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A retrospective study of pediatric knee osteochondritis dissecans: Effect of surgical treatment

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Introduction: Osteochondritis Dissecans (OCD) is an alteration of subchondral bone and adjacent articular cartilage. The goal of treatment is to allow patients to return to activities pain-free and avoid progression to osteoarthritis. Radiographic healing helps determine return to activities. The goal of this study was to compare sizes and time to healing of OCD lesion between surgical and non-surgical treatment from 0-24 months follow-up using serial

anterior-posterior (AP) and intercondylar notch radiographs and identify differences in Lysholm activity scores between stable and unstable lesions.

Methods: Retrospective chart review of patients diagnosed with OCD at Children's Hospital of Wisconsin from 2004 to 2016. This study evaluates patients who had surgical intervention, including both stable and unstable lesions as compared to non-surgical treatment based on demographics, activity level, lesion size, and treatment course.

Results: In total, 625 patients had an OCD diagnosis, of which 116 lesions on 107 knees in 100 patients fit our inclusion criteria. Mean patient age was 11.5±2.5 years and the mean length of follow-up was 2.3±1.2 years. Unstable OCD lesions had significantly improved Lysholm activity scores at 24-months compared to stable

lesions (p=0.0009). Surgical treatment showed reduced lesion size compared to non-surgical patients in the coronal plane on AP radiograph at 12 and 24-months (p=0.0007). Surgical treatment of larger lesions produced relatively rapid healing, the overall defect area decreased sharply and by 24-months only 4.6% of the mean original defect area remained compared to 21.0% in non-surgical patients (p<0.0001).

Conclusion: This study demonstrates that surgical intervention of unstable and larger OCD lesions leads to a significant radiographic healing rate and significantly improved functional activity scores compared to stable and nonoperatively treated lesions

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