

Letters to the Editor

The Bare Spot of the Glenoid

To The Editor:

I am writing in regard to the study by Kralinger et al. in the April 2006 issue of *Arthroscopy* entitled "Is the Bare Spot a Consistent Landmark for Shoulder Arthroscopy? A Study of 20 Embalmed Glenoids With 3-Dimensional Computed Tomographic Reconstruction."¹ This study evaluated 20 embalmed glenoids by means of 3-dimensional computed tomographic reconstructions. The study concluded that the glenoid bare spot is not a consistent anatomic landmark for the midpoint of the inferior glenoid. This conclusion directly contradicts the conclusion of a study previously published by our group.²

In our study, we found that the bare spot was a consistent reference point for locating the center of the inferior glenoid. Our measurements were performed arthroscopically in 56 patients (average age, 40 years) who had no evidence of instability. Our bare spot measurements had tightly clustered standard deviations, confirming its consistent location. We also did these measurements in 10 fresh-frozen cadaver shoulders (average age, 76 years) with similar results.

In contrast, the study performed by Kralinger and his associates was strictly an anatomic study on embalmed specimens that were quite elderly. In fact, the average age of these cadavers was 81.6 years and ranged all the way up to 100 years. My experience in dealing with embalmed elderly specimens is that there are often artifactual changes to the articular cartilage as a result of the embalming process. For that reason, the true

location of the bare spot of the glenoid can be difficult, if not impossible, to accurately ascertain in such specimens.

The study by Kralinger et al. did not confirm the conclusion of our study that the bare spot was the center of a semicircle formed by the inferior glenoid rim. My impression is that these authors imply that their study disproves the results of our previous study. However, I think their methodology of studying embalmed cadaver specimens, with the artifactual inconsistencies that are inherent in such specimens, would make their measurements less reliable than ours because our measurements were obtained arthroscopically in young live subjects as well as in fresh-frozen cadaver specimens. Therefore, I think the reader must be skeptical of the conclusions reached by Kralinger et al.

Stephen S. Burkhart, M.D.
San Antonio, Texas

REFERENCES

1. Kralinger F, Aigner F, Longato S, Rieger M, Wambacher M. Is the bare spot a consistent landmark for shoulder arthroscopy? A study of 20 embalmed glenoids with 3-dimensional computed tomographic reconstruction. *Arthroscopy* 2006;22:428-432.
2. Burkhart SS, DeBeer JF, Tehrany AM, Parten PM. Quantifying glenoid bone loss arthroscopically in shoulder instability. *Arthroscopy* 2002;18:488-491.

Authors' Reply

We appreciate the opportunity to respond to Dr. Burkhart's letter concerning the bare spot. In the cadaveric course of our anatomic institute, 57 shoulders were used.¹ The mean age of this entire group was 81.6 years (range, 55 to 100 years). By the time of selection, personal data were no longer linked to the specimens; therefore, the exact gender and age of the selected specimens are not clear. The selection criterion was a clearly visible bare spot; there were no visible artifactual cartilage changes. So we would like to emphasize that one could argue that we did a pro-bare spot selection.

The criteria for inclusion were intact rotator cuff, intact capsulolabral complex, and no osteoarthritic deformation of the glenoid and humeral head. In some shoulders fulfilling the inclusion criteria with regard to cartilage, rotator cuff, and intact capsulolabral

complex, we could not identify the bare spot at all. This finding correlates with a recent study performed by Huysmans et al.,² who were not able to define a bare spot in 5 of 40 shoulders (12.5%). They also confirmed our finding of eccentricity, but for the smaller differences of only 1 to 2 mm, they concluded that the bare spot can be used for "estimation" of bone loss.

The mean values of the 3 distances do not represent the centricity or eccentricity in each individual specimen; therefore we calculated the maximal difference within every single specimen. In our macroscopic measurements (from the bare spot to the undetached labral edge), which better represent the intraoperative measurements, the mean maximal difference was 4.2 mm (range, 0.9 to 8.9 mm); the entire mean anteroposterior distance was 23.4 mm. So 4.2 mm represents 17.95% of this