



CORR Insights

CORR Insights®: LUMiC® Endoprosthetic Reconstruction After Periacetabular Tumor Resection: Short-term Results

Jason S. Weisstein MD, MPH

Where Are We Now?

The management of large periacetabular defects after oncologic resections has always been one of the most technically demanding surgical interventions in orthopaedics. The appropriate treatment options generally include either amputation, internal hemipelvectomy, allograft composite reconstruction, or endoprosthetic replacement. However, each is, in its own way, a high-risk intervention.

Bus and colleagues retrospectively studied a novel modular prosthesis

with pelvic and hydroxyapatite-coated femoral fixation (LUMiC® prosthesis [implantcast, Buxtehude, Germany]) with a minimum multicenter followup of 24 months. The authors found that while dislocations were a common cause of failure (recurrent dislocations occurred in 9%, or four of 47 patients), a dual-mobility articulation lowered the risk of dislocation. And although loosening was found to be consistent with other published studies on other novel methods of pelvic endoprosthetic reconstruction [2, 4], infection was the most common complication reported. The authors did note that the

majority of the infections were successfully managed with débridement and antibiotics.

Where Do We Need To Go?

Although this study certainly adds promise to the armamentarium of prosthetic pelvic reconstruction options, it remains unclear whether cemented or uncemented femoral fixation differs in terms of overall durability, and whether silver coating of the acetabulum leads to fewer infections.

How Do We Get There?

A larger study size with long-term followup will help to elucidate these issues. Additionally, the authors may consider utilizing a functional outcome measurement tool such as the Musculoskeletal Tumor Society Score, the Toronto Extremity Salvage Score, or the Barthel Index to determine if this prosthesis adds functional benefits compared to historical interventions

This CORR Insights® is a commentary on the article “LUMiC® Endoprosthetic Reconstruction After Periacetabular Tumor Resection: Short-term Results” by Bus and colleagues available at: DOI: [10.1007/s11999-016-4805-4](https://doi.org/10.1007/s11999-016-4805-4).

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/s11999-016-4805-4](https://doi.org/10.1007/s11999-016-4805-4).

J. S. Weisstein MD, MPH (✉)
Paley Institute, Kimmel Bldg., 901 45th
Street, West Palm Beach, FL 33431, USA
e-mail: jweisstein@paleyinstitute.org

CORR Insights

such as external hemipelvectomy and internal hemipelvectomy with or without reconstruction. Long-term functional outcomes are similar between patients who underwent external hemipelvectomy and complex limb sparing endoprosthetic reconstruction. In today's cost conscious healthcare environment, answers to such questions may become increasingly important [1, 3, 5].

Lastly, as is noted by the authors, periacetabular reconstruction surgery has a substantial learning curve and it is entirely plausible that the benefits of this intervention might only be achievable in experienced hands. Future studies should attempt to identify differences in durability and

functional outcomes between patients with primary bone sarcomas and other oncologic diagnoses such as metastatic carcinoma where age, comorbidities, and medical treatment may differ considerably.

References

1. Beck LA, Einertson MJ, Winemiller MH, DePompolo RW, Hoppe KM, Sim FF. Functional outcomes and quality of life after tumor-related hemipelvectomy. *Phys Ther.* 2008;88:916–927.
2. Bus MP, Boerhout EJ, Brammer JA, Dijkstra PD. Clinical outcome of pedestal cup endoprosthetic reconstruction after resection of a periacetabular tumour. *Bone Joint J.* 2014;96:1706–1712.
3. Enneking WF, Dunham W, Gebhardt MC, Malawer M, Pritchard DJ. A system for the functional evaluation of reconstructive procedures after surgical treatment of tumors of the musculoskeletal system. *Clin Orthop Relat Res.* 1993;286:241–246.
4. Fisher NE, Patton JT, Grimer RJ, Porter D, Jeys L, Tillman RM, Abudu A, Carter SR. Ice-cream cone reconstruction of the pelvis: a new type of pelvic replacement: early results. *J Bone Joint Surg Br.* 2011;93:684–688.
5. Griesser MJ, Gillette B, Crist M, Muscarella P, Scharschmidt T, Mayerson J. Internal and external hemipelvectomy or flail hip in patients with sarcomas: Quality of life and functional outcomes. *Am J Phys Med Rehabil.* 2012;91:24–32.