Diagnostic Utility of MRI Scans in Pediatric Wrist Injury

Alex Gornitzky 1

1. University of Pennsylvania School of Medicine

✉ Corresponding author: Alex Gornitzky, alexgor@mail.med.upenn.edu

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Abstract

MRIs are an invaluable diagnostic tool in the workup of pediatric patients with wrist injuries, particularly for those patients presenting with acute onset or chronic wrist pain following negative X-rays. Yet they remain a limited resource in many clinical scenarios. Here, we conducted a comprehensive review of 313 consecutive wrist MRIs ordered at the Children’s Hospital of Philadelphia in a recent five year time span in order to construct an evidenced-based approach towards the workup of these patients. We analyzed results using chi-square analysis and an MRI scoring system designed to estimate the clinical impact of each study. In our study, females were more likely to present for wrist MRIs, as well as more likely to present with wrist pain. Additionally, females were more likely to have a normal MRI of the wrist and less likely to have a result with definitive clinical significance. Overall, we found that referring physician department or cause of pain onset had no differential effect on the MRI outcome. The clinical impact of MRIs also correlated with the presence or absence of an indicating reason as well as the degree of corresponding findings on physical exam. In conclusion, we present here a number of evidenced-based findings for consideration during the workup of pediatric patients with pain for possible wrist MRIs.