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# **Early Complications Following Open Parameniscal and Popliteal Cyst Excision of the Knee**

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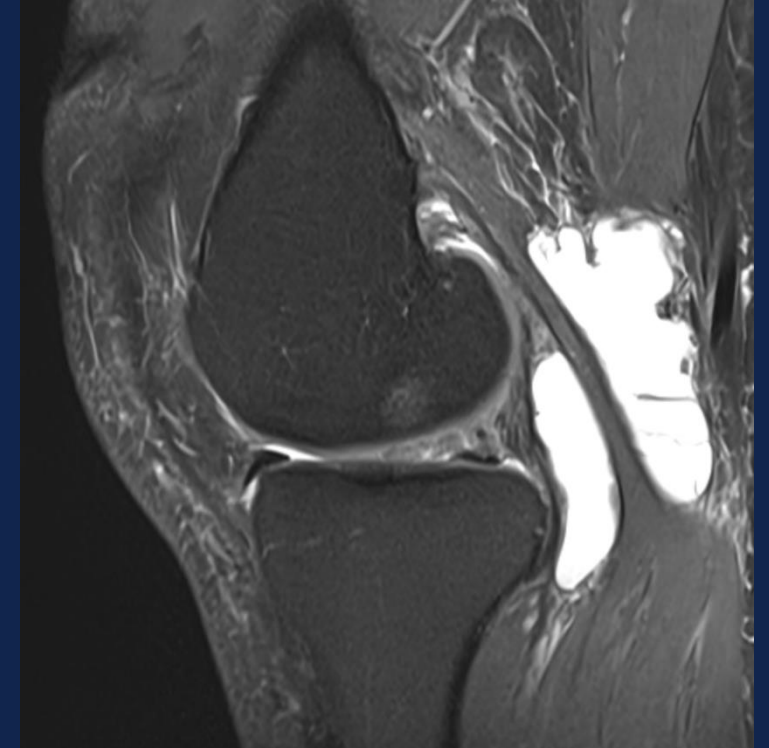
**Study performed at University of California Irvine**

# Disclosures

- Research Support: Immunis, Vericel
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- Stock: Cartilage Inc, Overture Resurfacing
- Committee Member: AOSSM, AAOS, ICRS, WOA

# Introduction

- Large, symptomatic parameniscal and popliteal cysts that fail conservative management are often treated with surgical excision.
- The rates of postoperative complications following open parameniscal and popliteal cyst excision has not been well described.
- Purpose of this study: To characterize the 90-day postoperative complications following open parameniscal and popliteal cyst excision using a large global multicenter database (TriNet X).



# Methods

**A retrospective cohort study was performed using the TriNetX (Cambridge, MA), a global research network that includes research data from more than 70 healthcare organizations across 4 countries.**

- **Patients who underwent parameniscal or popliteal cyst excision within the last 20 years (2004 to 2024) were identified using CPT codes 27347 and 27345.**
  - The incidence of 90-day postoperative complications, including infection, deep vein thrombosis (DVT), nerve injury, and need for reoperation, was queried.
- **Data on concomitant knee arthroscopy and associated procedures was also collected.**

# Results

Out of 2,612 patients, 44.9% underwent parameniscal cyst excision and 55.1% underwent popliteal cyst excision.

Table 1. Postoperative Complications

Complication	Number of Patients	Percentage (%)
Infection	58	2.2
Deep Vein Thrombosis (DVT)	43	1.6
Nerve Injury	≤10	≤ 0.4
Reoperation (within 90 days)	37	1.4

Table 2. Most Performed Concomitant Arthroscopic Procedures Performed During Cyst Excision

Arthroscopic Procedure	Number of Patients	Percentage of Total Patients (%)
Meniscectomy	846	34
Meniscus Repair	141	6
Debridement/ shaving of Articular Cartilage	133	5
Synovectomy	170	7
Abrasion Arthroplasty	59	2
<b>Total Concomitant Knee Arthroscopy Procedures</b>	<b>1,271</b>	<b>51</b>

# Discussion: Key Findings

**Overall complication rate was low, but higher than for isolated knee arthroscopy**

- **Infection rate: 2.2% (vs. 0.1–0.3% for isolated arthroscopy<sup>1</sup>)**
  - Possibly due to more extensive soft tissue dissection through larger incision for cyst excision
- **DVT incidence: 1.6% (vs. 0.25–0.3% in isolated arthroscopy<sup>2,3</sup>)**
  - Suggests elevated thromboembolic risk
  - Highlights need for careful perioperative assessment and to consider DVT prophylaxis
- **Nerve injury: <0.4% – low incidence reflects favorable safety with careful dissection technique**

# Discussion: Procedural Complexity and Clinical Implications

- **51% of patients had concomitant arthroscopic procedures**
  - Most common: **Meniscectomy** (34%)
  - Indicates frequent coexisting intra-articular pathology
- **Limitations of the study: Retrospective design, varied postoperative protocols, reliance on EHR data and accuracy of inputted data, database did not capture complications after 90 days post-op**
- **Clinical takeaway: Open parameniscal and popliteal cyst excision is safe but comes with possibly a slightly higher infection and DVT rate compared to isolated arthroscopy**

# Conclusions

- Open parameniscal and popliteal cyst excision has low overall complication rate, but higher-than-expected rates of:
  - Infection
  - Deep vein thrombosis (DVT)
- Future research needed:
  - Long-term outcomes
  - Open vs. arthroscopic comparisons
  - Cyst recurrence rates
  - Prospective study designs to improve evidence quality



# Thank You



# References

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