Primary THA – Collared vs Noncollared Primary Stems

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Why do we care about collars?

Periprosthetic femur fractures

Do collarless implants have higher fracture rates?

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Selected Papers from the 9th International Congress of Arthroplasty Registries
Guest Editor: Ola Rolfson MD, PhD

OPEN

How Does Implant Survivorship Vary with Different Corail Femoral Stem Variants? Results of 51,212 Cases with Up to 30 Years Of Follow-up from the Norwegian Arthroplasty Register

Silje Marie Melbye[1], Sofie Cecilia Dietrich Haug[1], Anne Marie Fenstad MSc[2], Ove Furnes MD, PhD[2], Jan-Erik Gjertsen MD, PhD[2,3], Geir Hallan MD, PhD[2,3]

Contents lists available at ScienceDirect

The Journal of Arthroplasty

journal homepage: www.arthroplastyjournal.org

Primary Hip

Increased Rates of Late Periprosthetic Fractures in Larger Hydroxyapatite-Coated Cementless Stems: Are Collared Stems a Better Alternative for Total Hip Arthroplasty?

Jack Tierney, BHSc [a,*], Emma Jackman [b], Carl Holder, MBiostat [c], Christopher J. Wall, MBBS, BMedSc [d], Christopher J. Wilson, MB ChB, PhD [b]

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Primary Hip

How Much Protection Does a Collar Provide? Assessing Risk of Early Periprosthetic Femur Fractures Following Total Hip Arthroplasty in Elderly Patients

Check for updates

Samuel Rodriguez, MD [*], Simarjeet Puri, MD, Jennifer Bido, MD, MPH, Austin C. Kaidi, MD, MSc, Jose A. Rodriguez, MD, Elizabeth B. Gausden, MD, MPH

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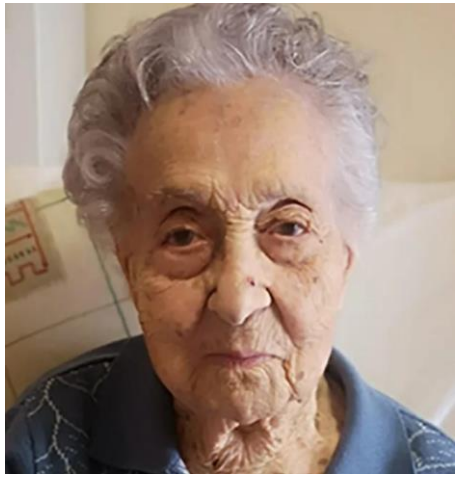
2023 AAHKS Proceedings

Collared Cementless Femoral Components Reduce the Revision Rates in Primary Total Hip Arthroplasty Using the Direct Anterior Approach: An Australian Orthopaedic Association National Joint Replacement Registry Study

Siddharth Rele, MD, BBiomedSc [a], Edward O'Bryan, MBBS [b], Carl Holder, MBiostat [c], Peter L. Lewis, MBBS [d,e], Claudia Di Bella, MD, PhD [f,g,h,*]

What factors affect fracture risk?

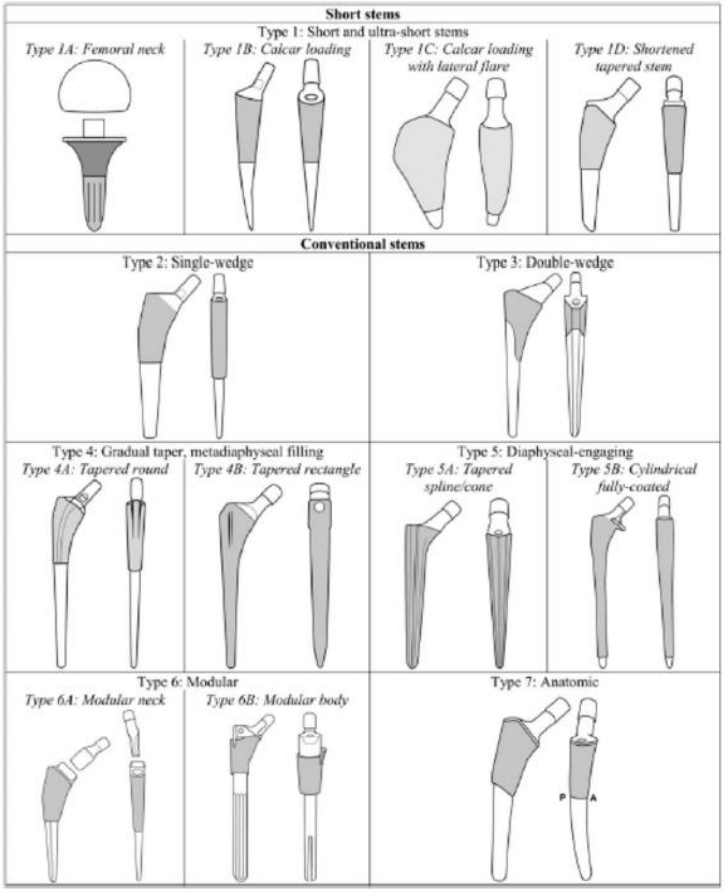


Patient

Implant

Surgeon

Implants are highly variable: more differences than just collars!



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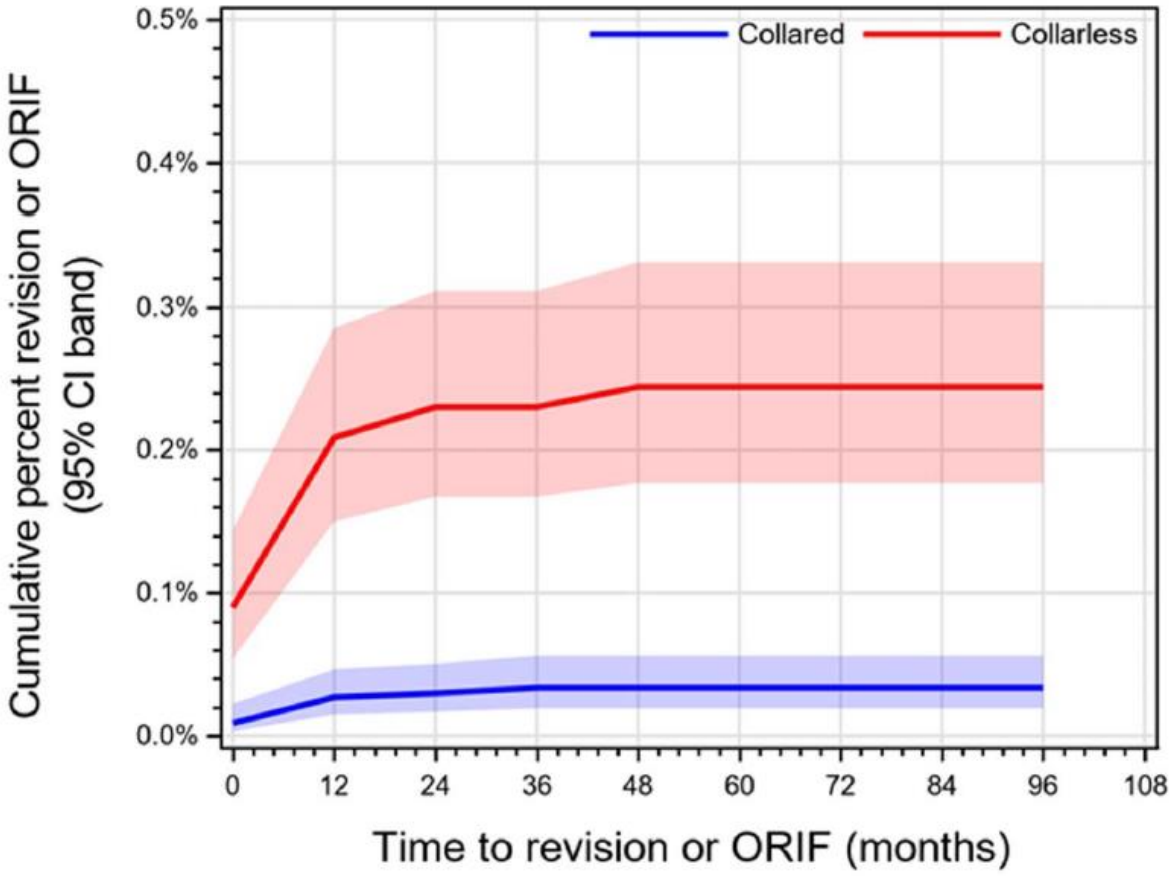
Clinical Research

Femoral Component Design Is Associated With the Risk of Periprosthetic Femur Fracture After Cementless THA in Patients 65 Years or Older

Mackenzie Kelly MD[1], Antonia F. Chen MD, MBA[2], Sean P. Ryan MD[3], Zachary M. Working MD[1], Ayushmita De PhD[4], Kyle Mullen MPH[4], Kimberly R. Porter PhD, MPH[4], Ryland Kagan MD[1]



In patients over 65, there was a ~0.2% increase in unadjusted periprosthetic fracture rate for collarless stems (2 femurs in a thousand)

Collarless Implants

- Pros
  - Overall excellent track record
  - Subsidence with secondary stability
  - Removal without trochanteric osteotomy
- Con
  - Small increase in periprosthetic fracture rate vs collared

Case Discussion

Corail® Cementless Stem: Meta-analysis

SICOT-J 2024, **10**, 8

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REVIEW ARTICLE OPEN ACCESS

Collared versus collarless hydroxyapatite-coated stems for primary cementless total hip arthroplasty; a systematic review of comparative studies. Is there any difference in survival, functional, and radiographic outcomes?

Vasileios Giovanoulis[1,2,3,4,*], Eustathios Kenanidis[2,3], Florence Aïm[1], Zakareya Gamie[2,3], Simon Marmor[1], Michael Potoupnis[2,3], Sébastien Lustig[4], and Eleftherios Tsiridis[2,3]

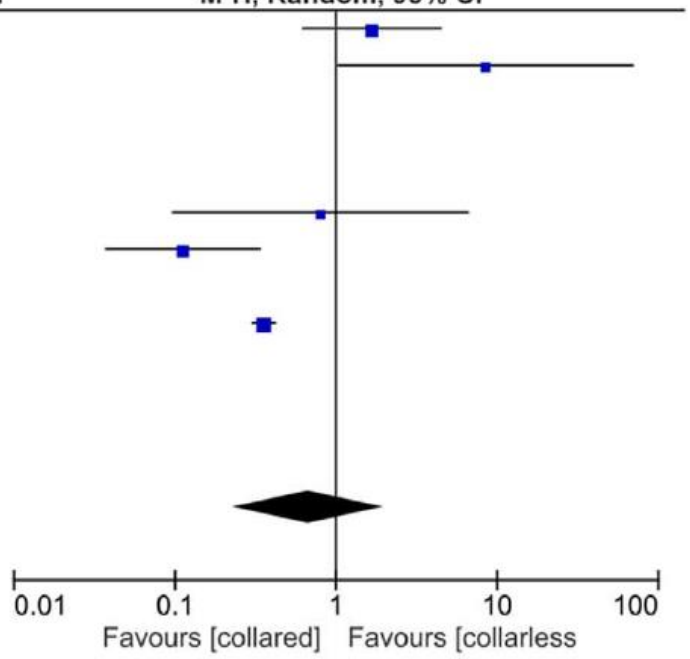
Stem revision: nonsignificant difference

a)

Study or Subgroup	Collared Events	Collared Total	Collarless Events	Collarless Total	Weight	Risk Ratio M-H, Random, 95% CI
Al-Najjim et al.	10	121	6	121	22.8%	1.67 [0.63, 4.44]
Belgaid et al.	6	83	1	117	13.7%	8.46 [1.04, 68.95]
Dammerer et al.	0	85	0	24		Not estimable
Hoskins et al.	0	18936	0	22310		Not estimable
Karayiannis et al.	0	288	0	288		Not estimable
Louboutin et al	1	28	5	112	13.7%	0.80 [0.10, 6.58]
Magill et al. (2016)	4	3316	16	1482	21.9%	0.11 [0.04, 0.33]
Magill et al. (2020)	0	146	0	40		Not estimable
Melbye et al.	183	17275	1010	33937	27.9%	0.36 [0.30, 0.42]
Perelgut et al.	0	58	0	58		Not estimable
Polus et al.	0	79	0	79		Not estimable
Wirries et al.	0	36	0	43		Not estimable
Total (95% CI)		**21515**		**36301**	**100.0%**	**0.68 [0.23, 2.02]**
Total events	204		1038			

Heterogeneity: Tau² = 1.10; Chi² = 22.95, df = 4 (P = 0.0001); I² = 83%

Test for overall effect: Z = 0.70 (P = 0.49)



Periprosthetic fracture: Small significant difference (0.3% vs 0.6%)

Study or Subgroup	Collared Events	Collared Total	Collarless Events	Collarless Total	Weight	Risk Ratio M-H, Random, 95% CI
Belgaid et al.	1	83	1	117	4.2%	1.41 [0.09, 22.22]
Louboutin et al	0	28	2	112	3.5%	0.78 [0.04, 15.79]
Magill et al. (2016)	1	3316	5	1482	6.7%	0.09 [0.01, 0.76]
Melbye et al.	61	17275	214	33937	85.6%	0.56 [0.42, 0.74]
Total (95% CI)		**20702**		**35648**	**100.0%**	**0.52 [0.29, 0.92]**
Total events	63		222			

Heterogeneity: $Tau^2 = 0.08$; $Chi^2 = 3.27$, df = 3 (P = 0.35); $I^2 = 8\%$

Test for overall effect: Z = 2.23 (P = 0.03)