

# Severe Infection After Temporary Genicular Nerve PNS for Knee Pain: Case Report and Need for Standardized Prophylactic Protocols

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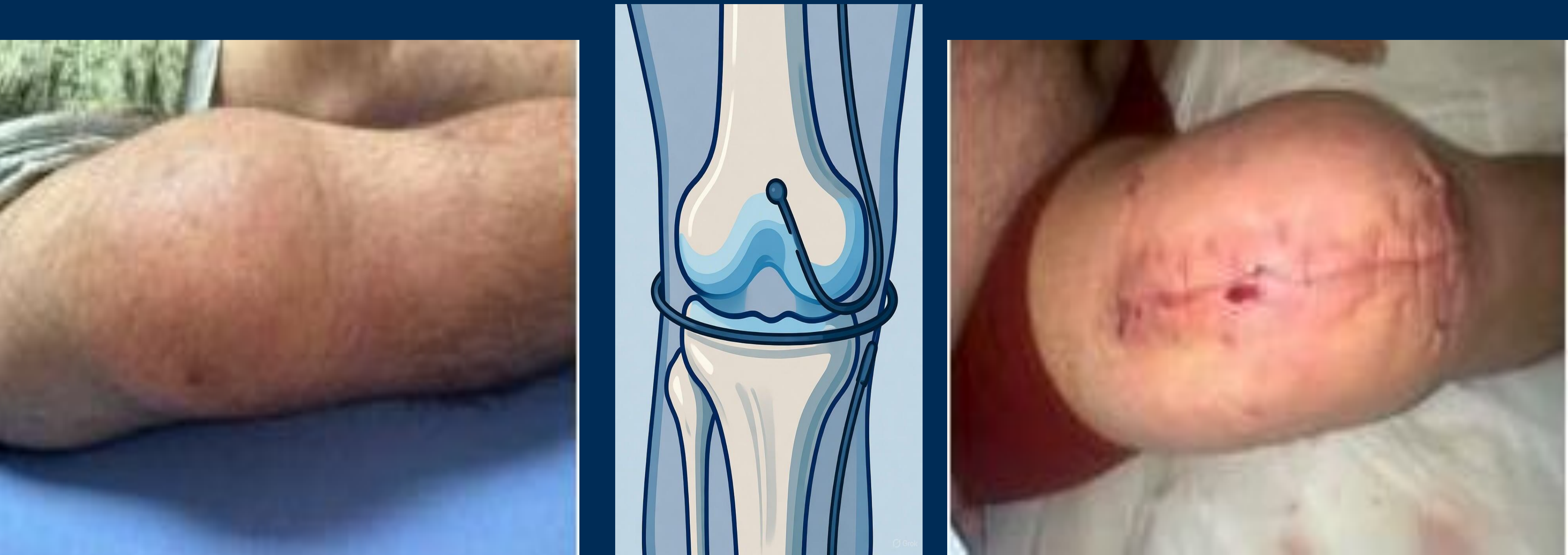
## Introduction

- ❖ Chronic pain is a widespread public health issue, with chronic knee pain being a common cause of functional impairment and increased healthcare use (1).
- ❖ Due to the limitations and risks of traditional treatments, interest in minimally invasive options like Peripheral Nerve Stimulation (PNS) is growing.
- ❖ PNS offers a favorable safety profile and rapid recovery (2), but complications can occur. We present a case of severe infection following ex-plantation of a temporary genicular nerve PNS system.

## Methods

As the case report is devoid of patient identifiable information, it is exempt from IRB review requirements as per UMKC IRB policy. Verbal informed consent obtained from patient to present this case and is documented in the chart.

## Knee-dling Caution: A Case of Severe Infection Post-Genicular Nerve Stimulation



49-year-old male with a history of COPD, prediabetes, OSA, bipolar disorder, obesity, and tobacco use presented with bilateral knee pain. He was deemed ineligible for Total Knee Arthroplasty (TKA) due to tobacco use and was referred to the pain clinic. After limited relief from intra-articular corticosteroid and hyaluronic acid injections, he underwent a successful genicular nerve block of right knee per patient preference, followed by a 60-day temporary percutaneous coiled PNS placement targeting the superolateral and superomedial genicular nerves, resulting in 65% pain reduction. The device was removed under sterile conditions, and he was discharged home. Shortly after, he developed joint redness and pain, diagnosed with cellulitis in the ED, and started on oral Doxycycline course. He returned to the ED with worsening symptoms and was diagnosed with septic arthritis with *Enterobacter cloacae* identified via BioFire panel on synovial fluid analysis. He underwent irrigation and debridement (I&D), synovectomy, and wound VAC placement. Despite a course of IV cefepime and vancomycin followed by six weeks of oral levofloxacin, symptoms persisted. A repeat I&D confirmed recurrent septic arthritis with osteomyelitis of the distal femur and proximal for which he received a six-week course of IV ertapenem via PICC with clinical improvement.

## Discussion

- ❖ This case highlights a rare but severe infection following ex-plantation of a temporary genicular nerve PNS system.
- ❖ While PNS is generally safe with low infection rates, serious complications like septic arthritis can occur, especially in high-risk patients. Unlike spinal cord stimulation (4), standardized prophylactic antibiotic guidelines for temporary PNS are lacking.
- ❖ This case underscores the need for evidence-based protocols and further research to guide infection prevention in high-risk individuals undergoing temporary PNS therapy.

## References

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3. Deer, T.R., D.A. Provenzano, M. Hanes, et al., The Neurostimulation Appropriateness Consensus Committee (NACC) Recommendations for Infection Prevention and Management. *Neuromodulation*, 2017. 20(1): p. 31-50