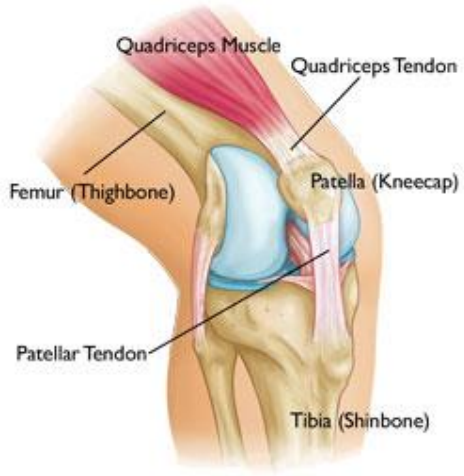
Patellar Tendon Tear/Disruption

Patellar tendon tear or disruption is a complete rupture of the patellar tendon. This structure is the tendon attachment of the quadriceps (thigh) muscles to the leg. The quadriceps muscles becomes a tendon above the kneecap (patella), and the tendon attaches into the patella; then another tendon goes from the patella to the tibial tubercle (the bump on the upper part of the lower leg). There is loss of continuity between the quadriceps muscles and the leg bone and thus loss of function of the quadriceps muscles when trying to straighten the knee. 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 patellar tendon with quadriceps contraction and with the knee bent.



Frequent Signs and Symptoms

- A pop or rip felt at the knee or under the kneecap (patella) at the time of injury
- Pain, tenderness, swelling, warmth, or redness over and around the patellar tendon
- Pain when trying to forcefully straighten the knee or bend the knee
- Inability to straighten the knee when seated
- Crepitation (a crackling sound) when the tendon is moved or touched
- Bruising at the patellar tendon 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)

Etiology (Causes)

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

Risk Factors

- 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 and flexibility)
- Previous patellar tendon injury
- Untreated patellar tendinitis
- Cortisone injection into the patellar tendon

Prevention

- Appropriately warm up and stretch before practice or competition.
- Allow time for adequate rest and recovery between practices and competition.
- Maintain appropriate conditioning:
  - Cardiovascular fitness
  - Knee and thigh strength
  - Flexibility and endurance
- Taping, protective strapping, or an adhesive bandage may be recommended before practice or competition.

Outcomes

This condition is usually curable with appropriate treatment. Sports may usually be resumed after six to nine months.

Potential 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 when sitting for long periods, pain when getting up from a seated position and when kneeling or squatting, pain going up or down stairs or hills, and knee giving way or buckling

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. Definitive treatment requires surgery to repair the tendon. Quadriceps muscle contraction prevents the tendon ends from healing to each other without surgery. Thus there is no role for nonsurgical treatment. Surgical treatment usually involves sewing the ends of the tendon back together, followed by immobilization in a long leg cast or brace for varying periods. After surgery and immobilization, physical therapy is usually needed to regain knee motion and strength.

Possible Medications

- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take within seven days before surgery), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed by your physician. Contact your physician immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.
- Pain relievers may be prescribed as necessary by your physician. Use only as directed and only as much as you need.

Modalities (Cold Therapy)

Cold is used to relieve pain and reduce inflammation. Cold should be applied for 10 to 15 minutes every two to three hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage with a cloth between the ice and your skin to prevent burning /freezing your skin.

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