
January 22, 2020

Letter to the Editor regarding: Matharu, G. S. et al. “The Effect of Surgical Approach on Outcomes Following Total Hip Arthroplasty Performed for Displaced Intracapsular Hip Fractures: An Analysis from the National Joint Registry for England, Wales, Northern Ireland and the Isle of Man.” JBJS, 102(1), 21-28.

Cecilia Rogmark

Department of Orthopaedics, Lund University, Skåne University Hospital, Malmö, Sweden

Other Contributors:

Frede Frihagen

Division of Orthopaedic Surgery, Oslo University Hospital, Oslo, Norway

Soren Overgaard

Department of Orthopedic Surgery and Traumatology, Odense University Hospital, Denmark

Dear Sir/Madam,

Thanks to a large national material, the authors feel secure to propose that the posterior approach is as safe as the anterolateral approach when performing THA for hip fracture and that either approach may be used according to surgeon preference. We beg to differ, based on following aspects:

1. Revision is too a blunt an outcome measure in the fracture population.
2. In a patient group with a “normal” one-year mortality of more than 20%, it seems clinically irrelevant to try to explain differences in mortality by one single surgical detail.
3. Results from a strictly selected population is extrapolated to a much larger patient group.
4. No data on which types of surgeons and/or hospitals who are doing the different approaches are given.

The authors gloss over that a number of clinical studies shows much higher total dislocation rate after the posterior approach, compared with the lateral one. Moreover, claiming to conclude on any effect, as the authors do both in title and in aim, is not possible with the current study design. Only an association between approach and outcomes can be discussed.

Any dislocation is painful and leads to emergency care, and already the second dislocation leads to persistent loss of health-related quality-of-life (1). Further, little is known how the decision to revise an unstable THA in a fracture patient is taken. Both the surgeon and the patient has to accept a new major procedure. Only one fourth of the patients with dislocations in a Swedish cohort had revision surgery (2). Using secondary open surgery as outcome measure trivializes the dislocation problem. The total dislocation rate is the crucial outcome measure, from both a patient's and a organizational point-of-view.

Mortality is found to be lower after the posterior approach. This is explained by better function after posterior approach. It would be interesting to hear the authors describe how palpable this difference has to be, in order to actually prevent death. In a hypothetical setting, all other things equal (pain relief, physiotherapeutic assistance, orthogeriatric care...), we agree that “nerve injury, reduced muscle strength, and limping” would be the only remaining factors to affect the mobility and thereby the risk of dying. Until we have that perfect care for hip fracture patients, we strongly believe that the difference in mortality in the current study is caused by selection bias and residual confounding. For example, may patients with increased risk of dislocation have been chosen to lateral approach? Alcohol abuse, psychiatric or cognitive impairment are factors not accounted for in the ASA classification, but they are associated with higher mortality after fracture. Such frailty traits of the patients, guiding our clinical decisions, are very hard to adjust for in register studies. A parallel finding is the lower mortality found after THA, compared with hemiarthroplasty, in register studies (3, 4). As THA leads to more bleeding and longer surgical time, and any functional benefits of a THA stands clear first after a couple of years, it is apparent that that difference in mortality is due to selection bias.

Regarding any functional difference between approaches in individuals with hip fracture, the literature is contradictive – yes, no and maybe (5, 6, 7). Any functional benefit from posterior approach leading to reduced mortality would be so large that a number of studies should have found it already.

The study comprises approximately 1,400 patients each year. In UK, 76,000 hip fractures occur annually, At least 25,000 ought to be displaced femoral neck fractures. The study population is highly selected.

In the unmatched cohort, the posterior approach-surgeons are more “innovative”, using more hybrids, larger heads and alternative bearings. They are also more often consultants. Is there a dividing line between arthroplasty surgeons and trauma surgeons in the aspect of approach in UK? Younger and less experienced surgeons perform hemiarthroplasties with lateral approach, and may choose the same approach for occasional THAs. Arthroplasty consultants use the same posterior approach as in their elective cases. The latter is supported by the authors, who argue that their results on posterior approach are better than a previous NJR study, thanks to more posterior approaches in elective THA nowadays. All in all, the results seem skewed by performance bias. In Sweden, both residents and all types of consultants do acute arthroplasty surgery, as part of their emergency duty. The Swedish Hip Arthroplasty Register has reported a higher risk of revision after posterior approach during several years, when including both THA and hemis. In addition, a forthcoming national study on “any dislocation” shows 13% THA dislocation after posterior approach in fracture cases, compared to 5% with lateral approach (8).

The current study signals a different outcome after posterior approach in UK hip fracture patients, compared to studies from all over the world. This is rather explained by bias, than being a novel finding. If an observational study is built on heterogenic subgroups in fundamental aspects, no matching or adjusting will straighten it up.

The reality of elderly individuals with displaced femoral neck fracture is that posterior approach is more risky!

Yours sincerely,

Cecilia Rogmark, Frede Frihagen, Soren Overgaard

Disclaimer: e-Letters represent the opinions of the individual authors and are not copy-edited or verified by JBJS.

References

1. Enocson, A., Pettersson, H., Ponzer, S., Törnkvist, H., Dalén, N., & Tidermark, J. (2009). Quality of life after dislocation of hip arthroplasty: a prospective cohort study on 319 patients with femoral neck fractures with a one-year follow-up. *Quality of Life Research*, 18(9), 1177-1184.
2. Enocson, A., Hedbeck, C. J., Tidermark, J., Pettersson, H., Ponzer, S., & Lapidus, L. J. (2009). Dislocation of total hip replacement in patients with fractures of the femoral neck: A prospective cohort study of 713 consecutive hips. *Acta orthopaedica*, 80(2), 184-189.
3. Hansson, S., Bülow, E., Garland, A., Kärrholm, J., & Rogmark, C. (2019). More hip complications after total hip arthroplasty than after hemiarthroplasty as hip fracture treatment: analysis of 5,815 matched pairs in the Swedish Hip Arthroplasty Register. *Acta orthopaedica*, 1-6.
4. Metcalfe, D., Judge, A., Perry, D. C., Gabbe, B., Zogg, C. K., & Costa, M. L. (2019). Total hip arthroplasty versus hemiarthroplasty for independently mobile older adults with intracapsular hip fractures. *BMC musculoskeletal disorders*, 20(1), 226.
5. Kristensen, T. B., Vinje, T., Havelin, L. I., Engesæter, L. B., & Gjertsen, J. E. (2017). Posterior approach compared to direct lateral approach resulted in better patient-reported outcome after hemiarthroplasty for femoral neck fracture: 20,908 patients from the Norwegian Hip Fracture Register. *Acta orthopaedica*, 88(1), 29-34.
6. Mukka, S., Knutsson, B., Majeed, A., & Sayed-Noor, A. S. (2017). Reduced revision rate and maintained function after hip arthroplasty for femoral neck fractures after transition from posterolateral to direct lateral approach. *Acta orthopaedica*, 88(6), 627-633.
7. Hongisto, M. T., Nuotio, M. S., Luukkaala, T., Väistö, O., & Pihlajamäki, H. K. (2018). Lateral and posterior approaches in hemiarthroplasty. *Scandinavian Journal of Surgery*, 107(3), 260-268.
8. The Swedish Hip Arthroplasty Register. Annual Report 2017. DOI: 10.18158/BkOffx7U4
<https://shpr.registercentrum.se/shar-in-english/annual-reports/p/rkeyyeElz>

Conflict of Interest: None Declared