of detection. I would also be interested to know more about the indication and findings of the 1-year-old child included in the age range of 1 to 19 years. While MRI can definitely be indicated for toddlers/infants with, for example, early-onset juvenile idiopathic arthritis, another to our opinion frequent clinical finding—habitual wrist/mid-carpal instability—can not be delineated on MRI.² This may be one of the potential causes for therapy-resistant wrist pain but unremarkable findings of MRI in the current study, or even unremarkable findings of diagnostic wrist arthroscopy.

In summary, MRI is a useful tool to further search for any occult (scaphoid) fractures, TFCC lesions, and ganglion cysts besides others. However, to indicate surgery, I agree with the authors that one should not rely exclusively on this imaging modality but rather see “the big picture.” As negative MRI may not reliably rule out all pathologies, wrist arthroscopy should be performed if therapy-resistance is reported, proper clinical and radiological examinations have been performed, and parents search for definitive answers.¹ Anatomic variations or malformations may warrant earlier arthroscopic exploration.⁴ Nevertheless, in these special cases we should definitely obtain an MRI beforehand despite the fact that it might not be an ideal screening tool.

Sincerely,
Sebastian Farr

Orthopedic Hospital Speising, Vienna, Austria

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¹Orthopedic Hospital Speising, Vienna, Austria

Corresponding Author:

Sebastian Farr, Department of Pediatric Orthopedics and Adult Foot and Ankle Surgery, Orthopedic Hospital Speising, Speisingerstrasse 109, Vienna 1130, Austria.
Email: sebastian.farr@oss.at