

Background & Aim



Background: Uncemented diaphyseal fitting stems are a gold standard in revision Total Hip Arthroplasty (rTHA); however, documented complication rates remain severely fragmented.

Aim: Characterise the complication profile and re-revision indications of uncemented femoral stems in rTHA.

Methods

- PRISMA-guided review; searches from inception to April 2026
- rTHA with uncemented diaphyseal-fitting stems; excluded primary stems in rTHA
- Descriptive synthesis; subsidence (distal shift of femoral stem) >5 mm significant
- NIH (National Institutes of Health) quality assessed for all studies

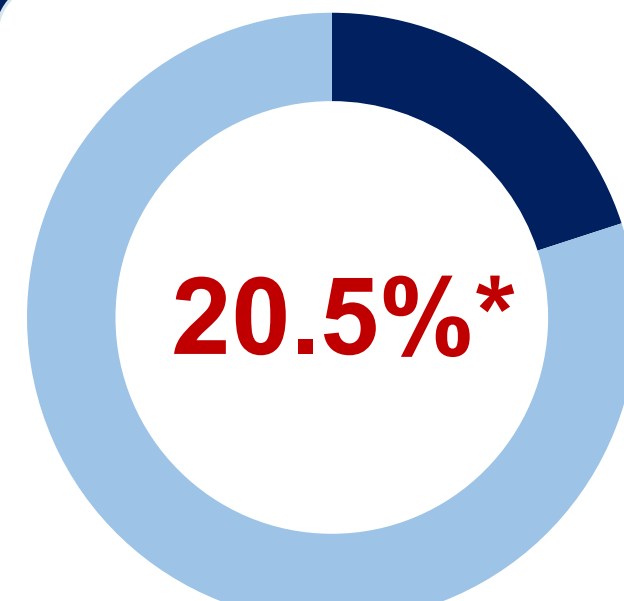
Study Characteristics

39 Studies	6,768 Revision hips	66 y Mean age
8.5 y Mean follow-up	34 / 5 Retrospective/ prospective	7.6 NIH mean

38 Level IV | 1 Level III

Aseptic loosening was the leading indication for index revision (67.8%)

Overall Complication Burden



1,388 reported complications

34%

66%

IntraoperativePostoperative

** Reported events/hips × 100; events may overlap.*

Intraoperative Complications

Femoral fracture*6.4%

Femoral perforation0.4%

** Femoral shaft and greater trochanter fractures*

Fractures reflect challenges in stem removal and femoral canal preparation

Postoperative Complications

Subsidence >5 mm4.8%

PJI2.8%

Dislocation / instability2.8%

Aseptic loosening2.4%

Mechanical failure0.8%

Subsidence was most frequent; mechanical failure was uncommon. Postoperative events are not necessarily stem-attributable

Rerevision Indications*

Aseptic loosening30.8%

PJI30.5%

Thigh pain9.6%

Mechanical failure8.0%

Subsidence7.6%

Dislocation6.6%

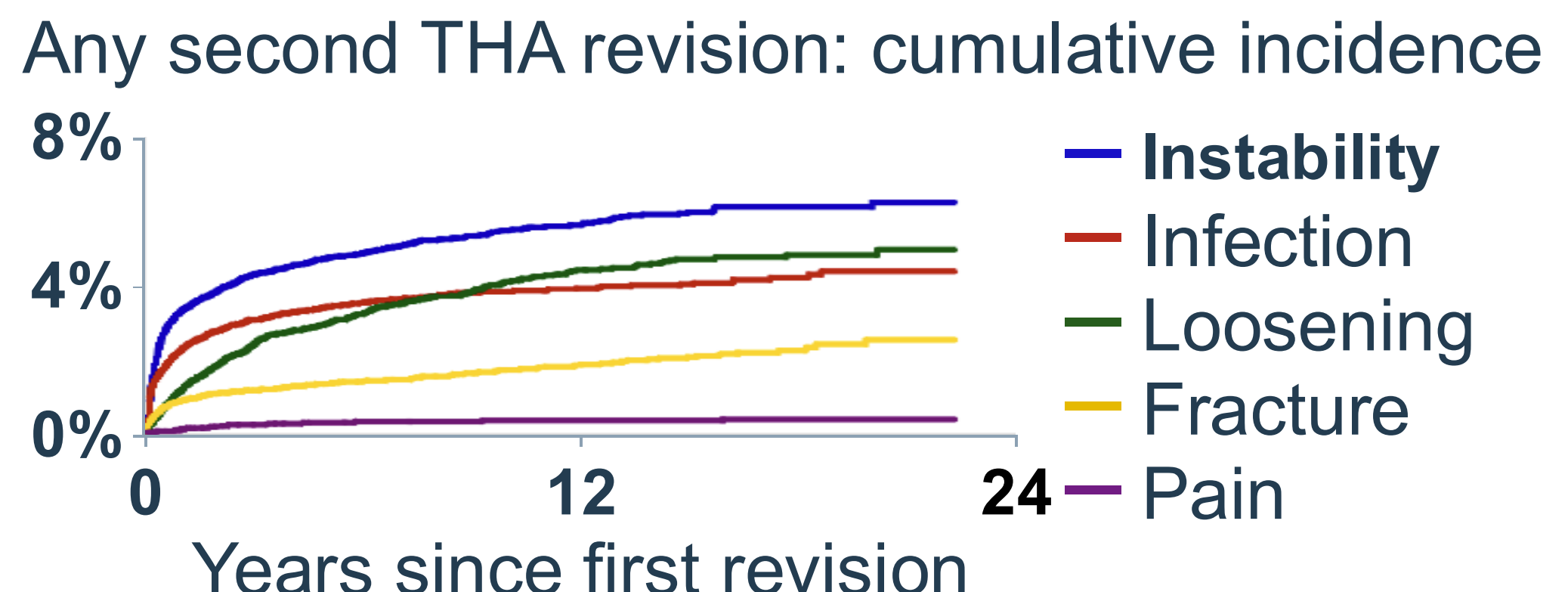
Periprosthetic fracture5.6%

Other1.3%

** % of all reported femoral re-revisions*

Joint Registry Comparison

Any second THA revision: cumulative incidence



Instability predominated in registry data

Summary & Implications

120.5% aggregate event/hip ratios

2Reporting varied across studies

3Femoral fracture was most frequent overall

4Loosening and PJI led femoral re-revisions

Supports planning and patient counselling

Reference: Clair AJ et al. J Arthroplasty. 2020;35:S299–S303 • NIH/NHLBI Quality Assessment Tool for Case Series Studies • AOANJRR Annual Report 2025