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Early loosening of the femoral stem in cemented segmental prostheses with distal femur replacement

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Faculty Disclosure Information

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Introduction

- Distal femoral replacement (DFR) is widely used in revision knee arthroplasty.
- It is indicated for cases with severe bone loss or periprosthetic fractures.
- Early loosening of the femoral component is a major concern.
- Cemented stems appear to be at higher risk of loosening.

- **Objective**: evaluate the rate of early loosening in cemented DFR prostheses and explore the factors associated with this complication.

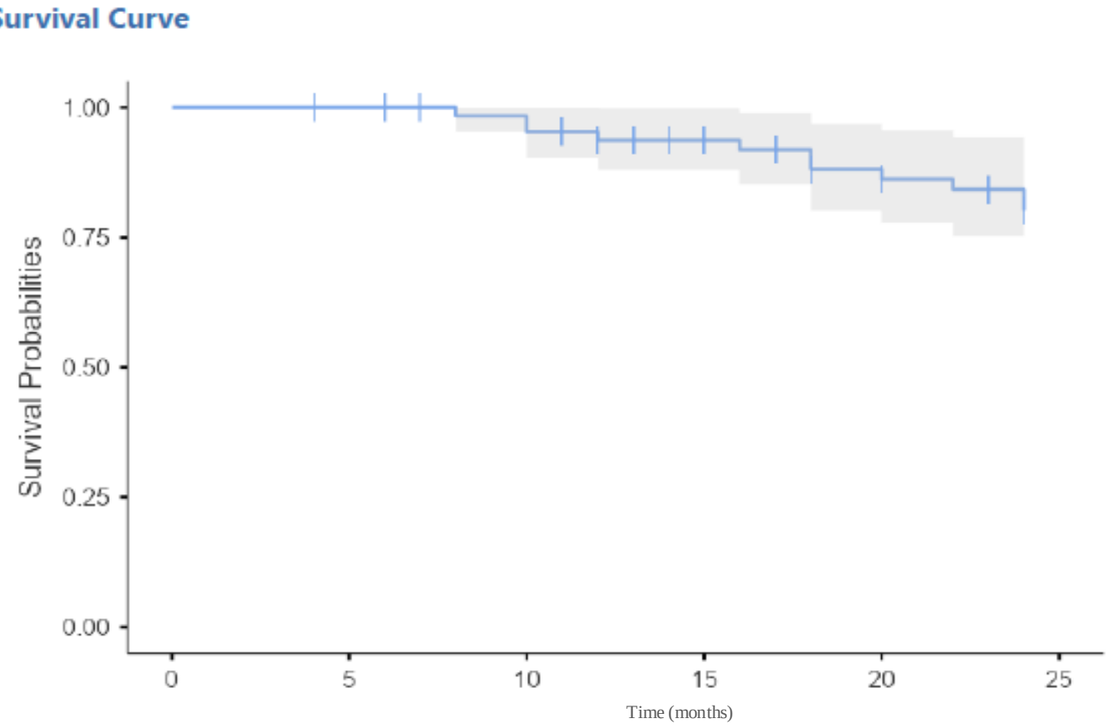
Methods

- Retrospective multicenter study across four revision centers.
- Included 70 patients with cemented DFR from 2015 to 2019. Minimum follow-up of two years.
- Loosening defined by component mobilization or radiographic changes.
- **Primary outcome:** femoral loosening within two years.
- **Secondary outcomes**: prosthetic survival and impact of patient factors.

Results I

- Median age: 73.5 years; 71.4% were female.
- Main indications: aseptic loosening (35.7%), periprosthetic fracture (22.9%), infection (27.1%).
- Femoral component loosening rate at two years: 18%.
- Women had a lower risk of loosening than men (OR 0.258, p = 0.038).
- No significant differences in loosening by age or prior cementation.
- Reoperation rate: 24.3%, with aseptic loosening as the main cause (52.9%).

Results II
Survival curve



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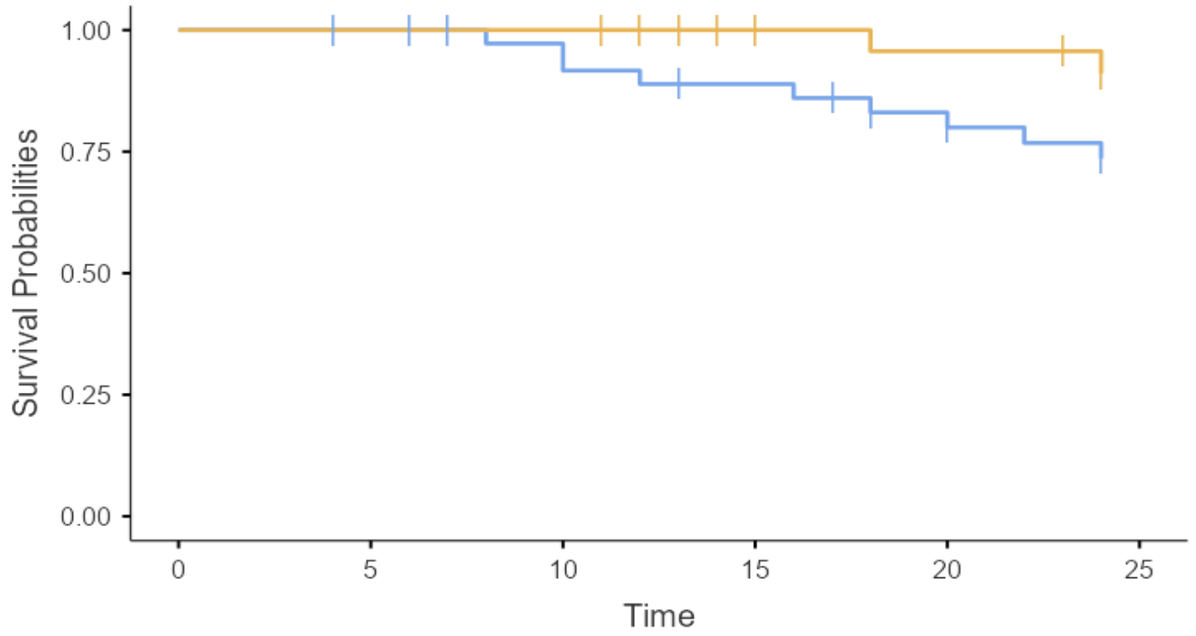
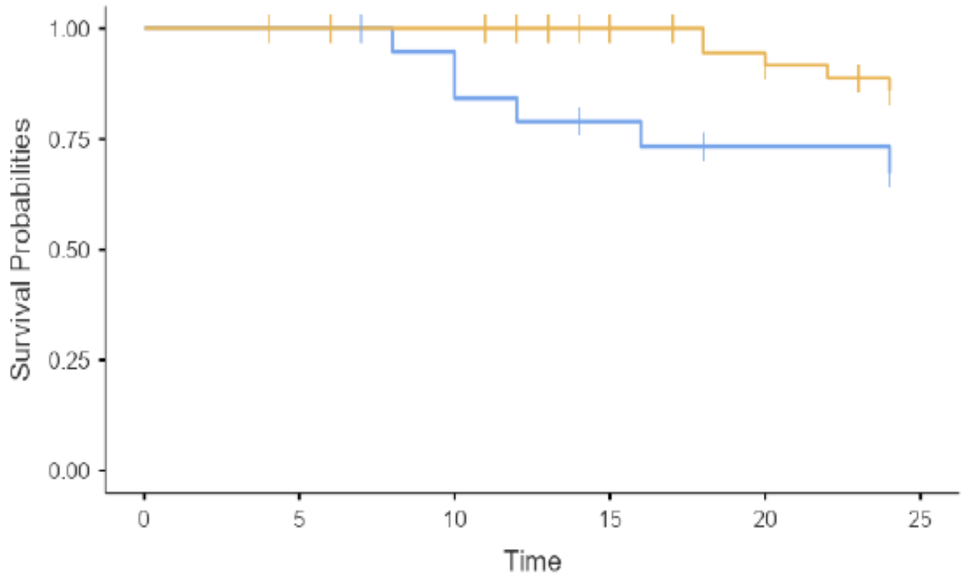
Results III
Survival curve according to age



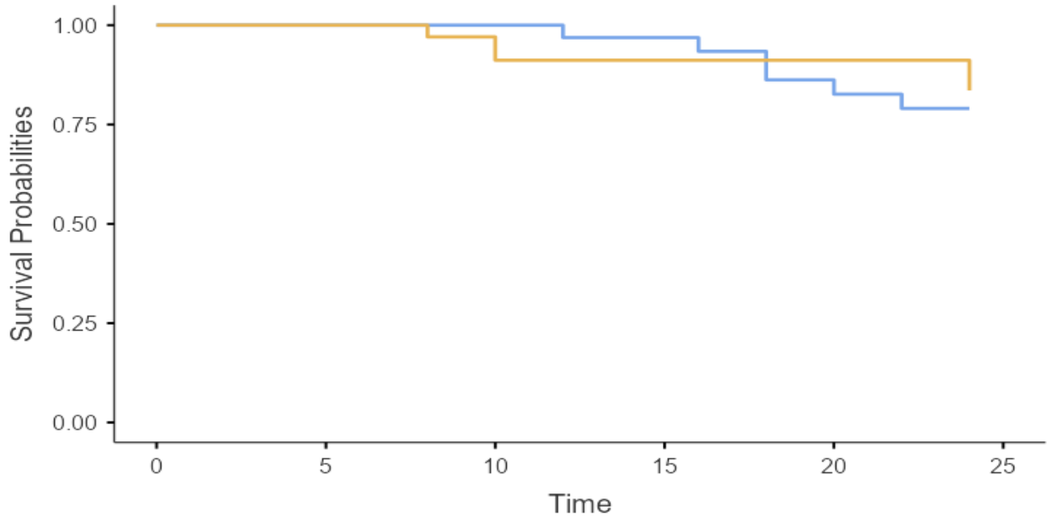
Age: blue less than 75 years, yellow 75 or more years

Results IV
Survival curve according to sex



Gender: blue male, yellow female

Results V
Survival curve according to previous canal cementation



Previous cementations: blue no, yellow yes

Discussion

- Early loosening rate in cemented DFR is notable and aligns with previous studies.
- Men had a higher risk of loosening, suggesting potential sex-specific biomechanical factors.
- Prior femoral canal cementation showed no significant impact but suggested a trend toward earlier loosening.
- Alternative fixation strategies may be needed for patients with multiple prior cementations

Conclusion

- Early loosening of cemented femoral stems in DFR is a major concern.
- Male patients have a higher risk of loosening.
- Optimizing fixation strategies is essential, especially with prior canal cementation.
- Future research should explore improved prosthetic designs.
- Cementless stems may help reduce early loosening rates.
- Findings are crucial for enhancing long-term outcomes in revision knee arthroplasty.

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Thank you very much

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