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Case Report

A case study on ACL tear

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ABSTRACT

The anterior cruciate ligament (ACL) injury occurs when the foot is firmly planted and leg sustains direct force, either forward or backward. If the force is forward, the ACL suffers the impact from the force, it is most commonly injured ligament in the knee, commonly occurring in football, soccer and basketball players. Treatment consist of the "RICE" therapy, which includes Rest, Ice, Compression of the affected knee and Elevation of the affected lower extremity.

1. Introduction

The word "anterior" means towards the front of the body. Cruciate means "cross shaped". An ACL tear is damage to the anterior cruciate ligament (ACL). Located at the center of our knee. The tear may be partial (the ligament is torn a little) or complete (the ligament is torn into two pieces) or Avulsion (tearing away of the ligament). ACL injuries are usually non contact injuries that occurs when:

1. The athlete pivots
2. Lands from a jump
3. Slows down while running
4. Over extending knee joints

An ACL tear can be suggested by a Lachman's test. In this examination the affected knee is flexed 15 – 300 and the tibia is pulled forward while the femur is stabilized. The test is considered positive if forward motion of the tibia occurs with the feeling of a soft or indistinct endpoint.[1,2]

The lachman test is the most sensitive and specific test for diagnosing acute ACL injuries.

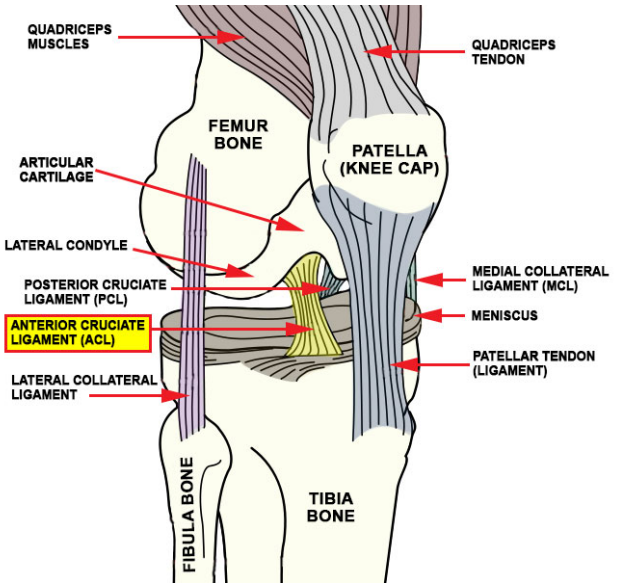

Fig. 1: Figure showing supporting ligaments

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1.1. Etiology

1. ACL injuries often happened during sports and fitness activities that can put stress on the knee.
2. As a result of cutting or pivoting maneuvers.
3. When a person lands on one leg.
4. When the knee is being hit directly.
5. During a sudden slowing or stopping from running.
6. Through repeated stress to the knee.
7. When the knee is bent backwards.

1.2. Risk factors

1. *Age:* ACL tear are most common between age of 15-45, mostly due to the more active lifestyle and higher participation in sports.
2. *Gender:* The rate of ACL injuries is three times higher in female atheletes than in males. While the exact reason is unknown, some reasons include difference in muscle conditioning.
3. *Participation in certain sports:* ACL tear commonly occurs in sports such as Volleyball, Soccer, Football. These sports require frequent and sudden deceleration, such as cutting, pivoting or landing.
4. *Previously torn ACL:* The risk of retearing a previously repaired ACL is approximately 15% higher than the risk of tearing a normal ACL.

1.3. Clinical features

1. Swelling in the knee
2. Redness of the skin surrounding the knee
3. Reduced ROM due to tear of ligament
4. Pain while walking
5. Fever
6. Popping sound

1.4. Diagnostic criteria

1. History of injury and physical examination
2. X-ray of knee
3. Magnetic resonance Imaging–rule out edema, ligament sprain, bulking of tendon
4. Blood investigation

1.5. Medical management (pharmacological management)

1. Vitamin C
2. Methylcobalmin
3. Aspirin
4. Chymoral forte
5. Omnatax

Non - Pharmacological management

1. Braces
2. Walker
3. Comfort device
4. Ice packs
5. Physiotherapy
6. Surgical management
7. ACL reconstruction

2. Nursing Management: A Case Study

A case study of a 29 years old male with Anterior Crucial Ligament Tear is discussed with consent from her elder sister. Mr kumar, 29 years old male admitted in orthopedic ward 151 Base Hospital on 22/07/2022 with the complain of pain (lt) knee, instability (lt) knee and popping sound while walking since 7 months the patient present history of illness is 29 years serving soldier had been admitted to 414Fd hospital on dec 2021after he got injured while playing volleyball. Client do not have any significant past medical and surgical history of illness On arrival vital signs were stable. *On physical examination* left patellar tendon found to be bulkey. Also patellar flexion and Achilles tendon reflexes were absent.[3,4] *Blood Investigation* suggest high DLC(%) count -72,high sodium (mEq/L)-148, High Triglycerides (mEq/L)-238 & low serum bilirubin (mg/dl)-0.7, low LDL-66. MRI reports suggest moderate knee joint and supra patellar bursal effusion, complete thickness tear of ACL at femoral attached with bulking and edema of residual ligament, mild bulking of posterior cruiciate ligament, bucket handle tear involving anterior posterior horn of lateral meniscus, grade –I medical collateral ligament sprain, bulking of patellar tendon, mild periarticular soft tissue edema. X-RAY taken after 2^{nd} day of surgery and it suggest evidence of ACL recontruction and normal alignment of tunnels. Lachman Test positive and found to be grade-3[5]

2.1. Nursing diagnosis

Chronic pain related to the severe knee injury during sports as evidence by clients verbalization and pain scale score - 7/10.

2.1.1. Expected outcome-client will experience less pain/no pain

2.1.1.1. Intervention .

1. Pain level, intensity, duration was assesed.
2. Comfort devices were given.
3. Positioning was provide with support.
4. Medication Acetaminophen 350 mg & Aspirin 500 mg TID given.

2.1.2. Evaluation- The patient reported reduced level of pain to certain extent

2.1.2.1. Nursing diagnosis. Activity intolerance related to pain and weakness as evidence by limited motor function and verbalization.

Expected outcome-Patient will have optimum level of support to carry out his daily chores with less assistance

2.1.2.2. Intervention.

1. Assess the level of discomfort.
2. Walker was given as assistive device to the patient.
3. Client was taught to sleep in semi fowler's position.
4. Client was encouraged to carry out his daily activity along with treatment with assistance.
5. Passive range of motion exercise was taught to the patient.
6. Motivational and encouraging talks were given to the patient.

2.1.3. Evaluation-client performs his daily chores slowly with some assistance

2.2. Nursing diagnosis

Fear and anxiety related to the healing process and hospital stay as evidence by frequent questioning.

2.2.1. Expected outcome-patient will report less fear and anxiety

2.2.1.1. Intervention.

1. Clients knowledge was assessed about the disease.
2. Necessary information and querries were discussed.
3. Meditation and deep breathing excecises was taught.

2.2.2. Evaluation-client was less anxious

2.3. Nursing diagnosis

Risk for impaired skin integrity related to pressure and function from immobility as evidence by excessive pain, swelling and redness.

2.4. Expected outcome –patient will report decrease level of pain an swelling

2.4.1. Intervention

1. Clients position was assessed
2. Comfortable position was being provided to the patient
3. Comfort devices were given as per the requirements

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None.

5. Conflicts of Interest

None.

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