Patellofemoral Pain Syndrome (PFPS)

Patellofemoral Pain Syndrome, or PFPS, is an overuse injury of the knee, commonly seen in young athletic women. Pain in this syndrome is primarily poorly localized anterior knee pain, that worsens with squatting, running, prolonged sitting, and climbing stairs. Although PFPS is a clinical diagnosis, the diagnosis can be supported by the patellofemoral compression test and the apprehension sign. Treatment is usually conservative with the use of physical therapy, weight loss, NSAIDs, and support braces.

PLAY PICMONIC

Pathophysiology

Young Female Athletes

Young Female Athlete

This condition more often affects women than men in a 2:1 ratio. Age range is adolescents to young adults, due to the increased activity level of most people during this period of life.

Runners

Running

PFPS can occur in any type of athlete, but runners are noted to be at increased risk due to the repetitive stress associated with the activity.

Overuse Injury

Overtime Injury

The more frequently an individual stresses their joints the more likely they are to injure themselves and develop PFPS.

Idiopathic Patellar & Retinacular Pain

Idiot-hat with Potato and Red-tendon Pain-bolt

The patella, more commonly known as the kneecap, is a small circular bone that is embedded within the quadriceps and patellar tendon and serves to protect the anterior knee joint. The retinaculum refers to the branches of the tendons that cross under and on either side of the patella. Pain and tenderness at these sites can be indicative of patellofemoral pain syndrome.

Signs & Symptoms

Chronic Anterior Knee Pain

Crone with Ant-eater showing Knee Pain-bolts

PFPS is one of the top causes of chronic anterior knee pain. Although the pain can be subacute or chronic, therefore a careful history should be taken to understand the timeline of initial injury to the eventual development of symptoms.

Increased with Squatting or Running

Up-arrow Pain-bolts with Squatting and Running

Activities that overload or stress the knee joint repeatedly, such as squatting or running, will cause increased pain.

Increased with Prolonged Sitting or Climbing Stairs

Up-arrow Pain-bolts with Prolonged Sitting and Stairs

Activities that limit mobility or overextend the knee joint, such as prolonged sitting or climbing stairs, will cause increased pain.

Diagnosis

Patellofemoral Compression Test

Potato-femur Compression

This test is performed while the leg is fully extended by compressing the patella into the trochlear groove (located on the distal anterior side of the femur) and having the patient tighten the quadriceps muscle against patellar resistance, while assessing for pain or tenderness.

Apprehension Sign

Apprehensive

This test is performed by putting the knee in 30 degrees flexion and applying pressure on the patella medially to push it laterally and assessing for patient apprehension and desire to straighten the knee to avoid pain and tenderness caused by the test.

Treatment

NSAIDs

N-sad

Non-steroidal anti-inflammatory drugs, or NSAIDs, work by reversibly inhibiting the COX enzymes to decrease localized inflammation. Although they are not known to accelerate healing, they may provide pain relief.

Conservative Therapy

Conservative-Reagan

Musculoskeletal conservative therapy generally refers to any therapy that avoids surgery. It consists of lifestyle modifications like weight loss and refraining from strenuous activity, physical therapy including exercises to strengthen the quadriceps and hips, NSAIDs, support braces and knee sleeves.

Bracing

Knee Brace

Braces are designed to limit range of motion in an effort to avoid repeating the same mechanism of injury. They also provide external support for weakened internal ligaments and tendons. One specific type of bracing for patellofemoral pain syndrome is called patellar taping.