Area-Based Determination of Bone Loss Using the Glenoid Arc Angle

To the Editor:

Concerning the article by Dumont et al., "Area-Based Determination of Bone Loss Using the Glenoid Arc Angle,"[1] published in the July 2012 issue of *Arthroscopy*, we appreciate the mathematical-geometrical approach to determine glenoid bone loss[2] and hope that it becomes more popular as it was published in this high-level journal.

Dumont et al. state that a bilateral CT scan for comparison has the inherent disadvantage of added radiation exposure for the patient. This is not correct because recording axial scans of one shoulder with spiral CT automatically causes radiation exposure to both shoulders, because the scanner has to radiograph the entire transversal section. Therefore, recording axial scans of both shoulders has no additional radiation exposure. The radiologist may reconstruct both sides out of the same data set as long as the surgeon requests primary axial scans of both shoulders.

Jeske et al.[3] confirmed that the healthy inferior glenoid has the shape of a circle, and they described a perfect side-to-side correlation of the glenoid surface area. This correlation can be applied to improve measurement of bony glenoid defects by using the diameter of the ROI of the nonaffected glenoid as a reference.

According to our institutional experience, especially large glenoid defect sizes tend to be underestimated, without taking the contralateral healthy glenoid into account. The glenoid arc angle method with bilateral testing may hold the potential for higher reproducibility and practicability, but this has not been proven yet. An exact consistent measurement standard will allow recommendations on treatment of shoulder instability combined with glenoid bone loss and may be the precondition to define the critical size of glenoid bone loss.

Clemens Hengg, M.D.
Michael Blauth, M.D.
Markus Wambacher, M.D.
Franz Kralinger, M.D.
Innsbruck, Austria

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Author's Reply

To the Editor:

In response to the letter by Hengg et al. concerning our article entitled "Area-Based Determination of Bone Loss Using the Glenoid Arc Angle" published in the July 2012 issue of *Arthroscopy*, we appreciate the clarification regarding the amount of radiation exposure for bilateral shoulder computed tomography. The comments by Hengg et al. bring to our attention the fact that if computed tomography images of the contralateral uninjured shoulder are obtained simultaneously with that of the injured shoulder, no additional radiation is incurred by the patient. Requesting routine reconstruction images from the contralateral/uninjured shoulder for comparison should thus be considered in patients with shoulder instability. These images must be acquired during the same scanning procedure as those of the injured shoulder to avoid the additional radiation exposure of a second study.

Guillaume D. Dumont, M.D.
Boston, Massachusetts

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