Letter to the Editor

Cams and Pincer Impingement Are Distinct, Not Mixed

The Acetabular Pathomorphology of Femoroacetabular Impingement

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To the Editor:

I read with interest the article by Cobb et al. [2]. However, I have concerns regarding the validity of this work, because the method seems flawed. First, to categorize the hips into cam or pincer type femoroacetabular impingement (FAI), only AP radiographs of the pelvis were used. Pincer FAI was defined as a center-edge angle greater than 39° and a normal head-neck junction was assumed. Cam-type FAI was defined as an alpha angle greater than 50°. The measurement of this angle was performed using an AP radiograph of the pelvis, which is incorrect. Angle alpha is a parameter to describe the anterior asphericity or femoral offset. The angle alpha is measured on axial oblique MR images parallel to the axis of the femoral neck or on a lateral cross-table view [4, 5]. Dudda et al. [3] and Pfirrmann et al. [6] reported the AP view was not sufficient for diagnosis of a cam deformity. Cobb et al. therefore did not assess the asphericity of the femoral head-neck junction (cam deformity) correctly. A proper method would include analysis of three-dimensional CT data [1] or measurement of the maximal asphericity on MR images with radial orientation through the axis of the femoral neck [3, 7].

Second, Cobb et al. compared pistol grip deformities with coxa profunda. Both deformities are subgroups of cam

and pincer-type FAI. However, the presence of a deep acetabulum (coxa profunda) does not preclude the presence of a cam deformity. One should look for a cam deformity on a lateral view (alpha angle) and with radial MR or CT with three-dimensional reconstructions, as mentioned above.

The conclusion I draw from this study is that the shape of the acetabulum differs in hips with coxa profunda and hips with a pistol grip deformity. The methods used in this study are flawed and therefore, the authors' results and conclusions are incorrect and misleading.

References

1. Beaulé PE, Zaragoza E, Motamedi K, Copelan N, Dorey FJ. Three-dimensional computed tomography of the hip in the assessment of femoroacetabular impingement. *J Orthop Res.* 2005;23:1286–1292.
2. Cobb J, Logishetty K, Davda K, Iranpour F. Cams and pincer impingement are distinct, not mixed: the acetabular pathomorphology of femoroacetabular impingement. *Clin Orthop Relat Res.* 2010;468:2143–2151.
3. Dudda M, Albers C, Mamisch TC, Werlen S, Beck M. Do normal radiographs exclude asphericity of the femoral head-neck junction? *Clin Orthop Relat Res.* 2009;467:651–659.
4. Neumann M, Cui Q, Siebenrock KA, Beck M. Impingement-free hip motion: the 'normal' angle alpha after osteochondroplasty. *Clin Orthop Relat Res.* 2009;467:699–703.
5. Notzli HP, Wyss TF, Stoecklin CH, Schmid MR, Treiber K, Hodler J. The contour of the femoral head-neck junction as a predictor for the risk of anterior impingement. *J Bone Joint Surg Br.* 2002;84:556–560.
6. Pfirrmann CW, Mengiardi B, Dora C, Kalberer F, Zanetti M, Hodler J. Cam and pincer femoroacetabular impingement: characteristic MR arthrographic findings in 50 patients. *Radiology.* 2006;240:778–785.
7. Werlen S, Leunig M, Ganz R. Magnetic resonance arthrography of the hip in femoroacetabular impingement: technique and findings. *Oper Tech Orthop.* 2005;15:191–203.

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