

# Knee Trauma and Ganglion Cysts on the Anterior Cruciate Ligament: A Study of 50 Patients

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## Abstract:

Ganglion cysts associated with the anterior cruciate ligament (ACL) are infrequently reported but may occur following knee trauma. This study examines the prevalence, clinical presentation, imaging characteristics, and management of ganglion cysts on the ACL in 50 patients with a history of knee trauma. The findings suggest a significant correlation between knee injuries and the development of ACL ganglion cysts, highlighting the importance of thorough evaluation and appropriate management strategies.

*Keywords* — anterior cruciate ligament, ganglion cyst, knee trauma, MRI, arthroscopy.

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## 1. INTRODUCTION

Ganglion cysts are benign, fluid-filled sacs that can develop in various locations within the body, including around joints and tendons. While common in the wrist, they can also occur in the knee, particularly involving the ACL. The relationship between knee trauma and the formation of ganglion cysts on the ACL has not been extensively studied. Understanding this association is crucial for orthopaedic surgeons in diagnosing and managing knee injuries effectively.

This study aims to assess the prevalence and characteristics of ganglion cysts on the ACL in patients presenting with knee trauma, evaluating clinical symptoms, imaging findings, treatment options, and patient outcomes.

## 2. METHODS

A descriptive observational study was conducted over one year at a tertiary orthopaedics centre, city clinic hospital, Osh since 2023 sept to 2024 sept. A total of 50 patients with a documented history of knee trauma and diagnosed ganglion cysts on the ACL via MRI were included. Inclusion criteria consisted of:

1. Age between 18 and 60 years.
2. History of knee trauma.
3. Confirmed diagnosis of ACL ganglion cyst via MRI.

Data collected included demographics, mechanism of injury, clinical symptoms, imaging findings, management approaches, and postoperative outcomes.

### Results

**1. Demographics and Mechanism of Injury:**  
Of the 50 patients, 35 (70%) were male, and 15 (30%) were female, with a mean age of 30 years (range 18–55).

The primary mechanism of injury included sports-related incidents (58%), falls (26%), and motor vehicle accidents (16%).

## 3. CLINICAL PRESENTATION:

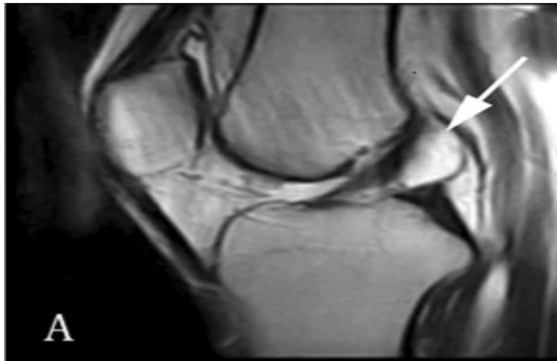
42% of patients reported knee pain as the primary symptom.

30% experienced mechanical symptoms such as locking or clicking.

28% were asymptomatic and discovered incidentally during imaging for other knee issues.

## 4. IMAGING FINDINGS:

All patients underwent MRI, which confirmed the presence of ganglion cysts on the ACL. Cyst sizes ranged from 0.5 cm to 4.0 cm. The majority of cysts (64%) were located at the tibial attachment of the ACL.



### **5. MANAGEMENT:**

48% of patients underwent arthroscopic excision of the cyst.

The remaining 52% were treated conservatively with physical therapy and observation.

Among the surgically treated group, 85% reported significant improvement in symptoms within three months, while 70% of those managed conservatively experienced symptom relief over six months.

### **6. OUTCOMES:**

Postoperative complications were minimal, with a 5% recurrence rate of the cysts.

Overall, patient satisfaction was high, with 90% of patients expressing satisfaction with their treatment outcomes.

### **7. DISCUSSION**

The findings of this study highlight a notable prevalence of ganglion cysts on the ACL in patients with knee trauma. The association may be attributed to changes in synovial fluid dynamics following trauma, leading to the formation of these cysts. Patients with knee pain and mechanical symptoms should be evaluated for potential ganglion cysts, particularly if they have a history of knee injuries.

MRI remains the most effective diagnostic tool, providing detailed information about the cyst's size and location. Treatment options vary based on symptom severity, with surgical intervention yielding favourable outcomes for symptomatic

patients. Conservative management is effective for asymptomatic cases, underscoring the importance of individualized treatment plans.

### **8. CONCLUSION**

Ganglion cysts of the ACL are a rare but relevant consideration in patients with knee trauma. This study underscores the need for careful evaluation of knee injuries, as timely diagnosis and appropriate management can lead to improved patient outcomes. Further research is warranted to explore the underlying mechanisms contributing to cyst formation in this population.

### **ACKNOWLEDGMENT**

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