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Boston
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MACI Case Series With Bone Involvement Requiring Autologous Bone Grafting

*Deryk Jones MD, Bhumit Desai MD, Jordan
Nester MD, Graylin Jacobs, Brian Godshaw
MD*

Ochsner Sports Medicine Institute
New Orleans, LA





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Disclosures:

Deryk Jones, MD

- Active Implants: Paid presenter or speaker
- Arthrex, Inc: Paid presenter or speaker
- Biorez: Stock or stock Options
- CONMED Linvatec: Paid presenter or speaker
- DePuy, A Johnson & Johnson Company: Paid presenter or speaker
- Genzyme: Paid presenter or speaker; Research support
- Linvatec: Paid presenter or speaker
- Mitek: Paid consultant; Paid presenter or speaker
- Musculoskeletal Transplant Foundation: Board or committee member;
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Purpose

- Matrix-induced autologous chondrocyte implantation (MACI) is a regenerative procedure aimed to recreate a hyaline-like repair tissue, restoring a biologically and biomechanically valid articular surface with durable clinical results.
- The purpose of this study is to assess patient reported outcome measures (PROMS) to characterize results using the MACI graft in place of the previous ACI or CACI “sandwich” procedures.



Methods & Materials

- Cohort study of prospectively collected data
- Inclusion criteria:
 - Previous MACI procedures with bony involvement, bone grafting, or sandwich technique with
 - Minimum 6-month follow-up
- Primary endpoint defined improvement of pain scores as measured at a min. 6M post-operative compared to preop
- Secondary endpoints included IKDC, KOOS, Lysholm, and SF-12 scores.
- Stats: generalized linear mixed model with a Poisson distribution and a random patient effect to account for correlations over time.
- All P-values adjusted for multiple comparisons using the Tukey-Kramer method with $\alpha < 0.05$ considered statistically significant



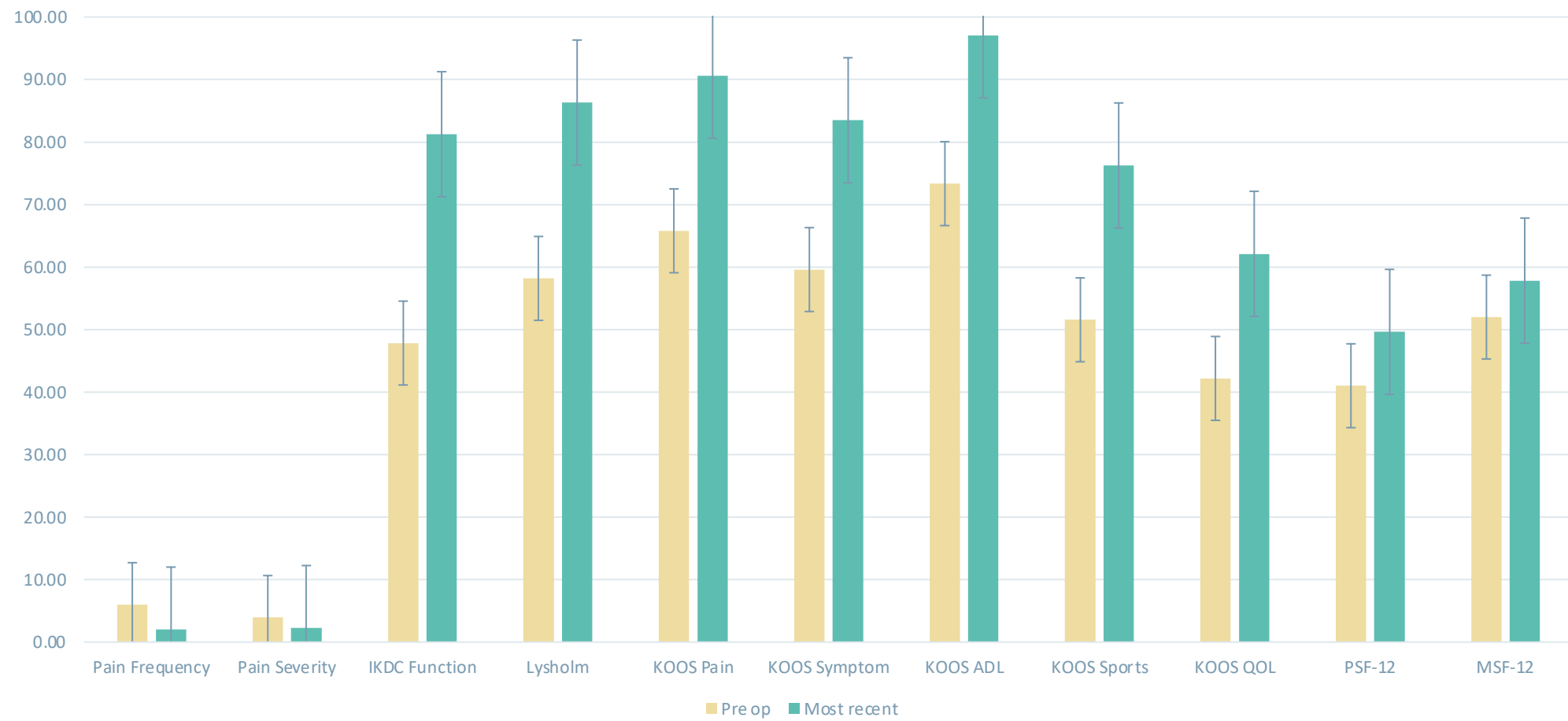
Results

Outcomes for Patients Undergoing MACI with Autologous Bone Grafting			
	Pre op	Most recent	p-value
Pain Frequency	6.00	2.00	< .001
Pain Severity	3.94	2.25	0.083
IKDC Function	47.84	81.25	< .001
Lysholm	58.19	86.31	< .001
KOOS Pain	65.80	90.63	0.002
KOOS Symptom	59.60	83.48	0.002
KOOS ADL	73.35	97.06	< .001
KOOS Sports	51.56	76.25	0.024
KOOS QOL	42.19	62.11	0.054
PSF-12	41.02	49.62	0.006
MSF-12	52.00	57.82	0.046



Results

MACI with Bone Grafting



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Key Conclusions

- 16 patients mean age 25.4 years underwent MACI for symptomatic osteochondral lesions with mean follow up 29.8 months (5-61 months)
- Statistically significant improvements were noted at most recent follow up in 9 of 11 outcome measures
- MACI has clinically significant results with mean post-operative follow-up greater than two years in improving patient reported outcome measures in patients requiring bone grafting





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