

Hoffa's Fat Pad Impingement and Medial Plica Syndrome

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ABSTRACT

CASE HISTORY: The patient is a 27-year-old female that presented with ongoing right knee pain. She stated that she has been dealing with knee pain for approximately five years. Pain is constant with activities of daily living and running, aching during rest and throbbing during activity. She recalled that the initial pain started after running a half marathon. Pain was relieved with rest and elevation and progressively decreased with physical therapy until reaggravating it with no specific cause. Anti-inflammatory creams and medication had minimal effect on pain reduction. **PHYSICAL EXAM:** Significant tenderness to palpation along the proximal patellar tendon, the fat pad on either side of the tendon, medial patellar facets, and increased pain from passive dorsiflexion of the ankle. Positive J-sign was greater on the right side than left, positive patellar grind test on the right, and crepitus exist bilaterally. Positive provocative tests also showed patellar malalignment, poor neuromuscular control, decreased right hamstring flexibility compared to the left, and decreased function based on the Lower Extremity Functional Scale. Patient also had pain with valgus stress test and McMurray tests, and there was significant hypertonicity along the IT band. She demonstrated good skin turgor; right knee focused exam revealed full knee range of motion with increased pain during passive knee flexion along the Hoffa's fat pad area. **DIFFERENTIAL DIAGNOSES:** Chronic pain of right knee, Hoffa's fat pad impingement, patellar tendinitis, occult meniscal tear, Hoffa's fat pad disease, patellar tendinopathy, and medial plica syndrome. **TESTS & RESULTS:** Positive patellar compression for pain, positive Ober's for tightness, positive Thessaly, and McMurray's for pain along the medial knee, negative valgus and varus stress test. MRI showed some slight medial trochlear dysplasia as well as lateral patella tilt. Right knee limited ultrasound demonstrated normal fibrillar architecture and thickness of the patellar tendon without any focal hypoechoic areas. No infrapatellar bursitis was noted, and lower extremity strength was 5 out of 5 bilaterally. **FINAL DIAGNOSIS:** Hoffa's fat pad impingement and medial plica syndrome. **DISCUSSION:** Hoffa's fat pad impingement and medial plica syndrome are two conditions that impact the knee joint causing anterior knee pain. Hoffa's fat pad impingement involves compression of the infrapatellar fat pad, while medial plica syndrome is characterized by inflammation of the medial plica. Impingement of the infrapatellar fat pad can cause irritation and inflammation of the nearby medial plica, leading to the development of medial plica syndrome. This can result in anterior knee pain, swelling, and difficulty with knee movements. Factors such as repetitive knee movements, knee instability, and knee misalignment can contribute to the development of these conditions. Common treatments involve physical therapy, medication, and injections. The reported prevalence of plica is approximately 90% amongst knee pain cases, whereas medial plica prevalence is 84%. **OUTCOME OF THE CASE:** Physical therapy focused on IT band, dry needling, sports taping, gait training, and vastus medialis oblique strengthening. Further treatment included patellar tendon scraping due to its relatively short recovery time, therefore, enabling the patient to resume running soon after the procedure. **RETURN TO ACTIVITY AND FURTHER FOLLOW-UP:** Patient was advised to hold off from running for one week and to continue working on low impact cardiovascular activity. Patient is currently doing well and returned to pre-injury running activities.