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Effect of Collared Cementless Stems in Late Failure

Is there still a place for cement ?

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Introduction

Cemented stems widely used in Australia and globally since the dawn of time

Considered by many to be the ‘ Gold standard ‘

Exeter commonest femoral implant in Australia with great outcomes with regards to rates of revision

However, excellent 10-year results was the Conventional teaching

Long term results with many implants show increasing Loosening and Fracture

Was that the ‘ Good Old days ‘ ?

Introduction

Cemented and Hybrid stems still common in Australia

However, Cementless technology is now also common

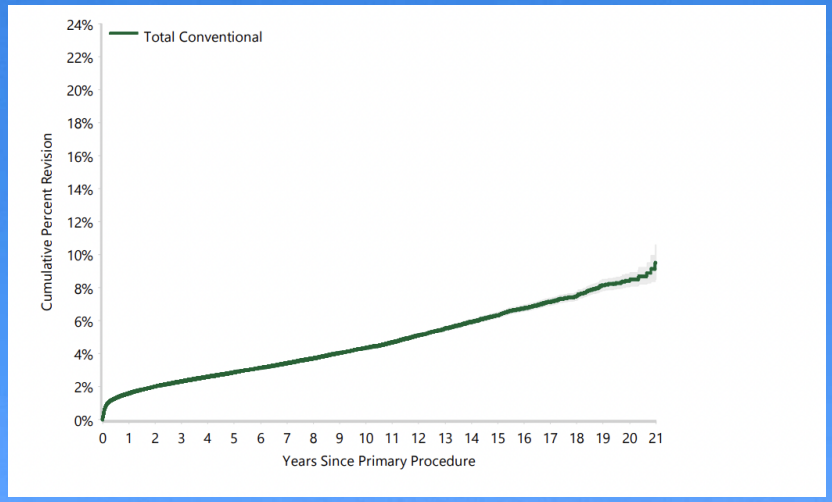
Increasing use of Modern approaches and Technology assistance

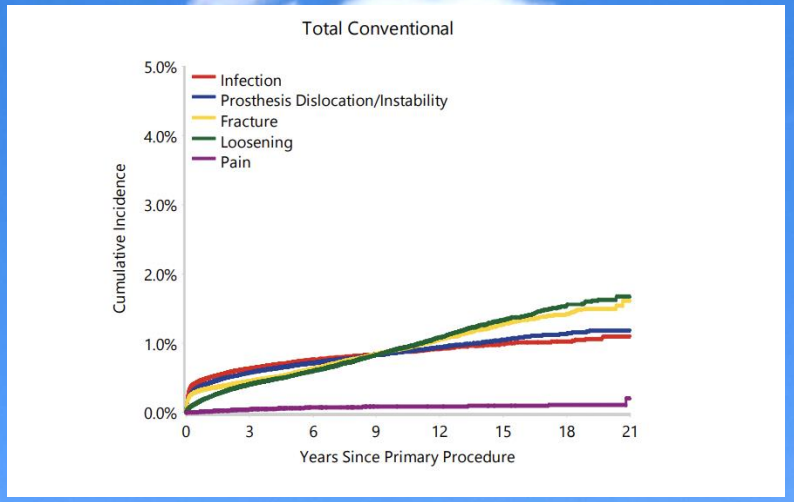
Registries can now comment on 15 and 20-year results !

Increasing evidence regarding ‘late’ failures

Need to combine patient satisfaction with long term outcomes.

THR Failures





Good long-term results @ 20 Years

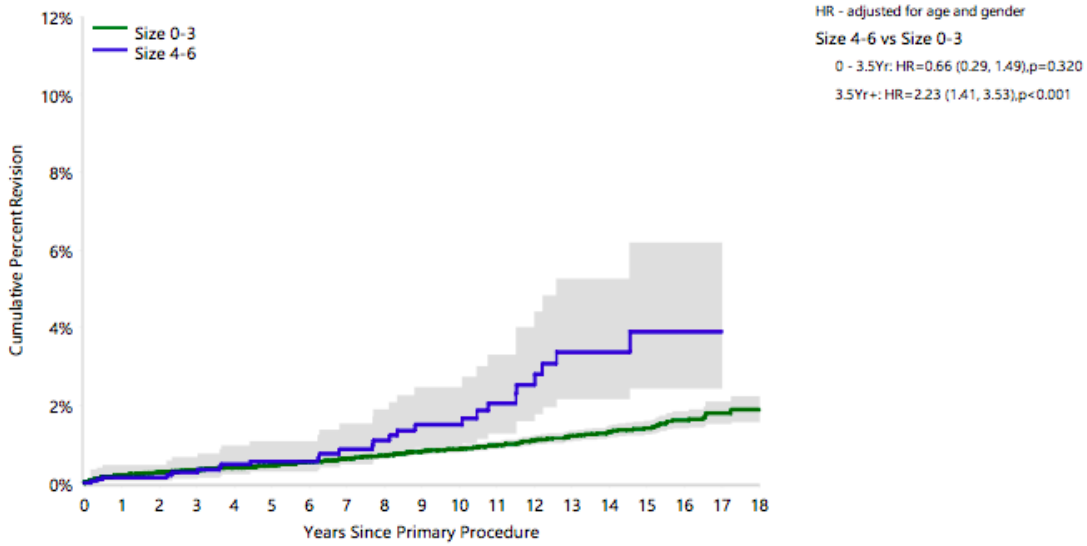
Fracture & Loosening still an issue
esp. late

Previous Exeter Results /Fracture

Statistically higher CPR for stem sizes 4-6 (p<0.001)

Revision rates start to increase in later-stage (post 10-years)

Figure 3: Cumulative Percent Revision of Exeter V40 Primary Total Conventional Hip Replacement by Stem Size (Primary Diagnosis OA, Revision for Fracture)



Corail stem

2nd Commonest Uncemented stem in Australia

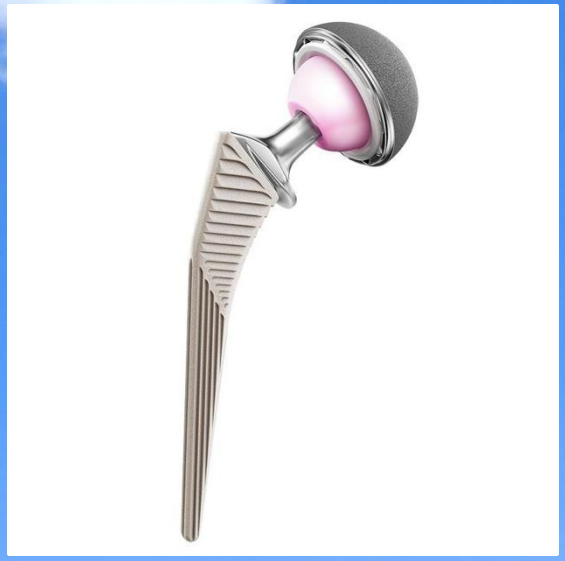
Small stems associated with increased failure for aseptic loosening

In cementless stems periprosthetic fracture exceeds aseptic loosening in the long term

Do larger Corail stem sizes have more late fractures ?

Is the Collar relevant in late fractures ?

Registry study analysis / Jack Tierney and Emma Jackman



Results / All Corail Stems

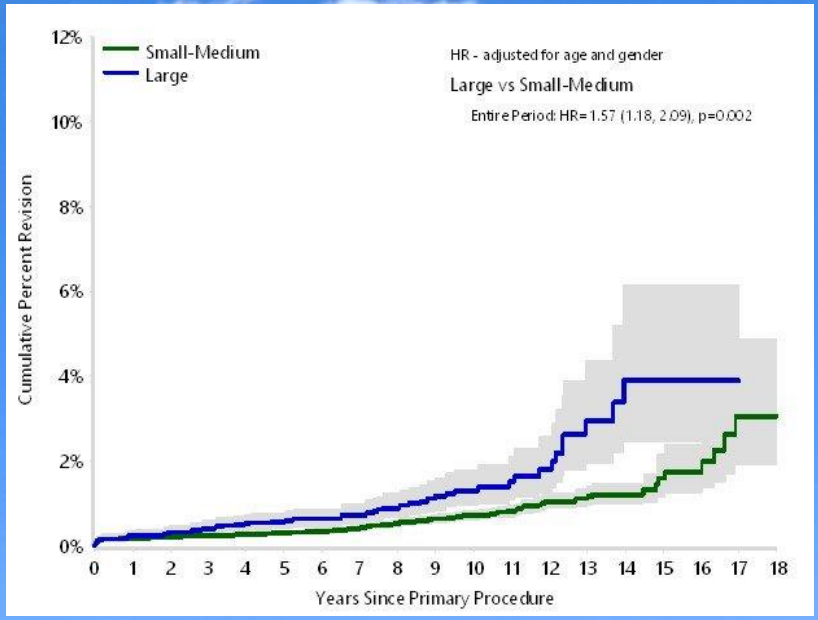
Total of 59,518 primary THA included

There were 312 femoral stem revisions performed for periprosthetic fracture

248 small-medium and 64 large stems > 13

Cumulative percent revision rate # was higher for large stems vs small-medium stems

(Entire period p=0.002)



Cumulative Percent Revision of CORAIL Primary Total Conventional Hip Arthroplasty by Stem Size (Primary Diagnosis Osteoarthritis, Revision for Fracture, Femoral Component Revision)

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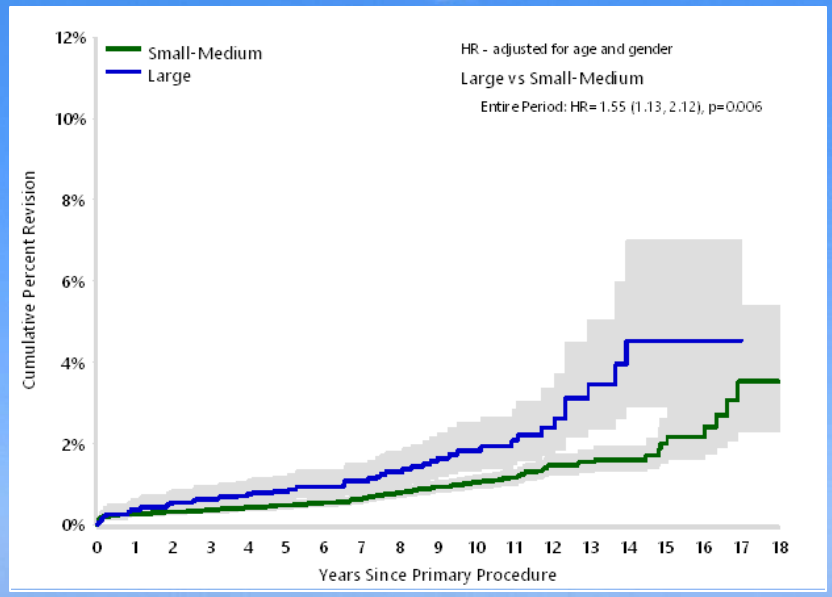
Results / Collarless

Compare with results of Collarless Corail Stems

Large collarless stems had greater rates of revision due to fracture compared to small-medium collarless stems

p=0.006

Fractures increased Late



Results / Collared

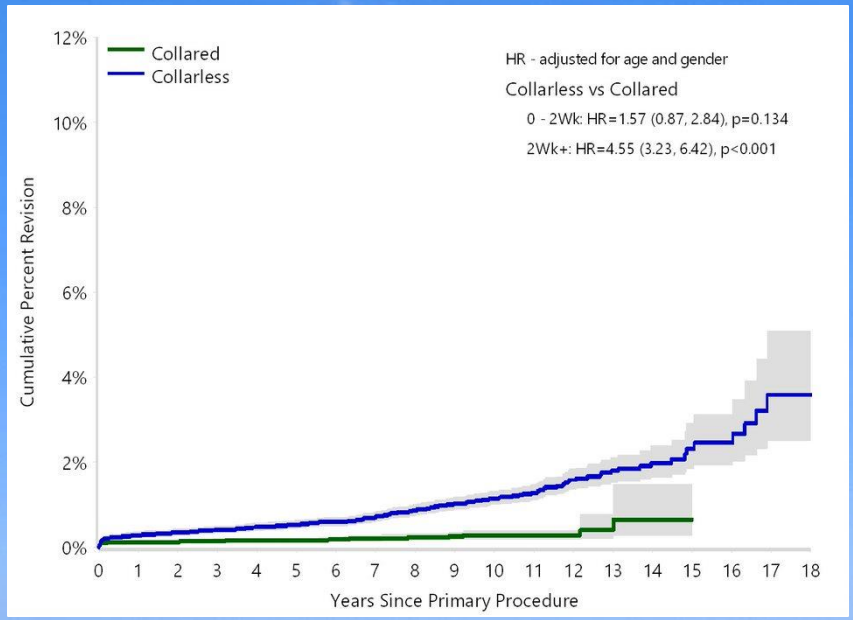
Overall collarless stems had a higher rate of revision compared to collared stems from 2 weeks onwards

p<0.001

No difference found between large or small sizes in collared groups

p=0.382

Increasing use and research in collared stems



Collared stems / other studies

Other Australian registry bases studies

Cemented Vs Collared cementless stems

Focussed on older patients

No diff with age / gender

› Bone Joint J. 2024 Mar 1;106-B(3 Supple A):121-129.
doi: 10.1302/0301-620X.106B3.BJJ-2023-0771.R1.

Registry-based study of survivorship of cemented femoral components versus collared cementless femoral components in total hip arthroplasty in older patients with osteoarthritis

Aida Orce Rodríguez [1], Paul N Smith [2 3], Paul Johnson [1], Michael O'Sullivan [4], Carl Holder [5], Andrew Shimmin [1]

Findings overall

Large Corail stems have higher Late Peri # rate *(similar to Exeter paper)*

18-year data

? Related to BMD changes over time / rotational stability

Collared Corail stems have lower rates of revision for fracture (JOA)

Size of stem irrelevant at 15 years …….

We know collar offers better early stability

Also protects against late fracture ?

Conclusions

Collard Corail appears better for late #

Age / Gender argument now less convincing

Simpler op to cemented with possibly less morbidity

Easier to revise then cemented if they do fail

Changing attitudes in surgery with Long term data

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Thank You

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