CORR Insights®: Validity and Reliability of the Paprosky Acetabular Defect Classification

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In the article, “Validity and Reliability of the Paprosky Acetabular Defect Classification,” Yu et al. determined the validity, teachability and reliability of a classification system we described for categorizing acetabular defects in revision THA. When we first presented this classification system in the early 1990s, few classified and standardized the reporting on acetabular defects in the literature. Due to limited advancements in imaging at the time, we attempted to create a classification system based on an AP radiograph for wide use by the orthopaedic community. Our classification system was broadly adopted due to the paucity of other classification systems and the ease of using a simple AP radiograph. Although our classification system is still taught in the classroom, it has yet to be validated in the literature.

The purpose of the study by Yu et al. was to establish whether the preoperative Paprosky classification, determined

by the blinded observers, correlated with intraoperative findings; and whether the reliability of the classification system improved with formal teaching.

As observed when we described the classification system in 1994, the severity of the defect as graded radiographically correlates with intraoperative findings. In particular, we emphasized that our classification system was useful in predicting the integrity of major anatomic landmarks, including the teardrop, ischial bone loss, the ilioischial line (Kohler’s line), and the degree of superior migration of the cup. The authors properly presented the key components of our classification system in Table 2. The observers in this article accurately determined the integrity of these major structures using an AP pelvis radiograph, with more severe disruption of the teardrop, the ilioischial line, and superior bone loss correlating with more severe intraoperative bone loss ($p < 0.05$). The observers in group 1 who underwent formal teaching sessions each 2 week period prior to grading the radiographs, significantly improved their reliability between the first and third grading sessions. The interobserver reliability increased from moderate to good between session 1 and 3. Similarly, the observers who underwent one teaching session improved their reliability from moderate to good. These results suggest that our system is teachable. One criticism is that the intraoperative findings could have been skewed based on the degree of iatrogenic bone loss that occurred during cup removal. Even if this occurred, the classification system was found to be reliable, valid, and teachable, just as we had hoped when we created it nearly 20 years ago.

We appreciate the work of Yu et al. in validating our classification system and we hope it has, and will continue helping orthopaedic surgeons accurately report and manage acetabular defects in revision THA.

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