



## CORR Insights

**CORR Insights®: Cemented Bipolar Hemiarthroplasty Provides Definitive Treatment for Femoral Neck Fractures at 20 Years and Beyond**

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**Where Are We Now?**

**O**steoporotic hip fractures consume substantial resources in developed healthcare systems; their prevalence continues to rise, and at the same time, overall life

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expectancy is increasing [3]. Many studies have found that approximately 25% of hip fracture patients will not survive beyond 1 year [2]; however, with improved awareness of the time-critical nature of this injury, as well as advances in medical care, it is likely that this figure will fall. As a result, the need for long-term studies on pain and function after treatment of these injuries is readily apparent.

The paper by Roth and colleagues is unusual in that it provides 20-year outcome data for the use of cemented bipolar hemiarthroplasty for unselected patients presenting with osteoporotic hip fractures. In their study, the authors show that this type of procedure or implant will outlive the vast majority of patients in this group (as they observed a cumulative

revision rate of just 3.5% at 20 years). They also show a low incidence of acetabular erosion, despite this being one of the stated problems with hemiarthroplasty in younger or more active patients [1, 5]. The implants used were of older designs, and so perhaps even better results could be expected today. The study's ability to assess functional outcomes, however, is limited, having only a small group of patients available for analysis who remained alive at long-term (20 patients). Additionally, of the 20 surviving patients, only seven retained the original implants, suggesting that while the procedure performed may outlive most patients, those patients who survive may need a revision at some point.

**Where Do We Need To Go?**

As of now, the question of which procedure will best meet the long-term needs of patients with intracapsular neck of femur fractures remains unanswered. Similarly, the functional

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outcomes of hemiarthroplasty at 5, 10, and 15 years remain largely unknown. Balancing the risks of each procedure against the potential gains for the patient, while taking into account each patient's life-expectancy remains the predominant issue when deciding which procedure to perform. This becomes even more difficult in the face of specific conditions such as Parkinsons disease or dementia.

Despite the frequency of osteoporotic hip fractures, well-structured research in the area remains rare. Randomized controlled trials are infrequent, followup times typically are short, and with no validated disease-specific outcome measures available, a variety of outcome tools have been used. As a result, there is a dearth of useful data available, and the data that exist are quite variable. Some help has come in the form of large data registries. Recently, the National Institute for Health and Care Excellence has been driving care in England with promising results through national care standards [4]. The evidence base for their standards, however, remains poor in most areas, with only short-term follow-up. Specific debates regarding displaced intracapsular fractures continue to be unanswered, including the role of cemented versus uncemented femoral stems, THA versus unipolar or bipolar hemiarthroplasty, and the effects of

either of these on mid- to long-term patient function and outcomes.

In any case, the main issues that remain unanswered fall into two categories—procedure-related concerns and patient-related concerns, and they need to be addressed by future studies.

## How Do We Get There?

We need large prospective trials to compare the functional outcomes of hemiarthroplasty to total joint arthroplasty, as well as to compare cemented versus noncemented approaches to fixation. These studies should employ the full range of pragmatic outcome measures, including pain, activities of daily living, and quality of life. While data on implant survivorship and surgical complications is important, it is only part of the story; all of this information is needed in both the short-to medium-term, as well as the long-term. Owing to the high number of variables involved, these trials will need to be both well-structured and multicentered—some trials along these lines are already underway in different countries. Patient-related factors are more difficult to attain, and a large amount of epidemiological work is required to develop a better modeling system. However, this work should facilitate a more accurate prediction of patients' life expectancy and future demands.

In this paper, patient age did not predict implant survivorship. That being so, one surmises that simple age and mobility cut-offs (eg, all patients under the age of 75 with good mobility receive a total joint arthroplasty) will result in many patients receiving larger, inherently more risky procedures than this paper would suggest is necessary.

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