

Editorial Commentary: Hip Borderline Dysplasia Patients May Have Acetabular Undercoverage and Larger Labra



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Abstract: The compensatory labrum needs to be considered in patients with mechanical hip pain. It is no longer adequate to broadly characterize patients with femoroacetabular impingement as either cam or pincher patients. Effective treatment of the syndrome requires in-depth assessment of version, head-neck offset, subspine, and capsule-labral morphology, especially in patients with borderline dysplasia. A larger acetabular labrum is associated with hip dysplasia, and labral length correlates with lateral center-edge angle and acetabular roof obliquity. Symptomatic hips show larger labra. Labral size and acetabular undercoverage are part of the spectrum in patients with borderline dysplasia and evidence of impingement. Quantitative and advanced 3-dimensional imaging is a critical evaluation tool.

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Much has changed since the initial description of femoroacetabular impingement syndrome (FAIS) by Dr. Ganz in 2003.¹ Momentous advancements in imaging modalities have provided an increasingly clear insight into the pathoanatomy of the condition in affected patients. Likewise, innovation in hip arthroscopy techniques and instrumentation have substantially expanded the horizons of treatment options. As has always been the case in orthopaedic surgery, the application of some of medicine's sharpest minds to a relatively new discipline has yielded dramatic effect. Thanks to these vast improvements in diagnostic ability and therapeutic options, there is no better time to be a patient with mechanical hip pain—or a hip arthroscopist, for that matter.

As the diagnosis and treatment of FAIS has evolved, the many nuances of the condition have become increasingly clear. It is no longer adequate to broadly characterize these patients as cam and pincher types. Effective treatment of the syndrome now requires an in-depth assessment of patient morphology at every layer of the hip.² The complex interplay between

acetabular and femoral version, femoral head-neck offset, and subspine morphology makes each case necessarily unique and patient specific.³ Furthermore, soft tissue considerations, such as capsule-labral morphology, are even more important when there is a question of instability or a patient with borderline dysplasia who may qualify for arthroscopic surgery.

Drs. Kamenaga, Hastimoto, Hayashi, Takayama, Nii-kura, Kuroda, and Matsumoto explore the importance of these considerations in their article "Larger Acetabular Labrum Is Associated With Hip Dysplasia, Joint Incongruency, and Clinical Symptoms."⁴ Principally, the authors' investigation evaluates the relationship between labral length on magnetic resonance imaging (MRI) and radiographic measures of acetabular morphology. In my opinion, 2 major compelling findings of this study deserve your consideration. First, labral length demonstrated a strong correlation with lateral center-edge angle (LCEA) and acetabular roof obliquity (ARO). Second, symptomatic hips demonstrated significantly larger labrums than asymptomatic ones. The former finding underscores a connection between labral size and acetabular undercoverage that merits further exploration. Meanwhile, the latter suggests a relationship between patient symptoms and labral morphology, an implication equally worthy of elucidation.

The authors note, appropriately, that this is not the first study to explore these relationships. Similar associations between labral size and acetabular morphology

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have been demonstrated by authors in the past.^{5,6} In my mind, these similar findings by independent researchers is confirmation that the concept of the “compensatory labrum” needs to be a priority for future studies in mechanical hip pain. Pursuant to my previous statement regarding the complexity of FAIS, it must be acknowledged that there exists a spectrum of gray for patients with borderline dysplasia who concomitantly demonstrate evidence of impingement findings. Controversy remains regarding the optimal treatment of these patients: specifically, as to when arthroscopic treatment is appropriate. Studies characterizing labral morphology as it relates to acetabular coverage bring this controversy to the forefront, but more data regarding the outcomes for these “borderline” patients are needed.

Our ongoing journey to optimize patient outcomes by improving diagnostic and therapeutic precision is one that will require stepwise progression. With regard to our understanding of the underlying hip pathology that we treat with arthroscopy, this study represents one such step in the right direction. To continue to make these strides, focus must be dedicated to prospective investigations of the relationship between hip morphology and measures of patient outcomes. Quantitative and advanced 3-dimensional imaging offers us an increasingly clear picture of the hip and should be paired with sophisticated measures of patient-reported outcomes.

In time, we may be able to discern subtle variations and patterns among patients to give us a better idea

whom will benefit most from arthroscopic surgery. Undoubtedly, the prospect of such outcome stratification would be of great benefit to both surgeon and patient. Our technological toolkit has never been better equipped. Now is the time to explore this frontier.

References

1. Ganz R, Parvizi J, Beck M, Leunig M, Notzli H, Siebenrock KA. Femoroacetabular impingement: A cause for osteoarthritis of the hip. *Clin Orthop Relat Res* 2003;417:112-120.
2. Draovitch P, Edelstein J, Kelly BT. The layer concept: Utilization in determining the pain generators, pathology and how structure determines treatment. *Curr Rev Musculoskelet Med* 2012;5:1-8.
3. Hammoud S, Bedi A, Voos JE, Mauro CS, Kelly BT. The recognition and evaluation of patterns of compensatory injury in patients with mechanical hip pain. *Sports Health* 2014;6:108-118.
4. Kamenaga T, Hayashi S, Hastimoto S, Takayama K, Niikura T, Kuroda R, Matsumoto T. Larger acetabular labrum is associated with hip dysplasia, joint incongruency and clinical symptoms. *Arthroscopy* 2020;36:2446-2453.
5. Gupta A, Chandrasekaran S, Redmond JM, Hammarstedt JE, Cramer TL, Liu Y, Domb BG. Does labral size correlate with degree of acetabular dysplasia? *Orthop J Sports Med* 2015;3:2325967115572573.
6. Garabekyan T, Ashwell Z, Chadayammuri V, Jesse MK, Pascual-Garrido C, Petersen B, Mei-Dan O. Lateral acetabular coverage predicts the size of the hip labrum. *Am J Sports Med* 2016;44:1582-1589.