



ChondroFiller as a Single-Stage Treatment for Knee Cartilage Defects: Early Clinical Outcomes

Tanvi Verma¹² · Paul Lee¹² · Selin Demirel³ · Elif İrem Kılıç³ · Ahmet Burak Çelik³ · Feza Korkusuz^{3*}

¹ MSK Doctors, Sleaford, UK ² London Cartilage Clinic, London, UK ³ Hacettepe University, Faculty of Medicine, Department of Sports Medicine, Ankara, Türkiye

* Feza Korkusuz, MD is an active member of Turkish Academy of Sciences (TÜBA).



BACKGROUND

Focal knee cartilage defects are an important source of pain and functional limitation. Because articular cartilage has limited intrinsic repair capacity, untreated lesions may enlarge and contribute to premature osteoarthritis and eventual arthroplasty. Established restorative techniques can require cell harvest, staged procedures, graft fixation or prolonged rehabilitation. ChondroFiller is an absorbable, cell-free type I collagen gel delivered arthroscopically after defect preparation. It conforms to the lesion and provides a three-dimensional scaffold intended to protect the defect and support endogenous repair in a single procedure.

AIM

To report early clinical and MRI outcomes after single-stage arthroscopic ChondroFiller treatment for symptomatic focal knee cartilage defects.

1 METHODS

Single-centre retrospective review of all adults treated during a 24-month period. Forty patients (42 knees) with MRI-confirmed focal ICRS grade III-IV defects and at least 12 months of follow-up were included.

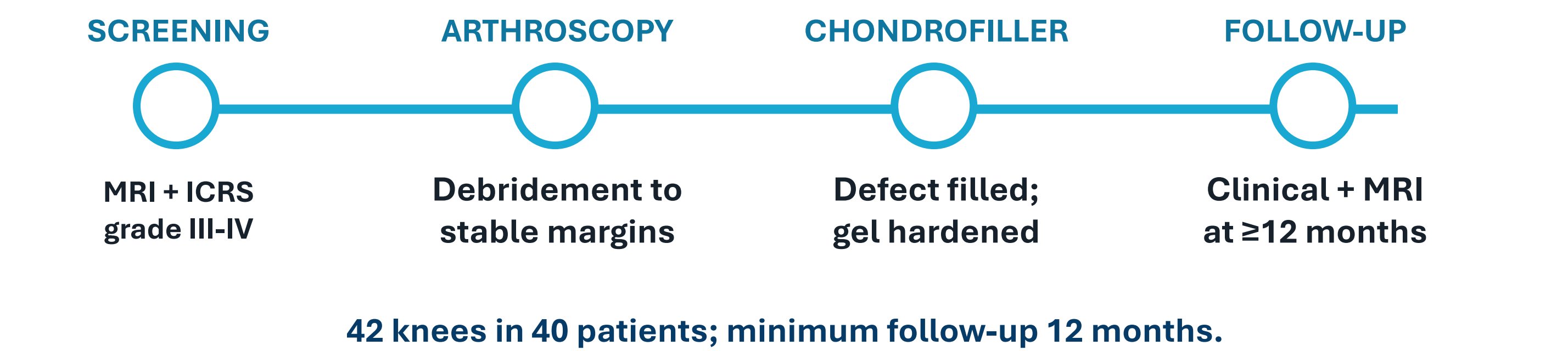
PRIMARY OUTCOME & ANALYSIS

Pre- and postoperative KOOS and activity VAS were compared with paired statistical tests. Satisfaction, return to activity, MRI defect fill and revision were assessed descriptively.

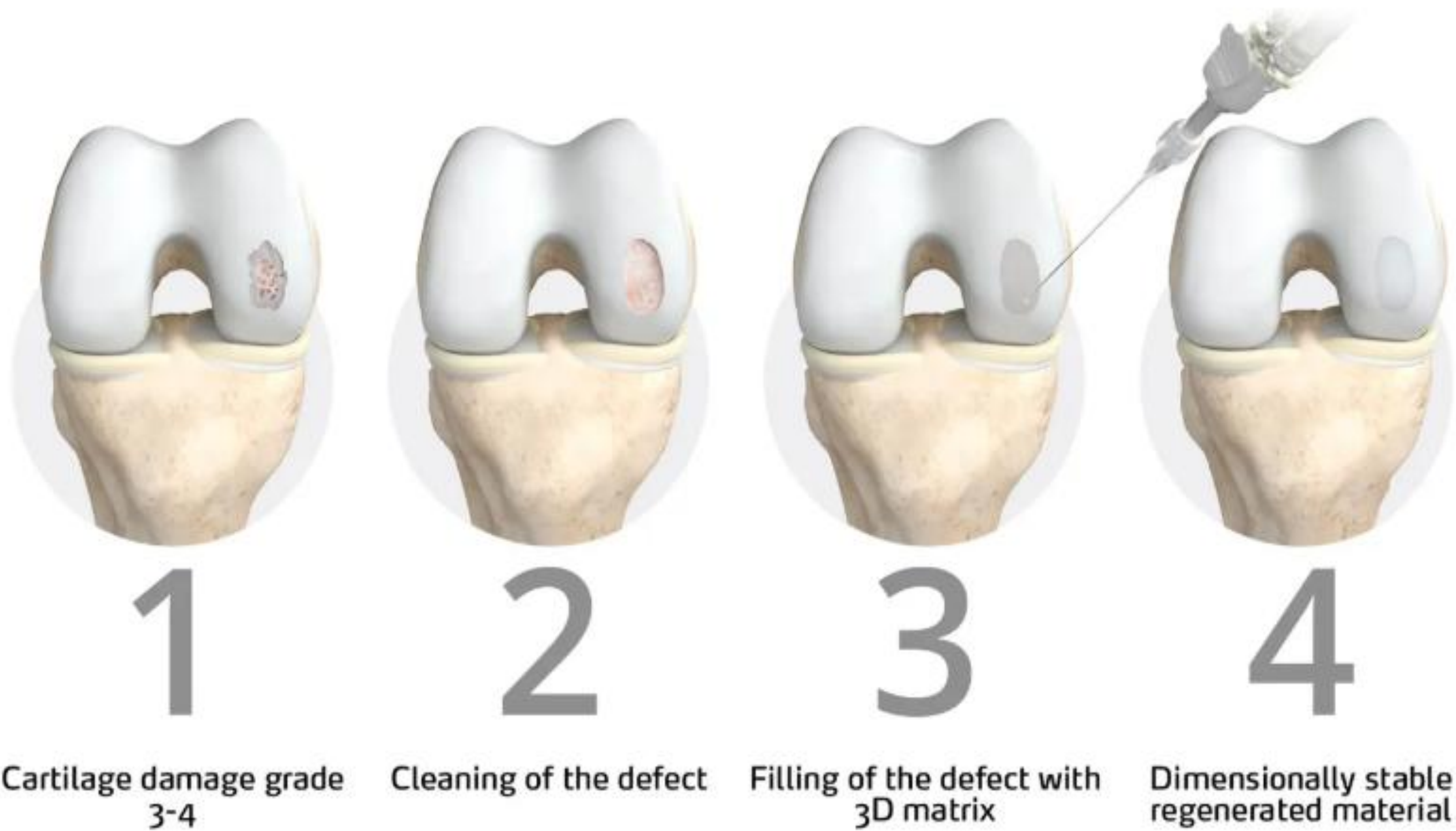
Design, participants & outcomes

DESIGN	Retrospective single-centre cohort over 24 months; 40 patients, 42 knees; minimum 12 months follow-up.
ELIGIBILITY	MRI-confirmed ICRS grade III-IV focal defect and symptoms despite at least 3 months of non-operative care; diffuse OA, major malalignment and prior index-site restoration excluded.
PROCEDURE	Arthroscopic debridement to stable cartilage and subchondral bone; collagen gel filled the defect and hardened in situ before closure.
OUTCOMES	KOOS, activity VAS, satisfaction, return to activity, MRI defect fill and revision; paired pre-post comparisons.

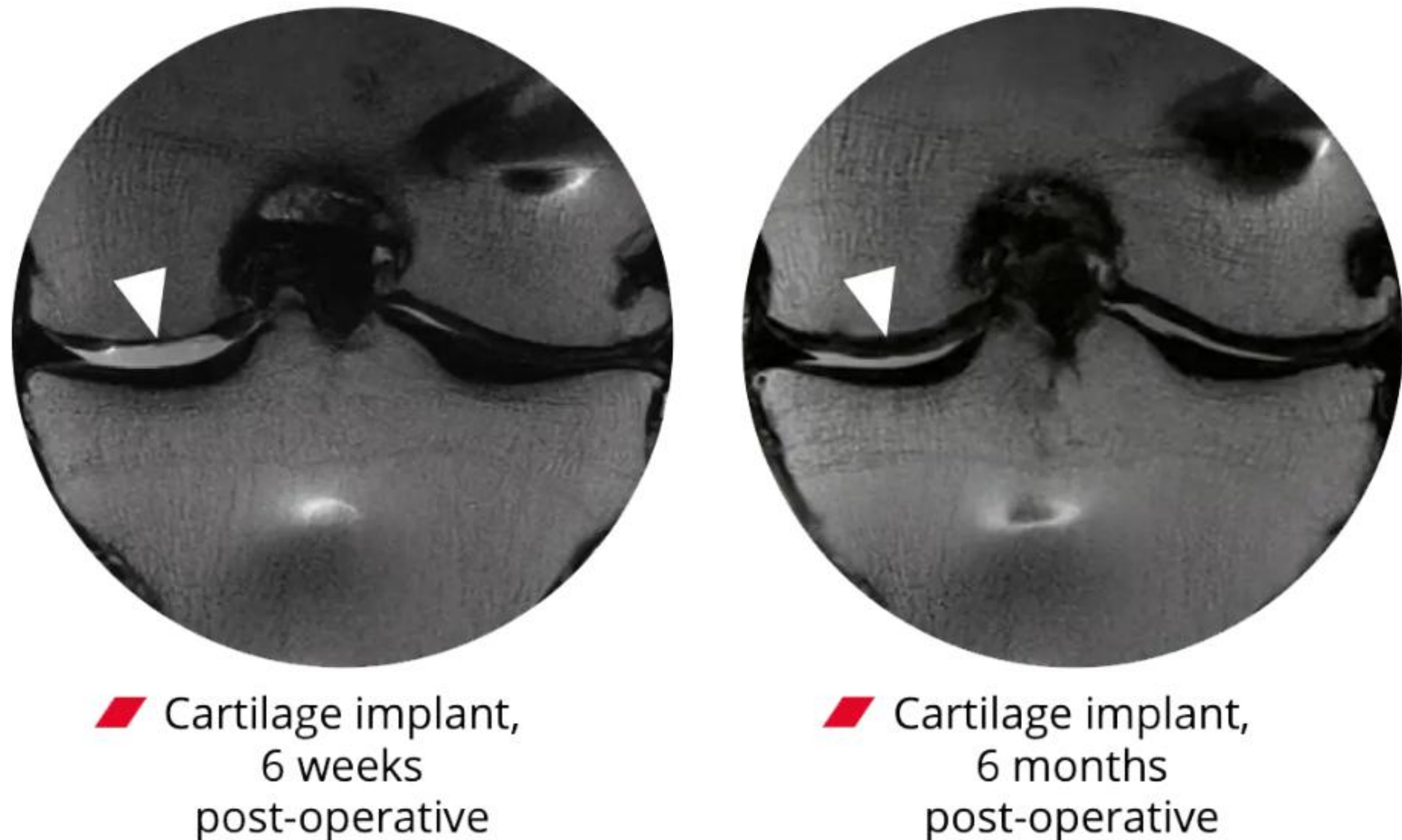
Study pathway



Single-stage procedure and imaging



MRI knee joint, post-operative

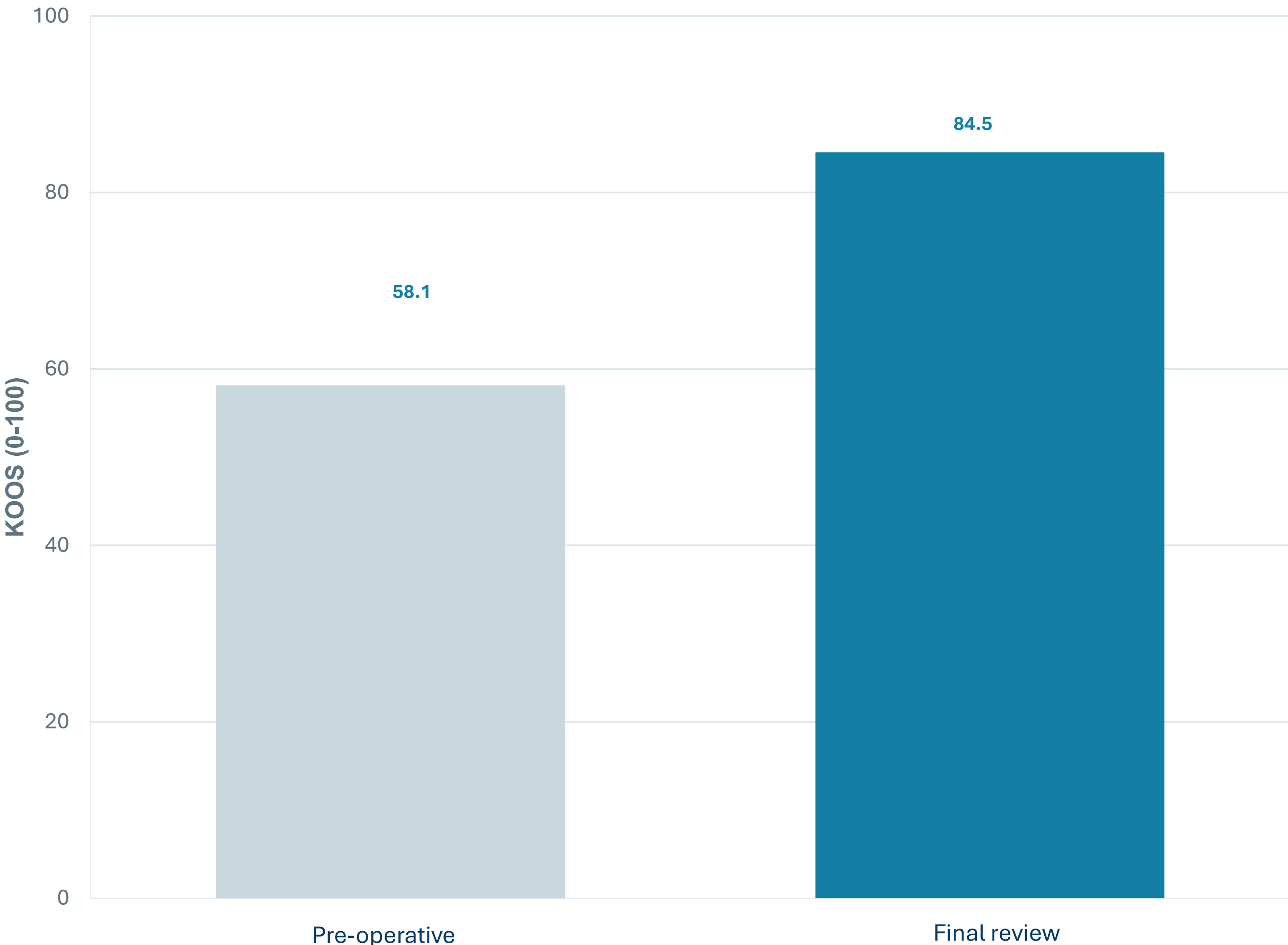


Source presentation: defect preparation and filling with a three-dimensional collagen matrix.

Representative postoperative MRI at 6 weeks and 6 months (source presentation).

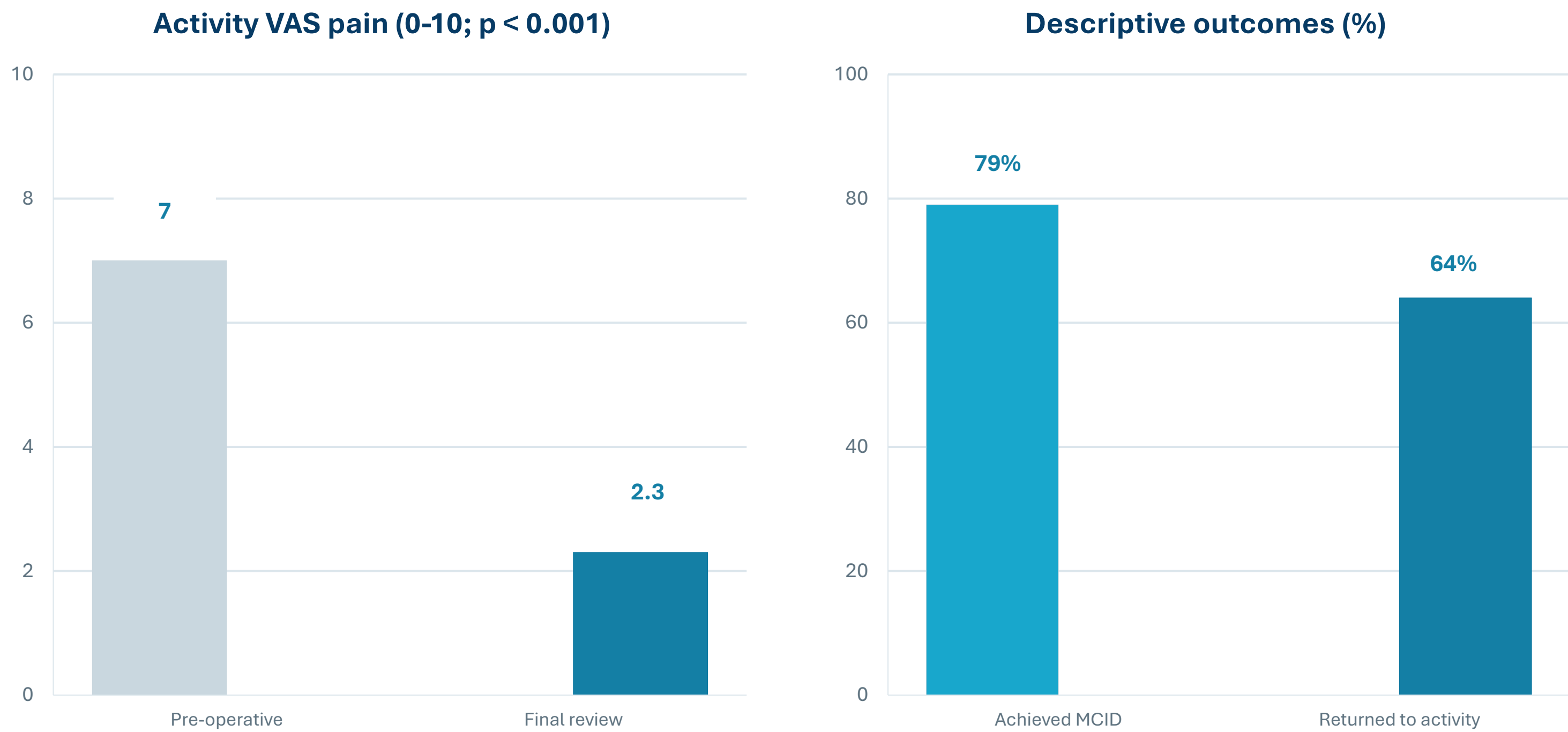
2 RESULTS & INTERPRETATION

KOOS improved after ChondroFiller ($p < 0.001$)



70% of follow-up MRIs showed complete or nearly complete defect fill
MRI at mean 14.6 months;

Pain and patient-reported outcomes



Baseline mean $\pm$ SEM; follow-up dispersion was not reported in the source deck. Proportions are descriptive.

Conclusion

Single-stage arthroscopic ChondroFiller was associated with clinically important improvement in knee function and activity pain, with favourable MRI defect fill in selected focal lesions.

Seventy-nine per cent achieved the minimal clinically important difference; 64% returned to preferred sport or recreation.

Limitations & next step

Larger comparative studies are required to assess durability and optimal indications.

TAKE-HOME MESSAGE

Early results support ChondroFiller as a minimally invasive single-stage option for selected focal knee cartilage defects.



For more information on I AM Regen
<https://iamregen.com/>

