

Early Clinical Outcomes of Osteochondral Allograft for Capitellar Osteochondritis Dissecans in Adolescent Athletes

Junho Ahn¹, Garrett Sohn, Claire Clark, Charles W Wyatt², Nolan Daniel Hawkins³, Philip L Wilson⁴, Henry Bone Ellis⁵

¹University of Texas Southwestern Medical Center, ²Texas Scottish Rite Hospital For Children Sports Medicine Center,

³Orthopaedic Surgery, Scottish Rite For Children, ⁴Scottish Rite For Children, ⁵Texas Scottish Rite Sports Medicine

INTRODUCTION: [Osteochondritis](#) dissecans (OCD) of the humeral capitellum is an alteration of subchondral bone with the risk for instability and disruption of adjacent articular cartilage related to repetitive stress. Several surgical treatments for OCD lesions of the capitellum have been described previously. However, among the surgical options, use of osteochondral allograft (OCA) is sparsely reported in the literature. The aim of this study was to evaluate the early clinical outcome of young athletes after [OCA](#) for capitellar OCD lesions.

METHODS: [Forty-two patients \(47 elbows\)](#) treated with OCAs between 2012 and 2022 were reviewed. Patient-reported outcomes were collected preoperatively and at final follow up while clinical exam and radiographs was retrospectively reviewed.

RESULTS:

The average age of the cohort was 12.9 years (SD 1.5 years). Thirteen (27.7%) were male. Gymnastics/Cheer was the most common sport category (72.3%) followed by baseball (19.1%). The average follow-up period was 16.6 months (SD 14.0 months). Forty-four (93.6%) elbows demonstrated high rates of radiographic graft incorporation. Thirty-nine (83%) [returned to sport](#) at an average 9.2 months (SD 4.4 months) postoperatively. There was one (2.1%) superficial [surgical site infection](#) and 5 (10.6%) [reoperations](#). Patients reported significantly improved outcomes on the QuickDASH (31.2 vs. 6.2, $p < 0.001$) and Andrews-Timmerman (56.1 vs. 88.0, $p < 0.001$) scores. PediFABS demonstrated return to high activity level ([23.7 vs. 21.8, \$p = 0.15\$](#)). Elbow total arc of motion significantly increased postoperatively (133.6° vs. 141.8°, $p = 0.016$).

DISCUSSION AND CONCLUSION: In this series of OCA treatment for capitellar OCD lesions, young athletes demonstrated graft healing rates of greater than 90%, significant clinical improvement at final follow up, and return to sport. The current study suggests that OCA treatment of capitellar OCD appears to be an effective procedure that produces reliable improvement in patient elbow function and return to sport.

Pre and post-operative patient reported outcomes and range of motion measurements in patients undergoing osteochondral allograft for capitellar osteochondritis dissecans.

	Pre-op		Post-op	
	Values	SD	Values	SD
Range of motion, ° mean				
Flexion	136.5	8.5	140.7	7.6
Extension	3	13.6	-1.1	8.5
Supination	88.8	5.9	88.8	3.4
Pronation	82.3	6.4	84.1	7.3
Patient-reported outcomes, mean				
QuickDASH	31.2	18.5	6.2	9.7
Andrews-Timmerman	56.1	15.2	88.0	14.8
PediFABS	23.7	5.3	21.8	6.6

SD = Standard Deviation, QuickDASH = Quick Disabilities of Arm, Shoulder and Hand, PediFABS = Pediatric Functional Activity Brief Scale