

Novel Radial Head Donor Graft for Capitellum Osteochondral Autograft Transfer: A Cadaveric Biomechanical Analysis

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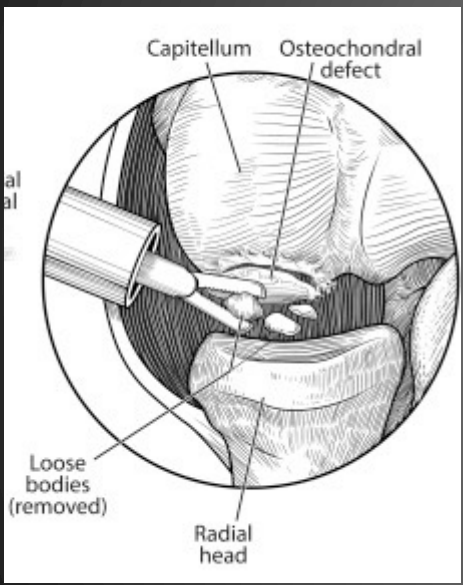
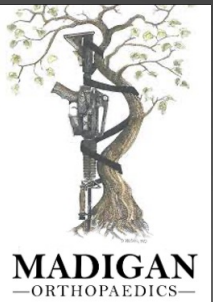
Disclosures



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Background



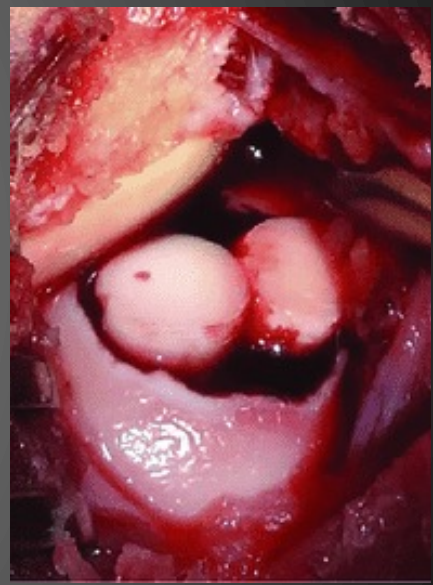
Debridement



Fragment Fixation



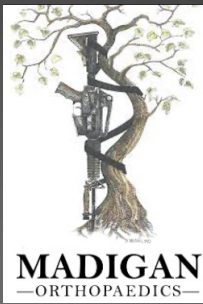
Marrow Stimulation



OATS/OCA

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Background



Radius of curvature of the radial head matches the capitellum: a magnetic resonance imaging analysis

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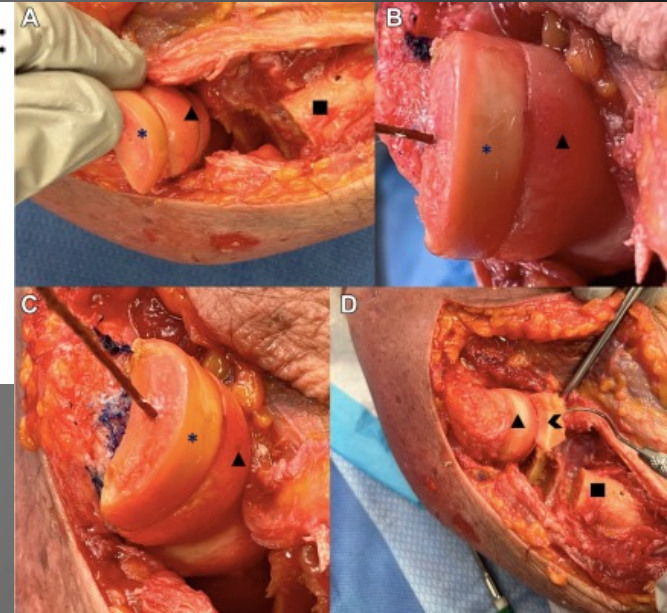
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Key Findings

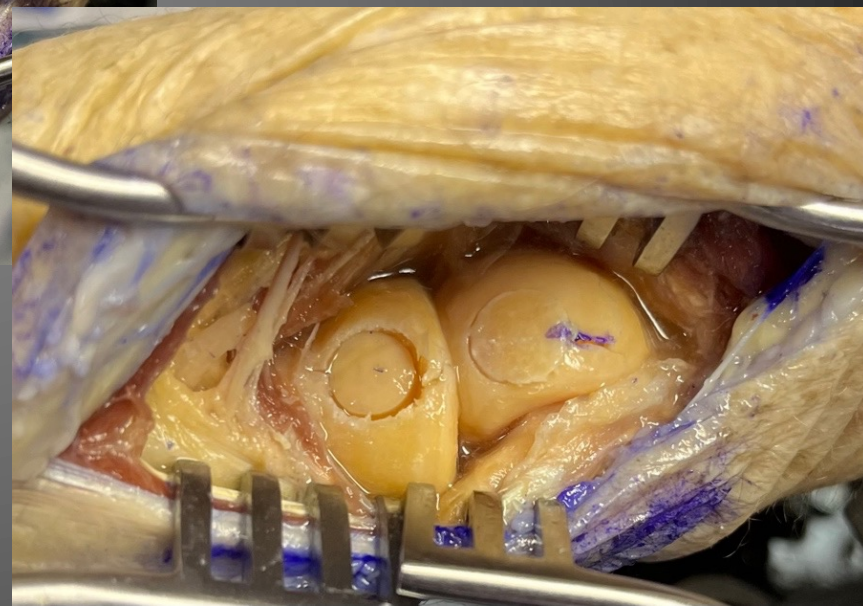
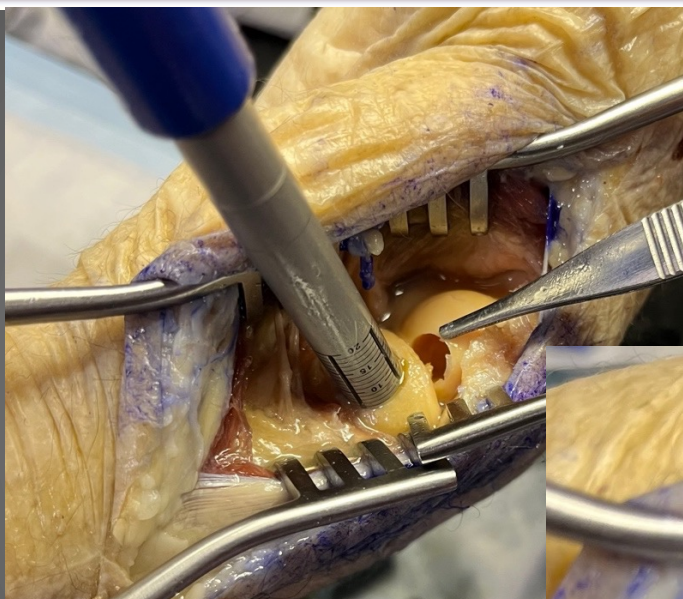
- Average ROC difference **<0.3mm** on MRI in 83 patients.
- Radial head height ~ **78%** articular width of capitellum



Methods

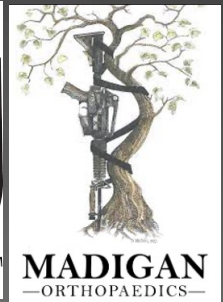


- 16 Cadavers
- EDC Split vs. Kaplan approach
- Capitellum vs. radial head cartilage thickness
- 8mm vs. 6mm donor plug
- Autograft plug vs. synthetic donor site backfill



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Results



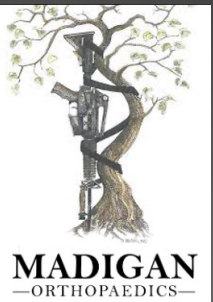
	EDC Split	Kaplan	P-value
Lateral 1/3 capitellum	8/8	8/8	1.0
Middle 1/3 capitellum	8/8	8/8	1.0
Medial 1/3 capitellum	1/8	6/8	0.01

	Capitellum	Radial Head	P-value
Average cartilage thickness	2.2mm	2.5mm	0.11



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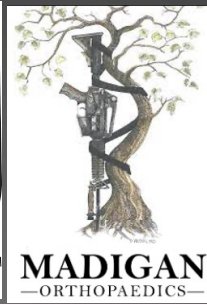
Results



	6mm	8mm	P-value
Iatrogenic fracture	0/8	2/8	0.47
	Autograft Plug	Calcium Phosphate	P-value
Avg. load to fracture (N)	2055	2293	0.11
	6mm	8mm	P-value
Avg. load to fracture (N)	2055	2293	0.58

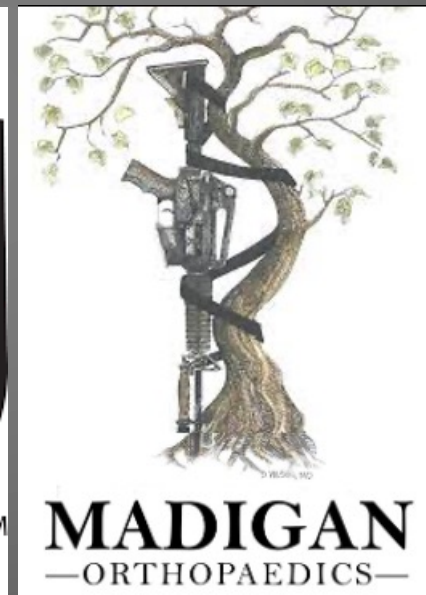


Conclusions



- **Kaplan approach** has improved far medial exposure
- **Similar average cartilage** thickness between the radial head and capitellum
- **No difference in load to fracture** with autograft plug versus calcium phosphate backfill
- **No difference in load to fracture** with 8mm versus 6mm donor plug

Thank you



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