

Correspondence

Changes in load-bearing area after Ganz periacetabular osteotomy

Sir—We read the article by Mechlenburg et al. (2004) with interest.

The authors describe a CT-based method for measurement of acetabular coverage of the femoral head in dysplastic hips.

We were disappointed not to find any reference to a previous article from our group that was published in your journal (De Kleuver et al. 1999), in which the radiograph-based method for analysis of this same problem was described. We described 51 hips that underwent pelvic osteotomy, and these results were similar to the 6 hips described in the current paper. Moreover, due to the larger numbers in our series, we were able to compare these radiological results with the 10 year follow-up, and we found that there did appear to be a weak relationship between poor posterolateral coverage of the femoral head and the clinical scores for walking ability. Mechlenburg et al. have similarly found that the area of the posterolateral quadrant is smaller than in normal hips, but the authors did not relate this to clinical outcome. Furthermore, to obtain these data the patients (including 5 females of child-bearing age) were exposed to a significant amount of extra radiation because of the extra CT of the pelvis, which had no therapeutic value.

There are many different techniques for acetabular reorientation, and it is interesting to note that the results obtained in the small case series by Mechlenburg with the peri-acetabular osteotomy are very similar to the results obtained in our larger series with a triple osteotomy.

We fully agree with the authors that hip dysplasia results in a smaller articulating surface which is obliquely oriented, and with an acetabular osteotomy this can be solved, but it would have been interesting if the authors had discussed the fact that different osteotomy techniques can achieve the same result, and if they had discussed the value of the CT technique with the concurrent radiation

dosage, compared to the conventional radiology-based technique.

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Sir—We thank Dr. de Kleuver et al. for their interest in our paper: “Changes in load-bearing area after Ganz periacetabular osteotomy evaluated by multislice CT scanning and stereology”. We wish to make the following comments. After reading the article by de Kleuver et al. (1999), we agree that their results deserve our attention and could have been referred to in our article. However, the article by de Kleuver et al. is mentioned indirectly in our article (p. 147, column 2): “Mathematical estimates of acetabular coverage have been made from plain radiographs, but the methods are complex and require a number of assumptions regarding the geometry of the hip joint” because their method has exactly these problems. Our study was designed primarily as a methodological study, and our aim was not to assess the clinical importance of the load-bearing area after Ganz periacetabular osteotomy.

Before Ganz periacetabular osteotomy, all patients are CT scanned routinely in order to determine the degree of reorientation of the acetabulum. Consequently, inclusion in the study resulted in one extra CT scan of the patients (radiation dosage due to an anteroposterior radiograph of the pelvis is 0.7 mSv, and 4.2 mSv by a CT examination of the pelvis). The project was accepted by the local ethics committee.

What was achieved with the extra radiation of our 6 patients? An unbiased and efficient stereologic method was achieved, by which the projected load-bearing area of the hip joint could be estimated. Our method is new, simple to perform and does not require any assumptions regarding the geometry of the hip joint. Furthermore, we plan to use our method by means of MRI and in this way eliminate the radiation completely in the future.

Different pelvic osteotomies are performed for reorientation of a deficient acetabulum. We prefer Ganz periacetabular osteotomy because the posterior column remains intact, conserving the stability of the pelvic ring and avoiding the risk of pseudoarthrosis of the reoriented acetabulum. The Ganz periacetabular osteotomy is a more challenging procedure from a surgical point of view, but results in a fast ambulatory patient and a short period of

physical rehabilitation due to a more stable osteotomy.

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De Kleuver M, Kapitein P J C, Kooijman M A P, van Limbeek J, Pavlov P W, Veth R P H. Acetabular coverage of the femoral head after triple pelvic osteotomy. No relation to outcome in 51 hips followed for 8–15 years. *Acta Orthop Scand* 1999; 70: 583-8.

Mechlenburg I, Nyengaard J R, Rømer L, Søballe K. Changes in load-bearing area after Ganz periacetabular osteotomy evaluated by multislice CT scanning and stereology. *Acta Orthop Scand* 2004; 75: 147-53.