



Isolated Medial Patellofemoral Ligament Reconstruction for Recurrent Patellar Instability Regardless of Tibial Tubercle-Trochlear Groove Distance and Patellar Height: Differential Outcomes for Chondral Defects

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There is nothing to disclose that pertains to this particular study.

General Author Disclosures:

Beth E. Shubin Stein: Arthrex: Paid consultant/speaker; Conmed: Paid consultant, Research support; OrthopaedicsToday: Editorial Board; AJSM: Publishing board; AOSSM/OREF/AAOS: Multicenter grant

Elizabeth R. Dennis: Conmed: Paid consultant, ISAKOS: Committee Member

- Patellar instability commonly affects young patients, and is associated with concomitant chondral injury [1,2].
- The impact of chondral injuries on outcomes following isolated medial patellofemoral ligament reconstruction (MPFL-R) remain unclear.

This study sought to compare PROMs between individuals undergoing isolated MPFL-R (without concomitant bony realignment) in those with and those without cartilage intervention procedures.

Hypothesis: patients with full-thickness chondral defects requiring treatment would exhibit lower baseline PROMs, and these differences would be mitigated by cartilage intervention at the time of their index procedure.

- Patients were collected in a single institutional registry from March 2014-December 2019
- Exclusion Criteria:
 - Prior patella stabilization surgery
 - Inferior or lateral chondral lesion necessitating an offloading osteotomy
 - Anterior knee pain constituting >50% of chief complaint
 - "Jumping J" sign
- Inclusion criteria:
 - Primary MPFL-R without a concomitant bony alignment procedure
 - Recurrent instability: 2+ dislocations or 3+ subluxation events
- PROMs were collected pre-operatively, at 2 years, and at 5 years after surgery
- Patients were retrospectively assigned to cartilage intervention group if they underwent PJAC, OCA, ORIF, microfracture, or loose body removal at time of MPFL-R

Representative Cartilage Procedures

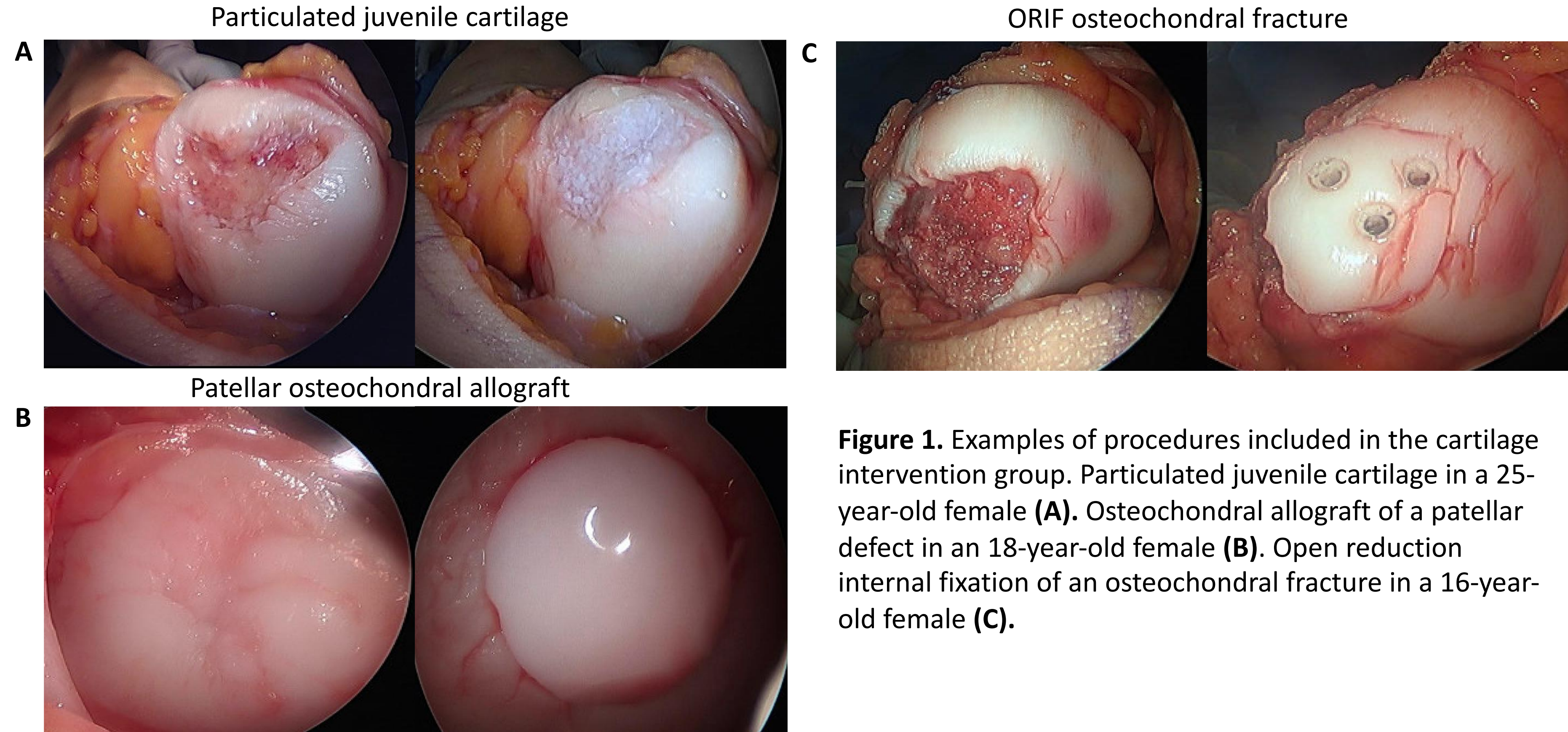


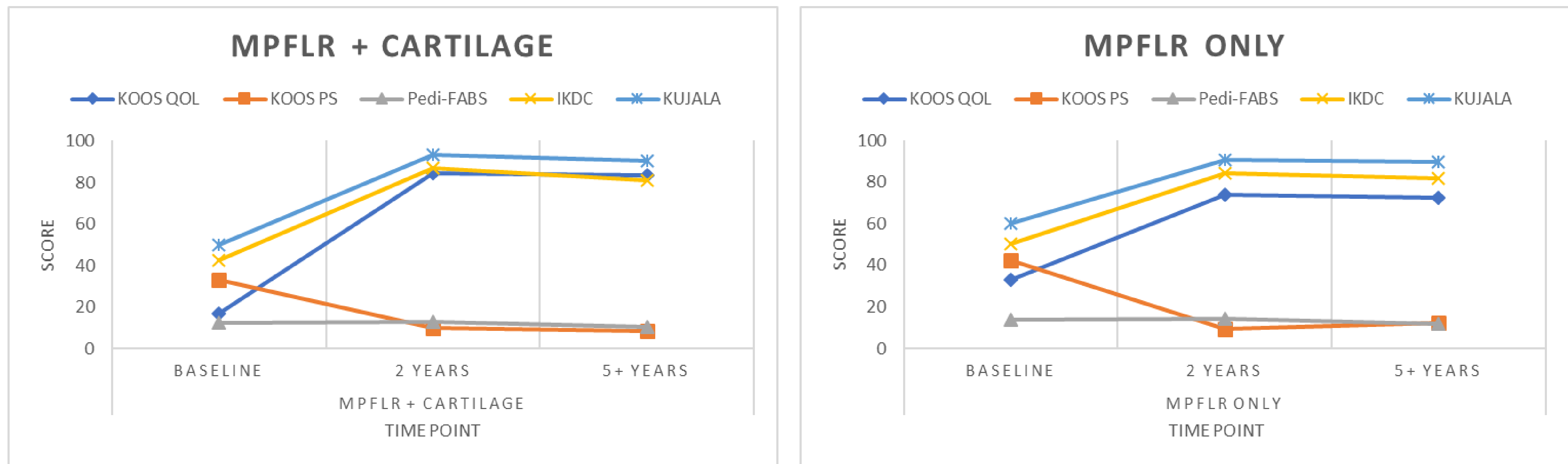
Figure 1. Examples of procedures included in the cartilage intervention group. Particulated juvenile cartilage in a 25-year-old female **(A)**. Osteochondral allograft of a patellar defect in an 18-year-old female **(B)**. Open reduction internal fixation of an osteochondral fracture in a 16-year-old female **(C)**.

Results: Patient Characteristics

Variable	MPFL-R + Cartilage (n = 22)		MPFL-R Only (n =114)		P-value
	Mean	SD	Mean	SD	
Age	20.82	5.63	19.86	6.13	0.3214
Sex					
F	13.00	59.09	84.00	73.68	0.1995
M	9.00	40.91	30.00	26.32	
BMI (kg/m ²)	24.32	4.66	23.37	4.11	0.4496
TT-TG (mm)	15.23	4.55	15.10	4.93	0.9901
CDI	1.14	0.16	1.14	0.16	0.7475
Tourniquet Time (minutes)	61.32	20.18	43.65	9.71	0.0002
Recurrent Instability (n, %)	0	0.00	6	5.26	0.589
Returned-to-Sport (n, %)	12	64.29	74	93.67	0.0103
Same/Higher Level	9	75.00	63	85.13	0.4317
Lower Level	3	25.00	11	14.86	
Time to RTS (months)	7.55	4.25	9.46	3.60	0.0461

All values reported as means and standard deviations except for Sex (n, % of group).

Results: Patient Reported Outcomes



- 119 patients reached >2 years, 89 (75%) completed PROs
- 50 patients reached >5 years, 40 (80%) completed PROs

Results: Patient Reported Outcomes

Table 2. Baseline Patient Reported Outcomes

Variable	MPFL-R + Cartilage (n = 22)		MPFL-R Only (n = 114)		P-value
	M	SD	M	SD	
KOOS QOL	17.08	15.93	32.98	20.53	0.0073
KOOS PS	33.24	15.81	42.41	12.58	0.0138
Pedi-FABS	12.73	8.17	13.72	10.03	0.8395
IKDC	42.51	19.48	50.30	17.24	0.0712
Kujala	49.80	20.51	60.05	18.19	0.0481

Preoperative PROMS were lower in MPFL-R patients with full-thickness cartilage lesions requiring treatment, compared to patients without these lesions.

Results: Patient Reported Outcomes

Patient Reported Outcomes at 2 Years

	MPFL-R + Cartilage		MPFL-R Only		
Variable	M	SD	M	SD	P-value
KOOS QOL	84.42	15.12	74.09	22.65	0.115
KOOS PS	9.79	7.38	9.49	11.10	0.3914
Pedi-FABS	13.20	7.88	14.49	9.76	0.7957
IKDC	86.82	7.45	84.08	16.11	0.8872
Kujala	93.07	6.24	90.59	12.76	0.9446

Patient Reported Outcomes at 5+ Years

	MPFL-R + Cartilage		MPFL-R Only		
Variable	M	SD	M	SD	P-value
KOOS QOL	83.33	15.14	72.66	23.53	0.3801
KOOS PS	8.70	12.71	12.28	13.05	0.3862
Pedi-FABS	10.67	4.18	11.68	6.80	0.729
IKDC	81.08	15.69	81.66	16.90	0.9496
Kujala	90.17	10.40	89.88	13.62	0.8729

Treatment of cartilage injuries at the time of MPFL-R resulted in resolution of differences in PROMs between groups at 2 and 5 years after surgery.

- Baseline PROMS were lower in MPFL-R patients with full-thickness cartilage lesions requiring treatment, compared to patients without these lesions.
- Treatment of cartilage injuries at the time of MPFL-R resulted in resolution of differences in PROMs between groups that was sustained at 2 and 5 years after surgery.
- Patients who required cartilage surgery demonstrated lower RTS rates than those who received MPFL-R without cartilage intervention.

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