

Literature

New thoughts in changing clinical practice in stem fixation of hip arthroplasty

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Presented studies

Lecture 1: What is the clinical practice worldwide and in Europe?

- **Bunyozy KI**, Malchau E, Malchau H, Troelsen A. Has the Use of Fixation Techniques in THA Changed in This Decade? The Uncemented Paradox Revisited. *Clin Orthop Relat Res*. 2020
- **Dale et al.** Fixation, sex, and age: highest risk of revision for uncemented stems in elderly women — data from 66,995 primary total hip arthroplasties in the Norwegian Arthroplasty Register. 66,995 patients > 55 y.o. *Acta Orthopaedica* 2020; 91 (1): 33–41 DOI: 10.1080/17453674.2019.1682851
- **Fernandez MA**, Achten J, Parsons N, Griffin XL, Png ME, Gould J, McGibbon A, Costa ML; WHITE 5 Investigators. Cemented or Uncemented Hemiarthroplasty for Intracapsular Hip Fracture. *N Engl J Med*. 2022 Feb 10;386(6):521-530. doi: 10.1056/NEJMoa2108337. PMID: 35139272.
- **Gonzalez Della Valle A**, Odum SM, De A, Barrington JW, Huddleston JI, Illgen RL, Springer BD. The Effect of Femoral Fixation on Revision and Mortality Following Elective Total Hip Arthroplasty in Patients Over the Age of 65 years. An Analysis of the American Joint Replacement Registry. *J Arthroplasty*. 2022 Jun;37(6):1105-1110. doi: 10.1016/j.arth.2022.01.088. Epub 2022 Feb 5. PMID: 35131391.
- **Gromov K**, Pedersen AB, Overgaard S, Gebuhr P, Malchau H, Troelsen A. Do Rerevision Rates Differ After First-time Revision of Primary THA With a Cemented and Cementless Femoral Component? *Clin Orthop Relat Res*. 2015 Nov;473(11):3391-8. doi: 10.1007/s11999-015-4245-6. PMID: 25762017; PMCID: PMC4586243.
- **Hopman et al.** Uncemented total hip arthroplasty; increased risk of early periprosthetic fracture requiring revision surgery in elderly females. 2635 patients >75y.o. *Journal of Orthopaedics* 25 (2021). 40–44.DOI: 10.1016/j.jor.2021.03.025

- **Jain S**, Menon D, Mitchell T, Kerr J, Bassi V, West R, Pandit H. A cost analysis of treating postoperative periprosthetic femoral fractures following hip replacement surgery in a UK tertiary referral centre. *Injury*. 2023 Feb;54(2):698-705. doi: 10.1016/j.injury.2022.11.058. Epub 2022 Nov 28. PMID: 36470768.
- **Ladurner A**, Zdravkovic V, Giesinger K. Sex-Specific Implant Fixation Can Reduce Revision Rates in Total Hip Arthroplasty: Evidence From the Swiss National Joint Registry. *J Arthroplasty*. 2023 Aug 17:S0883-5403(23)00831-8. doi: 10.1016/j.arth.2023.08.035. Epub ahead of print. PMID: 37595764. Apr;478(4):697-704. doi: 10.1097/CORR.0000000000001117. PMID: 31899744; PMCID: PMC7282602.
- **Pangaud C**, Pauly V, Jacquet C, Orleans V, Boyer L, Khakha R, Argenson JN, Ollivier M. Reduced mortality associated to cementless total hip arthroplasty in femoral neck fracture. *Sci Rep*. 2023 Oct 6;13(1):16849. doi: 10.1038/s41598-023-43790-8. PMID: 37803077; PMCID: PMC10558430.
- **Sheridan GA**, Howard LC, Neufeld ME, Greidanus NV, Garbuz DS, Masri BA. International primary hip arthroplasty registry review: findings from current reports. *Ir J Med Sci*. 2023 Mar 16. doi: 10.1007/s11845-023-03330-9. Epub ahead of print. PMID: 36928594.
- **Thien TM**, Chatziagorou G, Garellick G, Furnes O, Havelin LI, Mäkelä K, Overgaard S, Pedersen A, Eskelinen A, Pulkkinen P, Kärrholm J. Periprosthetic femoral fracture within two years after total hip replacement: analysis of 437,629 operations in the nordic arthroplasty register association database. *J Bone Joint Surg Am*. 2014 Oct 1;96(19):e167. doi: 10.2106/JBJS.M.00643. PMID: 25274795.

Lecture 2: Tearing down barriers in changing practice from cementless to cemented hip stem fixation

- **Blythe R**, O'Gorman PM, Crawford RW, Feenan R, Hatton A, Whitehouse SL, Graves N. *J Arthroplasty*. Fixation Method for Hip Arthroplasty Stem Following Hip Fracture: A Population-Level Cost-Effectiveness Analysis. 2020 Jun;35(6):1614-1621. doi: 10.1016/j.arth.2020.02.001. Epub 2020 Feb 8.
- **Bökeler U**, Bühler A, Eschbach D, Ilies C, Liener U, Knauf T. The Influence of a Modified 3rd Generation Cementation Technique and Vacuum Mixing of Bone Cement on the Bone Cement Implantation Syndrome (BCIS) in Geriatric Patients with Cemented Hemiarthroplasty for Femoral Neck Fractures. *Medicina (Kaunas)*. 2022 Nov 3;58(11):1587. doi: 10.3390/medicina58111587. PMID: 36363544; PMCID: PMC9696240.
- **Donaldson AJ**, Thomson HE, Harper NJ, Kenny NW. Bone cement implantation syndrome. *Br J Anaesth*. 2009 Jan;102(1):12-22. doi: 10.1093/bja/aen328. PMID: 19059919.
- **Klestil T**, Biedermann R, Krüger A, Gföller P, Schmoelz W, Rangger C, Krismer M, Blauth M. Cementless hemiarthroplasty in femoral neck fractures: evaluation of clinical results and measurement of migration by EBRA-FCAArch. *Orthop*

Trauma Surg. 2006 Aug;126(6):380-6. doi: 10.1007/s00402-006-0133-6. Epub 2006 Mar 24.

- **Rassir R**, Schuiling M, Sierevelt IN, van der Hoeven CWP, Nolte PA. What Are the Frequency, Related Mortality, and Factors Associated with Bone Cement Implantation Syndrome in Arthroplasty Surgery? Clin Orthop Relat Res. 2021 Apr 1;479(4):755-763. doi: 10.1097/CORR.0000000000001541. PMID: 33165048; PMCID: PMC8083844.
- **Springer BD**, Hubble MJW, Howell JR, Moskal JT. Cemented Femoral Stem Fixation: Back to the Future. J Arthroplasty. 2023 Jul;38(7 Suppl 2): S38-S44. doi: 10.1016/j.arth.2023.04.023. Epub 2023 Apr 21. PMID: 37086929.

Registry data

Australian National Joint Replacement Registry [Annual Report 2020](#)

Danish Hip Arthroplasty Register: [Annual Report 2021](#)

Dutch Arthroplasty Register (LROI): [Annual report 2022](#)

German Arthroplasty Registry (EPRD): [Annual report 2022](#)

Italian Arthroplasty Registry (riap): [Annual report 2021](#)

Norway (NAR): [Annual report 2022](#)

Swedish Arthroplasty Register: [Annual report 2022](#)

Swiss (SIRIS): [Report 2022](#)

UK (NJR): [19th Annual Report \(2022\)](#)

Additional papers

- **Duijnisveld BJ**, Koenraadt KLM, van Steenbergen LN, Bolder SBT. (2020) Mortality and revision rate of cemented and uncemented hemiarthroplasty after hip fracture: an analysis of the Dutch Arthroplasty Register (LROI), *Acta Orthopaedica*, 91:4, 408-413, DOI: 10.1080/17453674.2020.1752522
- **Gaik C**, Schmitt N, Wiesmann T: Knochenzementreaktion Pathophysiologie, Diagnostik und Behandlungsoptionen. *Anästh Intensivmed* 2019;60:124–133. DOI: 10.19224/ai2019.124
- **Kristensen TB**, Dybvik E, Kristoffersen M, Dale H, Engesæter LB, Furnes O, Gjertsen JE. Cemented or Uncemented Hemiarthroplasty for Femoral Neck Fracture? Data from the Norwegian Hip Fracture Register. *Clin Orthop Relat Res*. 2020 Jan;478(1):90-100. doi: 10.1097/CORR.0000000000000826. PMID: 31855192; PMCID: PMC7000039.
- **Membership of Working Party**; Griffiths R, White SM, Moppett IK, Parker MJ, Chesser TJ, Costa ML, Johansen A, Wilson H, Timperley AJ; Association of Anaesthetists of Great Britain and Ireland; British Orthopaedic Association; British Geriatric Society. Safety guideline: reducing the risk from cemented hemiarthroplasty for hip fracture 2015: Association of Anaesthetists of Great Britain and Ireland British Orthopaedic Association British Geriatric Society. *Anaesthesia*. 2015 May;70(5):623-6. doi: 10.1111/anae.13036. Erratum in: *Anaesthesia*. 2018 Feb;73(2):261. PMID: 25866041; PMCID: PMC6681143
- **Omari et al.** Introduction of a New Treatment Algorithm Reduces the Number of Periprosthetic Femoral Fractures After Primary Total Hip Arthroplasty in Elderly Females. 2405 patients > 60 y.o. *The Journal of Arthroplasty* 35 (2020) 3613e3620. DOI: 10.1016/j.arth.2020.06.077
- **Pedersen AB**, Mailhac A, Garland A, Overgaard S, Furnes O, Lie SA et al. Similar early mortality risk after cemented compared with cementless total hip arthroplasty for primary osteoarthritis: data from 188,606 surgeries in the Nordic Arthroplasty Register Association database. *Acta Orthop* 2021; 92(1):47–53. doi: 10.1080/17453674.2020.1842003.
- **Viberg B**, Pedersen AB, Kjærsgaard A, Lauritsen J, Overgaard S. Risk of mortality and reoperation in hip fracture patients undergoing cemented versus uncemented hemiarthroplasty: a population-based study from Danish National Registries. *Bone Joint J*. 2022 Jan;104-B(1):127-133. doi: 10.1302/0301-620X.104B1.BJJ-2021-0523.R1. PMID: 34969285.