CORR Insights®

Restoration of the Hip Center During THA Performed for Protrusio Acetabuli Is Associated With Better Implant Survival

Malcolm L. Ecker MD, MCIT

Received: 25 May 2013 / Accepted: 6 June 2013 / Published online: 22 June 2013
© The Association of Bone and Joint Surgeons® 2013

Where Are We Now?

Total hip arthroplasty (THA) has evolved to a predictable procedure for the majority of patients with good to excellent results during long followup periods. We are now at the stage of refining our data and fine tuning THA with the goal of achieving excellent results in those patients who did not do well during followup. The authors note that protrusio acetabuli, which they define well in their paper, is an uncommon condition; they identified only 162 hips with this problem from the massive Mayo Clinic joint registry. The figure in their paper shows how subtle the protrusio may become. The authors analyzed the data to determine if restoring the hip center to the native hip center of rotation,

as defined by Ranawat, would decrease the occurrence of aseptic loosening of the prosthetic cup.

It is worth mentioning that during the study period, two important changes took place: cementless cups supplanted cemented cups, and better treatments for inflammatory arthritis became available. As we follow the increasing ratio of idiopathic cases to inflammatory cases during the period of this study, we can speculate based on the curves that the improved rheumatological approaches in more common use have resulted in fewer patients with inflammatory arthritis having joint replacement.

Where Do We Need to Go?

The authors demonstrated that careful analysis of the pre-operative radiograph will allow more precise restoration of the original hip anatomy and mechanics. It should be noted that this was a retrospective study. The surgeons placed the acetabulum in what they thought was an appropriate location and had enough skill to know that bone graft was needed in most cases to move the cup laterally to a more anatomic position. The surgeons used intraoperative radiographs with a trial acetabulum to confirm the position. Using the method described in the paper should allow more precise placement, but determining the native center of rotation on an intraoperative radiograph will be difficult. I believe that the cases in the study were not done with this method. The authors found that over lateralization is detrimental, and the limitations of their measurements are given in the paper's discussion. Are we as surgeons able to make 1 mm adjustments? We should analyze our databases for similar refinements in procedures that can potentially provide better outcomes. Do we know the ideal version,

This CORR Insights® is a commentary on the article "Restoration of the Hip Center During THA Performed for Protrusio Acetabuli Is Associated With Better Implant Survival" by Baghdadi and colleagues available at: DOI: [10.1007/s11999-013-3072-x](https://doi.org/10.1007/s11999-013-3072-x).

The author certifies that he, or a member of his immediate family, has no funding or commercial associations (eg, consultancies, stock ownership, equity interest, patent/licensing arrangements, etc) that might pose a conflict of interest in connection with the submitted article.

All ICMJE Conflict of Interest Forms for authors and *Clinical Orthopaedics and Related Research*® editors and board members are on file with the publication and can be viewed on request.

The opinions expressed are those of the writers, and do not reflect the opinion or policy of CORR® or the Association of Bone and Joint Surgeons®.

This CORR Insights® comment refers to the article available at DOI: [10.1007/s11999-013-3072-x](https://doi.org/10.1007/s11999-013-3072-x).

M. L. Ecker (✉)
Perelman School of Medicine, University of Pennsylvania,
The Children's Hospital of Philadelphia, 34th and
Civic Center Blvd, Philadelphia, PA 19103, USA
e-mail: eckerm@email.chop.edu; mecker@comcast.net

head size, and lateral displacement for each individual patient?

How Do We Get There?

Collecting data in large registries offers surgeons the opportunity to find small, but meaningful variations that could potentially change outcomes that may not be apparent for 10 to 15 years. The randomized trial is ideal, but difficult to perform, especially for uncommon diagnoses like protrusio acetabuli. By paying attention to small details, carefully studying the preoperative radiographs,

and seeking precision during surgery, we are more likely to achieve our surgical goals. Whether computer-assisted surgery will help us achieve more precise positioning of the components is yet to be determined. The virtual computer image would be ideal for showing the native center of rotation and whether the trial component had achieved this position. This article shows that recognizing the protrusio and trying to accommodate it intraoperatively to restore the center of rotation to the native center of rotation of the hip resulted in less aseptic loosening. As surgeons, we need to analyze postoperative radiographs critically to determine whether we achieved our preoperative goal for each patient.