**An Overview of Femoroacetabular Impingement Syndrome (FAIS)**

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FAIS was popularized in the early 2000’s when Dr. Ganz developed a new arthroscopic surgical approach, however, it was not widely appreciated in research until nearly 10 years later. (Figure 1.) Since then arthroscopic surgery has seen a 25x increase and there has been extensive debate regarding the optimal course of care. The 2016 Warwick agreement defined it as “FAI syndrome is a motion-related clinical disorder of the hip with a triad of symptoms, clinical signs, and imaging findings. It represents symptomatic premature contact between the proximal femur and the acetabulum”3 FAIS is commonly found in 3 variations; the first being CAM (40%), pincer (8%), and mixed (52%) (Figure 2.)7 This becomes an issue as it may lead to acetabular labral tears and early onset of hip OA.

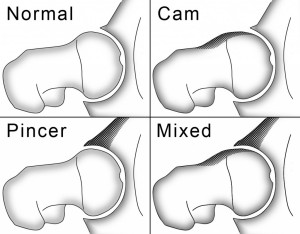
Figure 1.

The Warwick agreement by Griffin3 et al states that a patient must report subjective symptoms, clinical signs, and imaging findings to be diagnosed with FAIS. Subjective complaints are commonly deep anterior groin pain with prolonged activities, intermittent sharp deep groin pain, pain with flexion or rotation tasks, pinching or aching to the hip or groin, stiffness in the hip or groin, and pain with repeated sitting, twisting, or pivoting. Mechanical symptoms such as clicking, popping, or catching are not included as criteria for diagnosis of FAIS.

On physical exam internal rotation and flexion as well as combined internal rotation and flexion are expected to be limited and painful. Demonstration of a Trendelenburg gait, significant hip flexion weakness, decreased hip muscle strength, and pain with deep squat are also helpful for the diagnosis of FAIS. Hip impingement tests such as FADIR attempt to create a symptomatic mechanical abutment and despite having a strong SN and -LR it has a poor SP and +LR, therefore performing better as a screening test and not as a test of diagnostic criteria.

Diagnostic imaging should consist of an x-ray with a Dunn Lateral view to measure Alpha angle associated with CAM morphology and an AP pelvis to measure lateral center edge angle and crossover sign associated with Pincer morphology. The etiology of FAIS isn’t agreed upon. There are many theories, however, most are based upon “excessive” loading of immature bone during adolescence that leads to CAM morphology as morphological changes are relatively static after skeletal maturation.1,8

Figure 2.



Treatment strategies for FAIS have included conservative care, rehabilitation, and surgery. It is agreed upon that each of these may play a different role for each patient but there is very little evidence to compare their effectiveness and no high-level evidence to support a definitive treatment choice. Currently, surgery is the suggested pathway for management of FAIS according to Griffin 2016.

Casartelli 20152 states that 87% of athletes that underwent hip surgery for FAIS did return to sport and 82% of those returned to sport at the same level as before occurrence of symptoms.

Reiman 20189 states that 9 out of 10 athletes returned to sport at 7 ± 2.6 months. However, only 74% of these returned to sport at pre-injury levels. However, 88% of professional athletes, 85% of college athletes, and 80% of adolescent athletes returned to sport at pre-injury levels. This article defined return to sport as either returning to sport or not, therefore, lacking specific criteria detailing how well the athlete is performing or if they are even getting playing time.

Ishoi 20185 published an article with clearly defined return to sport criteria. It was found that 57% did return to sport and only 17% of athletes have a subjective report of returning to optimal performance. This return to sport data is considerably lower than Casartelli 2015 and may reflect the use of a clear and strict return to sport definition.

Mansell 20186 recruited 80 active duty military members that were eligible for surgery. It was found that when comparing hip arthroscopy to 12 physical therapy sessions in a 3 week span there was not a significant difference between the two groups at 2 years. 33% of patients in both groups were medically separated from military service at 2 years.

Lastly, Griffin 20184 compared hip arthroscopy and an individualized, supervised, and progressive physical therapy lead program. Hip arthroscopy and personalized hip therapy both improved hip-related quality of life for patients with FAIS. Hip arthroscopy led to a greater improvement than did personalized hip therapy, and this difference was clinically significant. Limitations include a lack of control group, 47 different physical therapist were trained in the physical therapy lead programs that were designed prior to 2012, and only 23% of patients reported having no progression in their exercises.

There is currently no agreed upon published criteria for return to sport and much of the information regarding FAIS is inconclusive since we as health care providers are in the early stages of treating it. Since this primarily occurs in the active younger population keep in mind that athletes are amazing at creating compensatory movement patterns so their patterns must be examined closely and should correlate to their reports of pain. Finally, morphology does not equal pathology and we should treat the presentation and person, not the image despite the non-binary information the patient may give us.

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