

Hip Preservation Surgery for Femoroacetabular Impingement

Surgeons (and patients) will find this review article on current treatment concepts for femoroacetabular impingement (FAI) of interest. Studies show that the anatomic abnormalities associated with this disorder are more complex than originally thought. Understanding the bony deformity and subsequent changes in how the hip moves is important when planning treatment for this problem.

Impingement refers to some portion of the soft tissue around the hip socket getting pinched or compressed. Femoroacetabular tells us the impingement is occurring where the femur (thigh bone) meets the acetabulum (hip socket). There are several different types of impingement. They differ slightly depending on what gets pinched and where the impingement occurs.

The surgeon must pay attention to the effect of abnormal kinematics (movement) caused by FAI on the surrounding soft tissues of the hip. This is an important step in order to assure good outcomes and patient satisfaction. Repetitive pinching of the labrum (rim of fibrous cartilage around the hip socket) leads to more injuries of the joint and eventual arthritic changes.

The condition affects many athletes who are interested in getting back to a pre-injury level of sports participation. Treatment failure is most common among patients with significant early osteoarthritis, so early intervention is advised.

Many orthopedic conditions can be treated conservatively (without surgery) and that is often the first step with femoroacetabular impingement (FAI). A Physical Therapist helps the patient regain soft-tissue mobility, hip muscle strength, neuromuscular control, and postural balance. Currently, there aren't enough published studies providing evidence that nonoperative management of this condition is effective. That doesn't mean it isn't helpful -- we just need more research in this area to prove it.

Surgical correction does have a good track record. Surgery can be done with an open incision or with the less invasive arthroscopic approach. The surgeon's choice depends on the patient's age, type and severity of impingement, and amount of damage to the hip cartilage. The main objectives of surgery are to relieve pain, improve function (including return to daily and/or sports activities), and prevent hip arthritis.

The authors of this article provide a review of the pathophysiology, etiology, type of lesions, and management options for FAI. MRI images, intraoperative arthroscopic images, and X-rays are included. The surgeons use these visual tools to describe the condition, discuss surgical management, and instruct surgeons in examining all of the mechanical factors affecting patients with FAI.

The focus on dynamic and static mechanical factors in the development of FAI is new. Dynamic factors include the well-known loss of normal structure and joint mechanics that cause the pinching. But other associated dynamic mechanical factors are being highlighted for the surgeon's consideration.

These include the extra-articular (outside the joint) factors associated with impingement. This can include femoral retroversion, femoral varus, trochanteric impingement, and impingement of the anterior inferior iliac spine.

Static factors (the way the hip is formed) cause increased abnormal stress and uneven load between the femoral head and the hip socket during standing activities. These include hip dysplasia, femoral anteversion, and femoral valgus. In many cases, there are combined patterns with both dynamic and static effects contributing to injury patterns with FAI.

The authors summarize their review of concepts related to femoroacetabular impingement (FAI) by reminding surgeons that FAI is probably the most common cause of early cartilage and labral damage in the hip of young athletes complaining of hip pain. The ability of these areas to heal is limited by the lack of blood supply. Surgery (whether by open or arthroscopic technique) can correct the deformity, thus relieving pain and preventing further damage to the hip joint.

With correct treatment early on, up to 90 per cent of athletes affected by FAI can return-to-sports successfully. The important ingredient to successful surgical treatment is careful attention to all aspects of the deformity. This includes recognizing static and dynamic mechanical factors (often present at the same time) and addressing them during the surgical procedure.

Reference: Asheesh Bedi, MD, and Bryan T. Kelly, MD. Current Concepts Review. Femoroacetabular Impingement. In *The Journal of Bone and Joint Surgery*. January 2, 2013. Vol. 94A. No. 1. Pp. 82-92.