



## CORR Insights

**CORR Insights®: Does Cup-cage Reconstruction With Oversized Cups Provide Initial Stability in THA for Osteoporotic Acetabular Fractures?**

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**Where Are We Now?**

In their study, Solomon and colleagues share their experience with a difficult surgical approach: Immediate treatment with THA for osteoporotic acetabular fractures in

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older patients. The authors call upon techniques used in reconstructions for pelvic discontinuity, and used cup-cage implants in combination with acetabular distraction technique. In the last 20 years, there have been substantial changes to how surgeons treat pelvic fractures in older patients—from nonoperative approaches (often resulting in poor functional outcomes) to aggressive surgical approaches including immediate THA. Early experience with immediate THA demonstrated high percentages of radiographic loosening [3], indicating that advanced techniques are clearly warranted.

Solomon and colleagues presented their data as a radiologic study and demonstrated excellent stability of the acetabular component regarding the ilium, using radiostereometric analysis

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(RSA). To allow for RSA analysis, up to 12 tantalum beads (0.8 mm in diameter) were inserted into the ilium and the ischium. In all reconstructions, oversized trabecular component and cage were fixed with multiple screws to the ilium only. Unfortunately, the migration of acetabular components relative to the ischium was not recorded due to poor visibility of tantalum markers on subsequent postoperative radiographs or difficulties with accurate placement of beads into the ischium due to limited exposure.

**Where Do We Need To Go?**

It appears that in acute pelvic transverse acetabulum fracture stability of the ischium is more important for postoperative pain control and rehabilitation than in cases of chronic pelvic discontinuity. Inferior fixation of an acetabular cage can be obtained (with certain kinds of cages) by slotting the inferior flange into the ischium without the need for screw fixation.

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The authors are planning to use more robust fixation with screws from the cup directed into ischial tuberosity and the superior pubic ramus in order to achieve more stable fixation of the transverse component of the pelvic discontinuity. I believe this will increase stability and allow earlier weight bearing. While Solomon and colleagues provided good data about cap-cage construct stability, a number of clinical questions remain about the use of immediate THA in patients with osteoporotic acetabulum fractures, such as specific fracture pattern, that will be best indication for this type of surgery, timing of surgical intervention [2] and postoperative protocols for such frail patients.

## How Do We Get There?

It is my hope that future studies will include recorded clinical outcomes, pain scores, and longer-term followup. Also, we know that only 30% of patients were treated with immediate

THA. Therefore, including clinical data on other patients treated with conservative measures or with different operative techniques would be ideal. I applaud the authors for their attempt to treat the most difficult and frail patients with osteoporosis (median age, 81 years), using the most technologically advanced implants and techniques available today.

Operating on such frail patients is bound to lead to complications; in this series, one patient died 7 days after surgery from pulmonary embolism (PE) and another experienced a non-fatal PE. Given that there were only 11 patients in the series, we need to take careful note of these important events. This is an extensive and risky surgery for elderly patients. Careful patient selection is called for, and it is likely that some medically high-risk patients will benefit from 3 to 6 months of conservative treatment, followed by a late conversion to THA. Conversely, Solomon and colleagues had no intraoperative complications, and it appears, that the addition of cage to

cup distraction technique allows surgeons to use less screws from the cap while also decreasing the risk of injury to the femoral artery and colon. In my opinion, this is an important aspect of the paper and goes along with promising early results of cup-cage construct for pelvic discontinuity [1].

## References

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