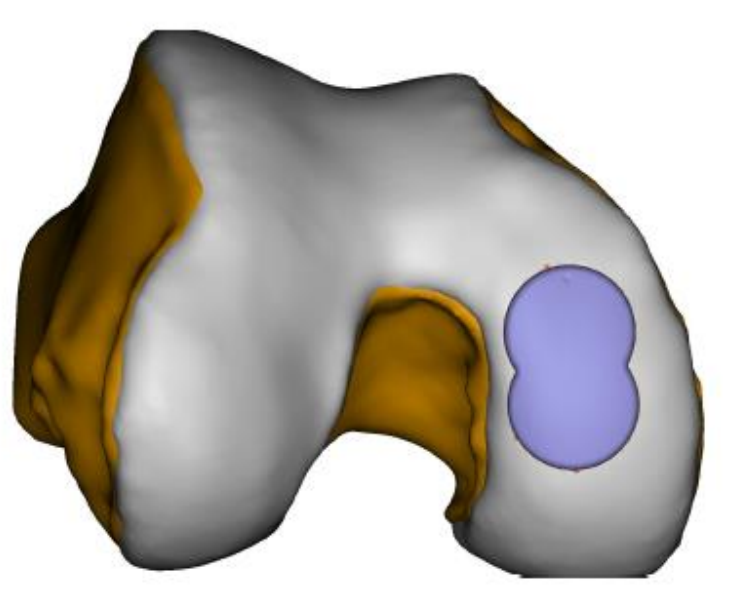


CLINICAL RESULTS OF AN INDIVIDUALISED MINI-METAL IMPLANT FOR FOCAL CARTILAGE LESIONS IN THE KNEE.



Results from International Multicentre Outcome Study on Episealer

T. Spalding, C. Stevenson, J. Holz, T. Jung, C. Kösters, M. Lind, L. Konradsen, M. Polacek, P. Verdonk, P. Emans, K. Eriksson, M. Högrström.

INTRODUCTION

Patients in the “gap age” 35-60 years old, with focal cartilage lesions are often considered too young for an arthroplasty and too old for biologic repair. Many may have already had failed prior surgery.

Mini-Metal implants are a novel option to treat joint surface lesions, and require careful evaluation to determine results expectations and thereby indications.

AIM

We report prospective detailed results of patients undergoing treatment for chondral defects using a patient specific 2nd generation individualized mini-metal implant.

METHODS

This study consists of the prospective analysis of sequential patients from 11 surgeons.

Patients had focal chondral or osteochondral lesions on femoral condyle or trochlea that had failed to improve on non operative treatment or who had previously undergone repair surgery that had failed.

Demographic, operative and clinical scores (VAS and KOOS) were collected preop and at 6, 12 and 24 months postoperatively.

Patients with minimum 12 months follow up were analysed.

AUTHORS

- Tim Spalding:** Coventry, UK
- Ciara Stevenson: Coventry, UK
- Johannes Holz: Hamburg, Germany
- Martin Lind: Aarhus, Denmark
- Karl Eriksson: Stockholm, Sweden
- Peter Verdonk: Antwerp, Belgium
- Pieter Emans: Maastricht, The Netherlands
- Tobias Jung: Berlin, Germany
- Clemens Kösters: Greven, Germany
- Lars Konradsen: Copenhagen, Denmark
- Martin Polacek: Drammen, Norway
- Magnus Högrström: Umeå, Sweden

EPISEALER IMPLANT

Detailed specific MRI data was used to manufacture patient specific implants and guide instruments by a CAD/CAM process, to fit the unique anatomy of each individual knee.

Implants were uncemented and made of chrome-cobalt, double coated with hydroxyapatite on top of titanium. (Episurf, Stockholm, Sweden).

GROUP DEMOGRAPHICS

92 patients (46 men, 46 women) with focal cartilage lesions ICRS grade 3 or 4 underwent partial resurfacing.

75 on medial condyle, 6 lateral condyle and 11 on trochlea.

Mean age 49 (27-69) years, and mean BMI 29 (21-41).

30% had failed previous cartilage surgery.

RESULTS: STUDY GROUP

12 month results in 65 patients:

- Female 38, Male 27.
- MFC 52, LFC 5, trochlea 8.

24 month results in 35 patients.

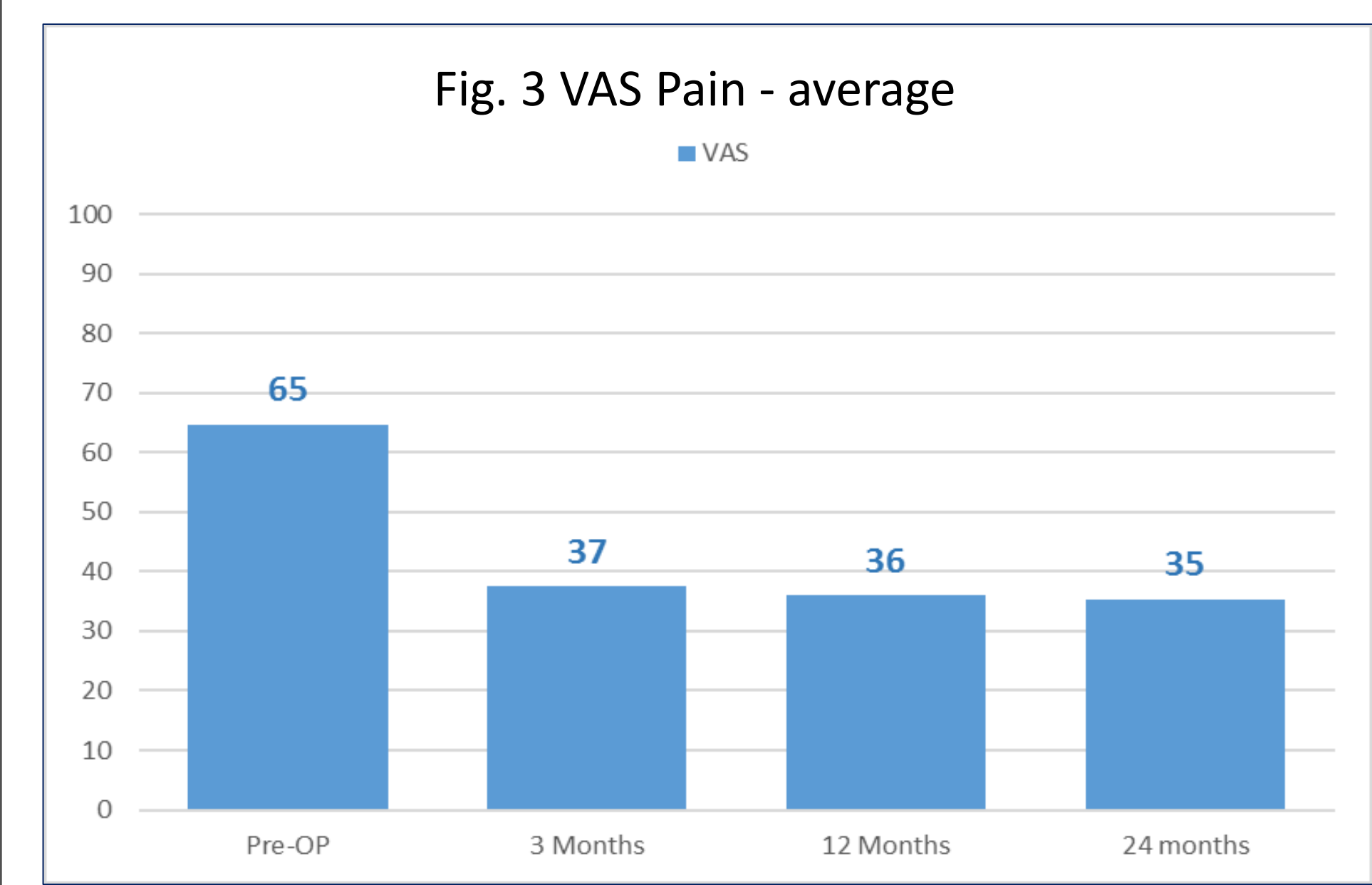
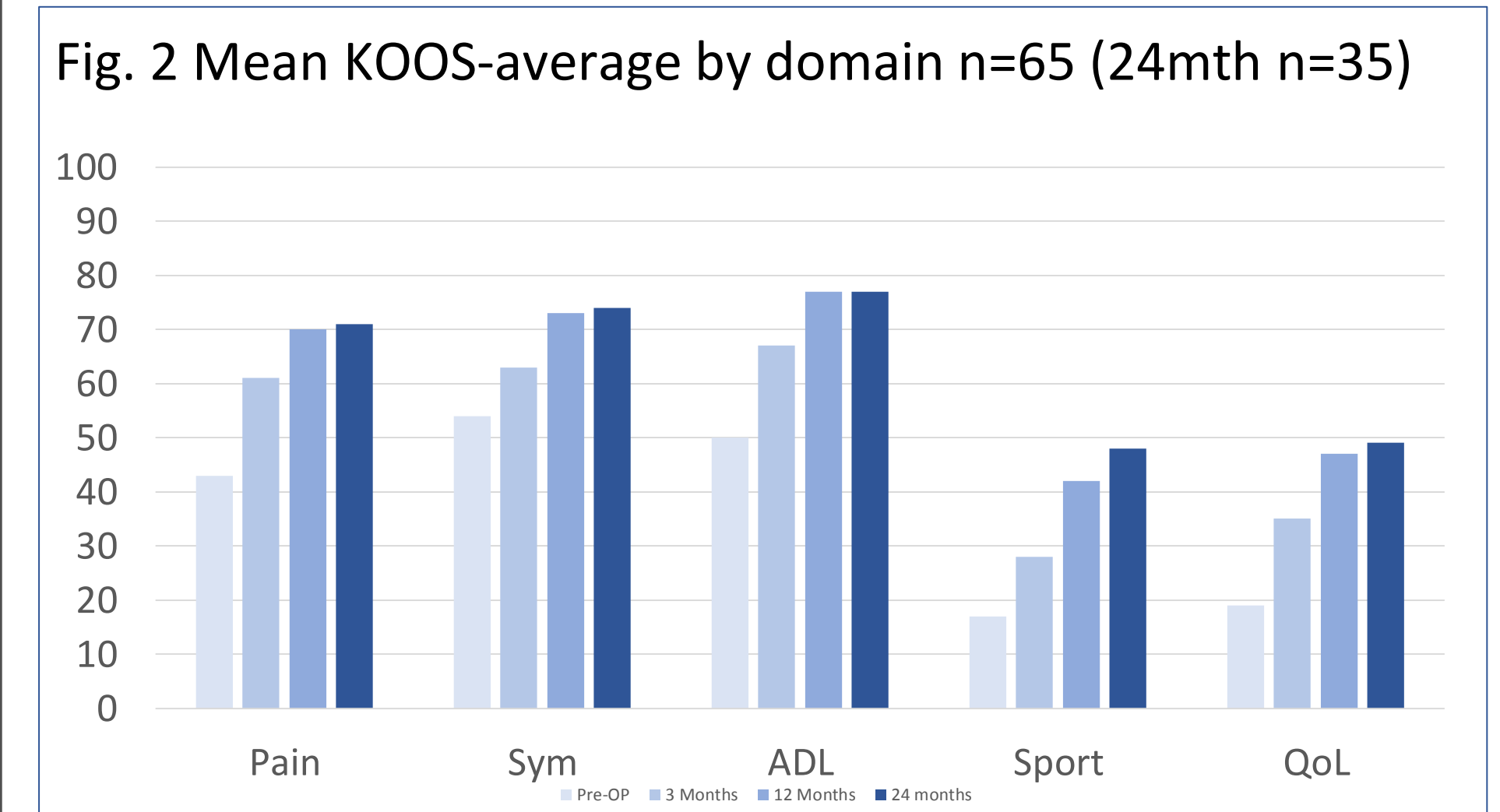
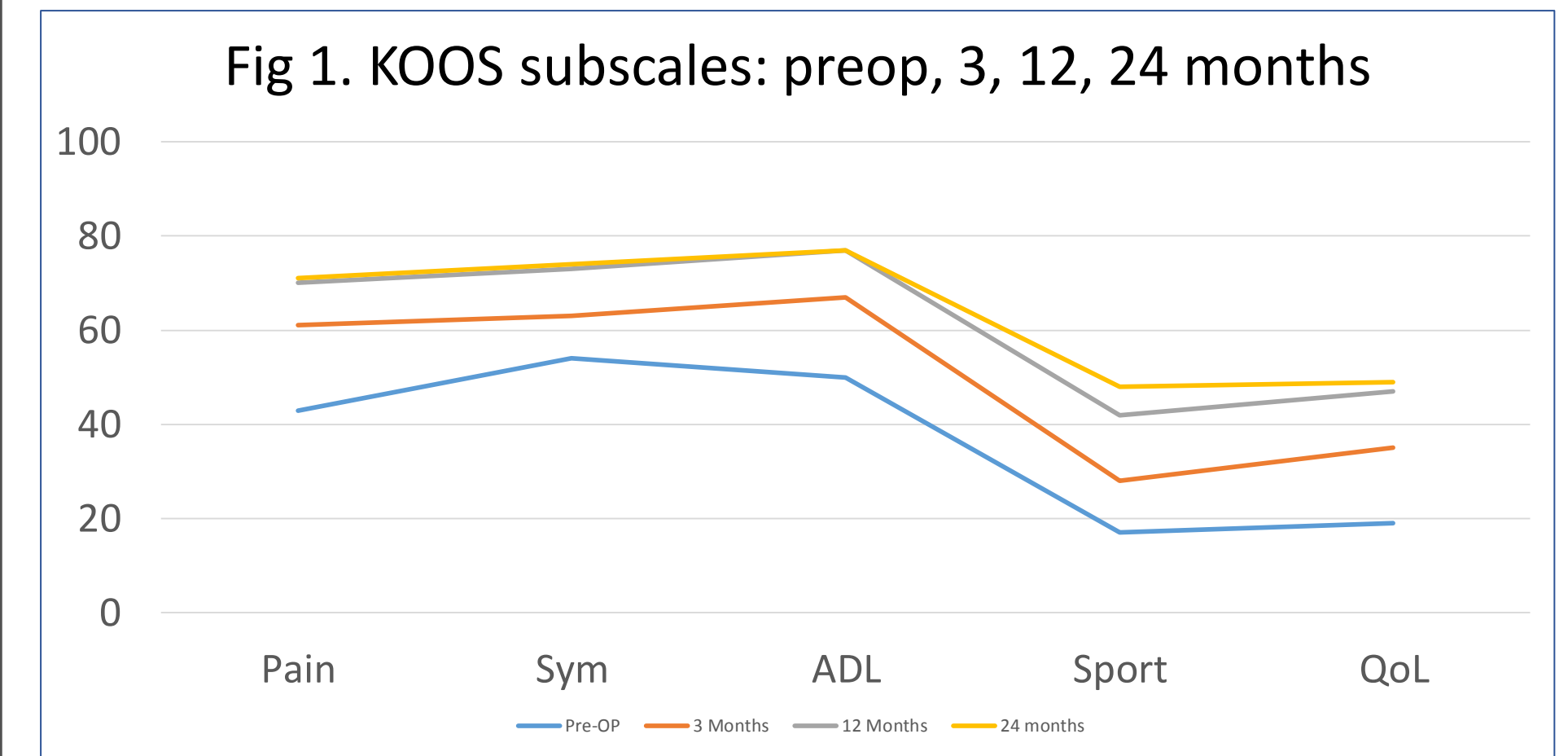
2 patients (4.5%) underwent revision:

- 9 months for infection
- 30 months for arthritis progression

All mean KOOS domain scores were significantly improved at 1 and 2 years ($p < 0.05$) (Fig. 1 & 2).

Mean VAS score improved from 65 pre-operatively to 35 at 24 months (Fig. 3).

OUTCOME SCORES



CONCLUSION

The study shows excellent early clinical results in the treatment of focal full thickness symptomatic cartilage lesions on the femoral condyles or trochlea with a second-generation patient specific metal implant and cutting guides. Adherence to strict indications has allowed for high patient reported scores and low early revision rate.

PROCESS FOR EPISEALER IMPLANTATION

Patients undergo detailed MRI resulting in Damage Marking report detailing location of defect and proposed solution. 3D printed patient individualised guide instrumentations are produced to allow accurate implantation.

