

QUADRICEPS TENDON TEAR

DESCRIPTION

Partial or complete rupture of the Quadriceps Tendon. This structure is the tendon attachment of the quadriceps (thigh) muscles to the kneecap (patella). The quadriceps muscles become a tendon above the kneecap (patella) and the tendon attaches into the patella, this is the quadriceps tendon. Then another tendon goes from the patella to the tibial tubercle (the bump on the upper part of the lower leg), this is the patellar tendon. There is loss of continuity between the quadriceps muscles and the patella and thus, loss of function of the quadriceps muscles. The function of the quadriceps muscles is to forcefully straighten the knee or slow the knee during bending or squatting. There is pressure on the quadriceps tendon with muscle contraction and with the knee bent.

FREQUENT SIGNS AND SYMPTOMS

- A “pop” or rip is often felt at the knee or above the kneecap (patella) at the time of injury
- Pain, tenderness, swelling, warmth and/or redness over and around the quadriceps tendon and knee joint
- Pain trying to forcefully straighten the knee or having the knee bent
- Pain and weakness or inability to straighten the knee when seated
- Crepitation (a crackling sound) when the tendon is moved or touched
- Bruising at the lower thigh and knee after 48 hours
- Loss of firm fullness when pushing on the area where the tendon ruptured (a defect between the ends of the tendon where they separated from each other).

CAUSES

- Sudden episode of stressful over-activity, such as with jumping, hurdling, or starting a sprint.
- Direct blow or injury to the knee.

RISK INCREASES WITH

- Sports that require sudden, explosive muscle contraction, such as those involving jumping and quick starts. Also with running or contact sports.
- Poor physical conditioning (strength/flexibility)
- Previous quadriceps tendon injury
- Untreated quadriceps tendinitis
- Cortisone injection into the quadriceps tendon

PREVENTIVE MEASURES

- Appropriate warm up and stretching before practice or competition
- Give time for adequate rest and recovery between practices and competition
- Appropriate conditioning including knee and thigh flexibility, quadriceps strength and endurance, as well as cardiovascular fitness
- Taping, protective strapping, or an adhesive bandage may be recommended before practice or competition

EXPECTED OUTCOME

Curable with appropriate treatment. Though return to sports may occur after 6 to 9 months, it may be at a reduced level.

POSSIBLE COMPLICATIONS

- Weakness of the quadriceps muscles, especially if untreated.
- Re-rupture of the tendon after treatment
- Prolonged disability
- Risks of surgery, including infection, injury to nerves (numbness, weakness or paralysis), bleeding, knee stiffness, knee weakness, pain sitting for long periods of time, pain getting up from a seated position, kneeling or squatting, pain going up or down stairs or hills, knee giving way or buckling.

GENERAL TREATMENT CONSIDERATIONS

Initial treatment consists of not walking on the affected leg, icing the area, applying a compressive elastic bandage, and elevating the injured leg to eye level. Small or partial quadriceps tendon injuries may be treated with stretching, strengthening, refraining from sports and often requires physical therapy. A use of a brace, cast and/or crutches may also be necessary. Quadriceps muscle contraction prevents the tendon ends of complete tears from healing to each other without surgery. Thus, there is no role for non-surgical treatment for complete tears. Surgical treatment involves sewing the ends of the tendon together or to the patella, followed by immobilization in a long leg cast or brace for varying periods of time. After surgery and immobilization, physical therapy is usually needed to regain knee motion and strength.

MEDICATION

- Non-steroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take if surgery planned in 7 days or less), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed by your physician. Contact him/her immediately if any bleeding, stomach upset or an allergic reaction occurs.
- Pain relievers may be prescribed as necessary by your physician. Use only as directed and only as much as you need.

COLD THERAPY:

Cold is used to relieve pain and reduce inflammation. Cold should be applied for 10-15 minutes every 2-3 hours for inflammation and pain. Use ice packs or ice massage.

NOTIFY OUR OFFICE IF

- Pain increases, despite treatment
- Cast discomfort develops (see cast care)
- Any of the following occur after surgery: signs of infection including fever, increased pain, swelling, redness, drainage or bleeding in the surgical area.
- New, unexplained symptoms develop. Drugs used in treatment may produce side-effects.