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SURVIVORSHIP AND CLINICAL OUTCOMES OF A NOVEL PERSONALIZED METAL IMPLANT FOR THE TREATMENT OF CARTILAGE LESIONS OF THE KNEE

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INTRODUCTION

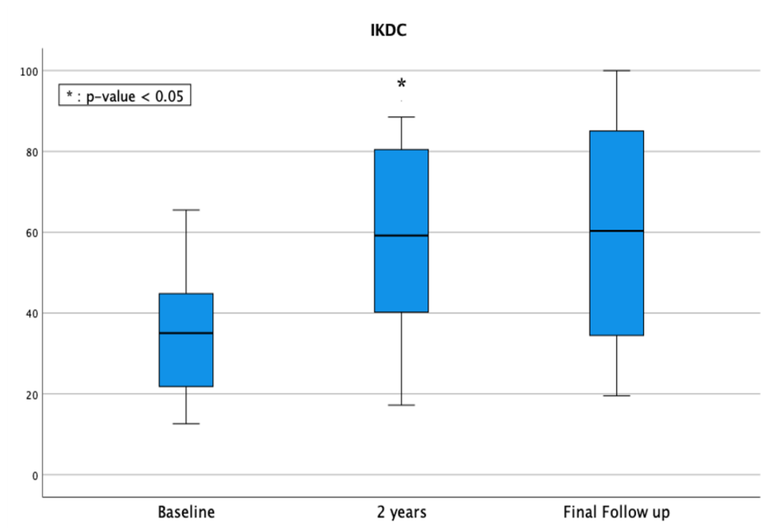
The treatment of knee cartilage lesions can be difficult in middle-aged patients, who often have larger and deeper defects involving the subchondral bone. Personalized focal arthroplasty implants are especially beneficial for patients around 50 years old, where biological repair is no longer ideal or has previously failed. These cobalt-chrome implants, along with patient-specific instruments, are designed based on each patient's MRI anatomy to precisely remove only the damaged tissue and replace it with a perfectly fitting implant. This summary reports midterm outcomes (ranging from 2 to 10 years) for this innovative personalized implant used in knee cartilage lesion treatment.

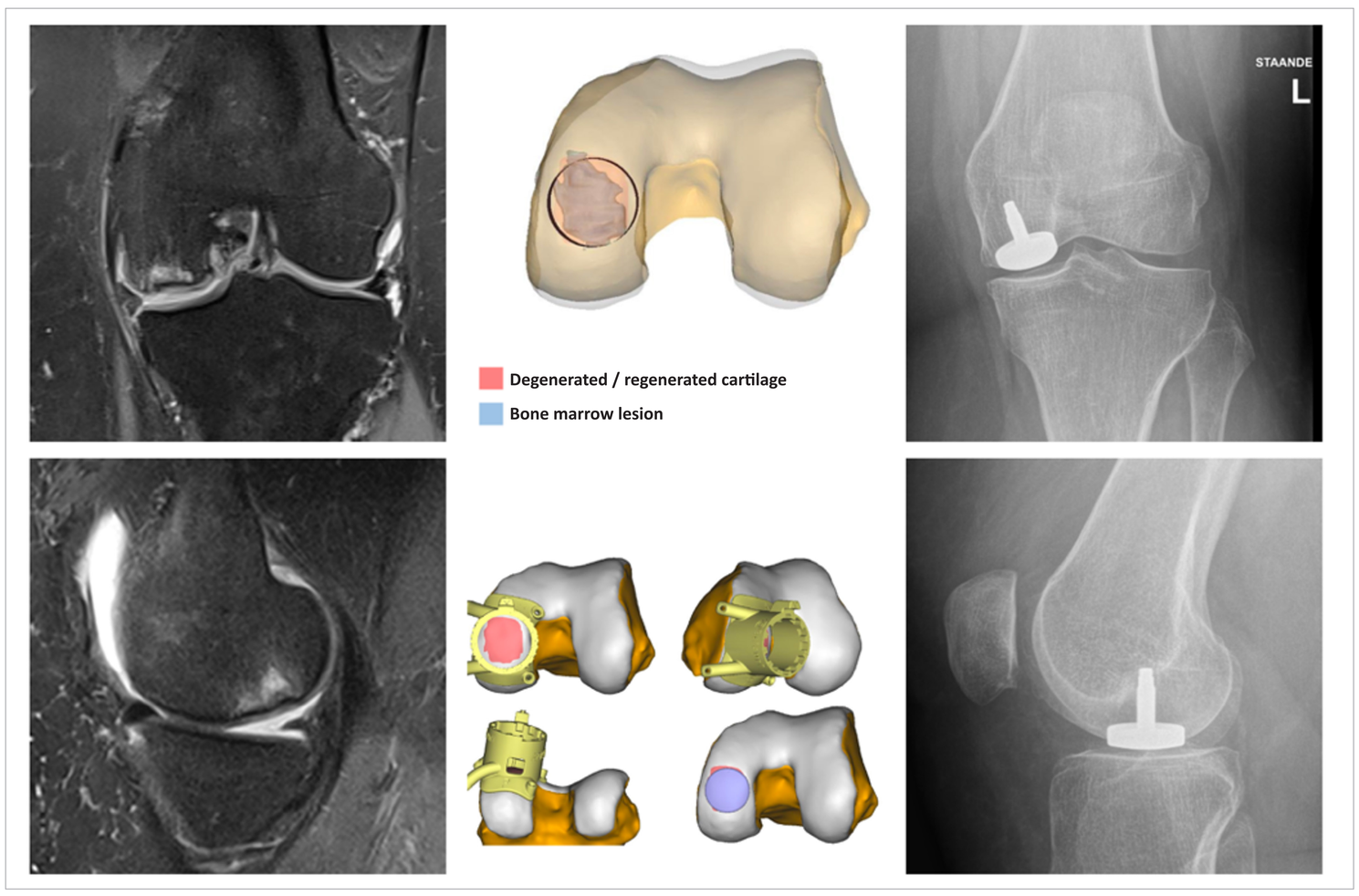
MATHERIAL & METHODS

34 patients (13 women, 21 men), with a mean age of 50 years (± 6.9; 24-63) underwent surgery and were followed for at least 2 years after the implantation (mean follow up= 49.4 months, range 24-120 months). In 33 out of 34 patients a single plug was used (23 mfc, 4 lfc, 6 trochlea), while in one case multiple plugs were implanted (trochlea + mfc). Two patients underwent concomitant surgeries (high tibial osteotomy in both). In most of the cases (61.7%) the implantation represented a revision surgery of a failed prior cartilage procedure. For all patients clinical scores (vas, koos and ikdc) were registered at baseline, two years after surgery and at the final follow up.

RESULTS

Statistically significant improvements for all clinical scores were registered between baseline and the two years follow up. Then those clinical scores remained stable between two years and the final follow up. Three cases were defined as failures since the implants were removed, two of them after 24 and one 36 months after implantation. Revision consisted in total knee replacement surgery in two cases and unicompartimental replacement in one. Kaplan meier cumulative survival rate was 91.2%.



CONCLUSIONS

This study is the first to report the clinical outcome and survival results up to ten years after the implantation of this personalized focal arthroplasty implant. The presented results depict the safety of this implant, an excellent survival rate of 91.2% at the latest follow up and significant clinical improvements at 2 years after implantation that then remain stable up to the latest follow up.