

3-YEAR CLINICAL OUTCOMES OF GMK HINGE

Indications, clinical outcome and survival of rotating hinge total knee arthroplasty in a retrospective study of 63 primary and revision cases

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SCAN TO READ THE STUDY

The full text is available at the following link:
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ABSTRACT

The purpose of this study is to report and compare outcome data of both primary and revision cases using a rotating hinge knee (RHK) implant.

METHODS

This study retrospectively analyzed 63 cases (19 primary, 44 revisions) at a mean follow-up of 34 ± 8 months after RHK implantation. Outcome parameters were stability, range of motion (ROM), loosening, Hospital of Special Surgery Score (HSS), Knee Society Score (KSS), Oxford Knee Score (OKS), EQ-5D-3L, and Visual Analog Scale (VAS) for overall function. Revision rates and implant survival are reported.

RESULTS

Eleven percent showed medio-lateral instability < 5 mm, a mean ROM of $115^\circ \pm 17^\circ$ and radiologic loosening occurred in 8% (2% symptomatic). PROMS showed the following results: HSS 79 ± 18 , KSS 78 ± 27 , OKS 26 ± 10 , EQ-5D index 0.741 ± 0.233 and VAS 70 ± 20 . Primary cases revealed better outcomes in HSS ($p = .035$) and OKS ($p = 0.047$). KSS, EQ-5D index and VAS did not differ between primary and revision cases ($p = 0.070$; $p = 0.377$; $p = 0.117$). Revision rate was 6.3% with an implant survival of 96.8%.

CONCLUSIONS

RHK arthroplasty can be performed with good clinical outcome and low revision rate in revision and complex primary cases. RHK is an option in cases where standard arthroplasty and even implants with a higher degree of constraint have reached their limits.

KEY CONCEPTS

- At a mean follow-up of 3 years, GMK Hinge shows a **100% implant survival rate if revisions for infections are excluded**, i.e., a cause not related to the implant. When **considering revisions for infections, the implant survival rate is 96.8%**.^[2] This is **still an excellent result** if compared with contemporary literature findings.
- Even if functionality is often perceived as the strictest limitation for a totally constrained knee, the patients included in this study report **very impressive clinical results, particularly in terms of functionality**, showing a significantly better performance compared to the results published for its direct competitors.
 - mean KSS objective score: 78 ± 27** .^[3] When considering the two groups separately, the values are 87 ± 26 in primary cases; 74 ± 27 in revision cases.
 - mean KSS functional score: 55 ± 25** .^[4] When considering the two groups separately, the values are 66 ± 28 in primary cases; 50 ± 23 in revision cases. The mean KSS functional score was 36 in a study reporting outcomes of rotating hinges with comparable follow-up.^[5]
- The study also highlights the **modern design of GMK Hinge**, with its ability to rotate about the pivot. Indeed, GMK Hinge is a **fixed-bearing, yet rotating hinged implant**: the fixed-bearing feature allows for high stability in full knee extension; the ability to rotate allows for tibial rotation during flexion, which is crucial for achieving good outcomes in the knee functionality.

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²At the final follow-up, four cases had been revised due to infection (6.3%). Only in 2 cases out of 4 (3.2%) the implant had been removed, resulting in an implant survival of 96.8% at a mean follow-up of 34 months.

³The Knee Society objective score is assessed by the surgeon (objective evaluation), considering the following post-op parameters: knee alignment on X-rays; knee stability in full extension and at 90° of flexion, knee range of motion. Max value: 105.

⁴The Knee Society functional score is based on the patient's feedback. Information with respect to the level of comfort when performing specific daily activities is asked to the patients. Max value: 100.

⁵Cottino U. et al., Long-Term Results After Total Knee Arthroplasty with Contemporary Rotating-Hinge Prostheses. The Journal of Bone and Joint Surgery 99(4):p 324-330, 2017. DOI: 10.2106/JBJS.16.00307



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