DR. PAMELA MORRISON, MS, DPT, BCB-PMD, IMTC

Dr. Morrison has been a physical therapist for 25 years and is the owner of a private practice in Manhattan specializing in the areas of orthopedics and women's and men's pelvic pain. She earned a BA in biology, psychology, and athletic training from the University of Stony Brook, New York in 1991. Dr. Morrison earned a bachelor's degree in physical therapy in 1993 from Downstate Medical Center in NY, as well as an advanced master's degree in manual orthopedic physical therapy from Touro College, New York in 1999. Certified as a specialist in pelvic floor muscle dysfunction biofeedback, she has also completed training in real-time ultrasound imaging for lumbar and pelvic dysfunction. She completed a Doctorate in Physical Therapy at Touro College in 2006 with research completed in common physical therapy evaluative findings in patients with vulvar pain including evaluation and treatment algorithms.

Dr. Morrison completed a Certification in Integrative Manual Therapy at the Connecticut School for Integrative Manual Therapy in 2006. She has attended more than 200 continuing education courses in women's and men's health, pelvic and low back pain, joint manipulation, visceral/urogenital manipulation, craniosacral therapy, vulvar diseases, nutrition, and advanced manual therapies. Dr. Morrison has lectured internationally on the topics of vulvodynia, interstitial cystitis, treatment of pelvic pain, biofeedback, and pelvic floor muscle dysfunction. She was a primary instructor on Pelvic Pain for the Section on Women's Health, American Physical Therapy Association. She has presented research on physical therapy for clitoral pain, vulvar pain, breech position, men's pelvic pain, and infertility at national conferences. She has held the office of Vice President of the National Vulvodynia Association since 2015. Dr. Morrison is a current associate editor for the Journal of Sexual Medicine Reviews and is a reviewer for research publications in the Journal of Sexual Medicine.

THE RELATIONSHIP BETWEEN HIP IMPINGEMENT AND PELVIC FLOOR MUSCLE OVERACTIVITY

Femoroacetabular Impingement (FAI), also known as Hip Impingement, occurs when there is abnormal contact between the femoral head and acetabulum during motion. Normal arthrokinematics of the femoral head and acetabulum usually become impaired. The types of FAI include pincer and cam or combined. (Image 1) In pincer-type impingment the acetabulum angles back or the acetabulum may have a deeper recess. This may occur because of excess protruding bone present on the acetabulum which creates an extra boney lip. In the cam-type the head of the femur is misshapen or an overgrowth of bone can form at the top or front of the femoral head. Other causes of irregular contact between the proximal femur and acetabulum include muscles imbalances such as a tight psoas muscle and hip extensor weakness or tight deep hip rotators causing an anterior displacement of the femoral head, prior trauma such as femoral neck fractures, or resulting from childhood diseases such as Legg-Calve-Perthes Disease. Consequently, these disorders would need to be ruled out. The common symptoms of FAI include medial groin pain, deep hip pain, inner thigh pain, buttock pain, pain along the tensor fascia latae/iliotibial band complex, clicking, locking, popping, and sharp hip pains. Pain may be provoked upon running, pivoting, lunging or turning towards the affected side. Pain can also be noted upon standing from a prolonged sitting position.

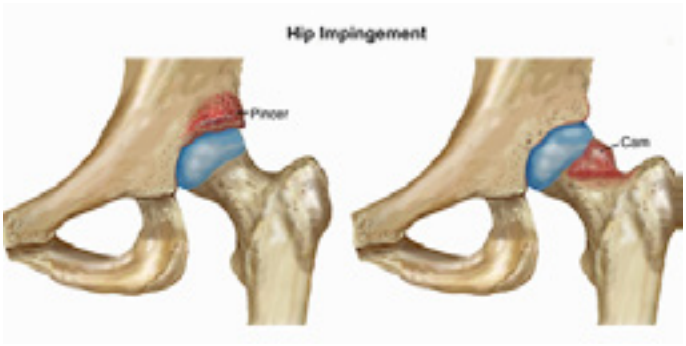

Image 1 With permission. © 2017 American Physical Therapy Association (www.moveforwardpt.com). All rights reserved.

An orthopedic special test for FAI performed by practitioners involves combined movements of hip flexion, adduction, and internal rotation (FADIR) with overpressure. (Image 2) If FAI is present this position causes a worsening or reproduction of the pain. The range of motion in these movements may be limited and a boney end feel may be noted by the clinician. Also, when

Image 2 Performing FADIR test.

resisted hip flexion is tested symptoms may increase. Another common pattern found is a decrease in hip internal rotation range of motion. This occurs because when the hip flexes the femoral head would abut on the acetabular rim causing the symptoms of impingement. Repeated insult in this manner and microtrauma can progress into acetabular labrum injury such as labral tears and avulsion or shearing of the cartilage. FAI can cause further degeneration of the joint and potentially lead to early onset osteoarthritis and functional limitations of the hip joint. Decreased flexibility, myofascial trigger points, or imbalances of the iliopsoas, quadriceps, tensor fascia latae, deep hip rotators and pelvic floor muscles (PFM) are usually concurrent issues. The deep hip rotators which include the piriformis, inferior and superior gemelli, obturator internus and externus, and quadratus femoris muscles act as stabilizers for the hip during motion. One role of the PFM is to help create an anchor for the deep stabilizers of the hip. The medial portion of the levator ani is the pubococcygeus muscle that arises from the posterior body of the pubis and anterior portion of the arcus tendineus. The arcus tendineus of the levator ani is a dense connective tissue that runs along the pubic ramus to the ischial spine and along the surface of the obturator internus muscle. This anchoring facilitates optimizing the power of the large hip musculature to control both stability and power especially for descent and ascent in squat maneuvers and stair climbing. FAI and the muscle imbalances around the joint can alter hip and pelvic biomechanics during gait. A compensatory increased posterior pelvic rotation during active end range hip flexion occurs causing a repeated tensioning of the PFM. As the pelvic innominate rotates posteriorly there is an anterior tensioning of the PFM. Repeatedly this pulling causes constant tension on the PFM leading to overactivity formerly known as hypertonicity and/or high-tone pelvic floor. Also, because there is shared connective tissue between the obturator internus and the PFM hip disorders frequently cause shortening or tensioning of the obturators which can create tensioning in the PFM by way of attachment and line of pull. PFM may also compensate for lack of hip joint stability and continually activate during activity as a means of providing more pelvic-hip stability for functional movements. In overactive pelvic floor muscles (OAPF) the muscles are hyperactive and tightness, tension, myofascial trigger points, tender points, and pain result. This also results in an underlying PFM weakness due to decreased excursion and impaired full contractile ability or change in length tension relationship. Lumbo-pelvic-hip and lower extremity motor control can become impaired. In addition, respiration can be impacted. Overtime this can contribute to vulvar pain, testicular or scrotal pain, sexual pain, bladder urgency or frequency symptoms, constipation, and pudendal nerve compromise. Pudendal nerve compromise can occur because the fascia of the obturator internus creates the tunnel called Alcock's canal whereby the pudendal nerve, artery, and vein pass through to access the anterior pelvic structures.

There is a close relationship between hip function and PFM function seen in patients with hip dysfunction, such as labral tears, who commonly present with co-morbid pelvic girdle pain and low back pain. Interestingly, research has shown that many patients with chronic pelvic pain who had labral tears and received fluoroscopy-guided anesthetic injections into the obturator externus muscle, a deep hip rotator, found improvement in their pelvic pain. Non-surgical treatment of FAI includes analgesics, intra-articular glucocorticosteroid injections, activity modification such as rest, and physical therapy (Image 3). Surgical approaches include arthroscopic or open surgical dissection to debride, repair labrum and chondral surfaces, and address any boney deformities. Regardless of whether the patient undergoes non-surgical or surgical intervention, the PFM should be assessed and treated as part of the hip rehabilitation process because normalizing pelvic floor activation should be considered to be an integral part of restoring hip and pelvic arthrokinematics and function.

Image 3 Performing hip distraction with a mobilization belt will help reduce hip pain and also potentially help reduce tension in the PFM.

References

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