

## Editor's Spotlight/Take 5

# Editor's Spotlight/Take 5: Novel 3-D Quantification and Classification of Cam Lesions in Patients with Femoroacetabular Impingement (DOI 10.1007/s11999-012-2693-9)

Seth S. Leopold MD

**F**ile this one under “science is fun.” This manuscript has it all: a hot topic, a young investigator,

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*Note from the Editor-in-Chief: In “Editor’s Spotlight,” one of our editors provides brief commentary on a paper we believe is especially important and worthy of general interest. Following the explanation of our choice, we present “Take Five,” in which the editor goes behind the discovery with a one-on-one interview with an author of the article featured in “Editor’s Spotlight.”*

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S. S. Leopold (✉)  
1600 Spruce Street, Philadelphia,  
PA 19013, USA  
e-mail: sleopold@clinorthop.org

some early success in terms of extramural funding, and a high-tech approach to quantifying a problem—cam lesions in femoroacetabular impingement (FAI)—that is too often discussed using seat-of-the-pants estimations.

The “Emerging Ideas” section of *Clinical Orthopaedics and Related Research*® is not the part of the journal that contains the answers. It is the place where some of the most interesting questions are approached by some of the best minds in our specialty. In this report, Dr. Richard Kang and colleagues demonstrate a promising approach to quantifying the femoral-sided pathology in patients with FAI.

Several groups [2, 3] have presented other advanced imaging approaches; what makes Dr. Kang’s technique particularly attractive is its apparent ability to characterize location, height, and volume of cam lesions in a way that is both visually intuitive and readily quantified. Of course, this was an “Emerging Ideas” piece, so the results presented were very preliminary. Still, the technology is fascinating, and we look forward to further studies from this program in the future.

This science is not just fun; it is important. We need consistent, reliable, quantifiable methods for diagnosing FAI. While there remains some disagreement within our specialty over the degree to which FAI causes symptoms or progresses to arthritis, few specialists deny that it exists. Outside of our specialty, in minds of payors and perhaps others, there appears to be doubt, which may turn into pressure if we can’t “amp up” the science on the subject. A recent, massive meta-analysis from the Washington State Health Care Authority (WSHCA) [1] found “no evidence for the efficacy of open or arthroscopic approaches for FAI compared with no surgical intervention.” Even more importantly, for purposes of this “Emerging Ideas” report, WSHCA characterized the strength of the evidence, even for agreement on how to make the diagnosis, as “very low.”

The tool that Kang and colleagues are developing may be an important step towards changing that. We wish them well in this endeavor, and, in the “Take 5” interview that follows, we explore with Dr. Kang the challenges

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of discovery, program building, and starting out as a clinician-scientist.

## “Take Five” with Richard W. Kang, MD

**Lead author of: Novel 3-D Quantification and classification of cam lesions in patients with femoroacetabular impingement (DOI [10.1007/s11999-012-2693-9](https://doi.org/10.1007/s11999-012-2693-9))**

**Seth S. Leopold MD:** *What prompted your interest in developing a systematic approach to advanced imaging of femoroacetabular impingement (FAI)?*

**Richard W. Kang MD:** FAI is an increasingly recognized condition in the hip. With increasing recognition, it is important to ensure that we deliver quality care to our patients on a consistent basis. Given the three-dimensional nature of a cam lesion, we felt there was a need to characterize this lesion accurately, and we believed advanced imaging techniques would help us to do this. As in any other operation, preplanning is critical. We sought an approach to provide us with the best tool to prepare for our cases.

**Dr. Leopold:** *Your approach is ambitious; what gave you the confidence that you would have even preliminary success in working up a problem this complex using a novel technique?*

**Dr. Kang:** We knew going into this that it would be a difficult problem to approach, given its complexity. Members of our development team, however, have had extensive experience in developing similarly difficult models in the spine. There was never a guarantee that we were going to be successful, but we had confidence in the experience, talent, and work ethic of the team.

**Dr. Leopold:** *How do you respond to analyses like the Washington State Health Care Authority assessment mentioned above, which calls into question not just the efficacy of surgery for FAI, but even our ability to diagnose it in a reproducible way?*

**Dr. Kang:** First, I would invite the critics to see our patients before and after surgery. Second, the success of FAI surgery has proven to be effective across multiple institutions around the world. Finally, FAI is not an isolated pathology. It is associated with conditions like labral tears, chondral lesions, and FAI-induced hip instability. So the ability to diagnose FAI in a reproducible way is certainly important. This challenge has provided us with the impetus to develop our protocol.

**Dr. Leopold:** *You are just starting out, so what challenges have you faced in balancing your desire to develop this program with other demands on*

*your time and energy, and what advice can you offer to residents who, despite those challenges, might want to follow you down this path?*

**Dr. Kang:** This project, similar to all other research studies I've been involved with, depends on having a team of driven and talented individuals. There is no way that any of this work could have progressed to this point without the input of everyone on the team. There is no question that time and energy are scarce commodities during residency. So in addition to having a good team, it is key to set milestones along the way. Also, communicating well with the rest of the team is very important.

**Dr. Leopold:** *What are your next steps in developing your program? How do you see it “going to the next level?” What milestones will you use to gauge your successes, and how long do you expect it will take?*

**Dr. Kang:** We will use our program to analyze the adequacy of resection of patients who had cam decompression procedures. We will then take the program to the next level by using it as a tool to preplan our procedures and analyze its efficacy prospectively. Concurrently, we will work on a software package that can be distributed across other institutions. We estimate meeting these milestones in the next year or two.

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