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### RESEARCH ARTICLE

#### ULTRASOUND-GUIDED ANTERIOR SCIATIC NERVE BLOCK AND FEMORAL NERVE BLOCK FOR MANAGEMENT OF ABOVE KNEE AMPUTATION IN A POSTOPERATIVE TIBIA EXTERNAL FIXATION PATIENT WITH SEPTIC SHOCK: A CASE REPORT

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##### Manuscript History

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#### Abstract

This case report describes the successful management of a 50-year-old male patient with septic shock following a right tibia external fixation surgery, who was subsequently scheduled for an above knee amputation. The patient presented with hypoxia, hypotension, and required intubation in intensive care unit. In addition, the patient was placed on a noradrenaline infusion due to persistent hypotension. Laboratory investigations revealed thrombocytopenia, elevated procalcitonin levels, increased C-reactive protein, elevated myoglobin levels, and elevated D-dimer levels. Given the patient's critical condition, an ultrasound-guided anterior sciatic nerve block and femoral nerve block were performed for surgery. This case report discusses the successful perioperative management of the patient's septic shock and the potential role of regional nerve blocks in such critically ill patients.

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#### Introduction:-

Septic shock is a life-threatening condition characterized by systemic inflammation and hypotension resulting from a severe infection. Patients with septic shock often require aggressive resuscitation and hemodynamic support. Regional nerve blocks have been increasingly used in critically ill patients for pain management and hemodynamic stability. This case report presents the successful use of ultrasound-guided anterior sciatic nerve block and femoral nerve block in a patient with septic shock following a tibia external fixation surgery posted for above knee amputation.

#### Case Presentation:

A 50-year-old male patient with a history of right tibia external fixation surgery done 5 days ago presented with the fever, hypoxia, and hypotension in intensive care unit. The patient was diagnosed with septic shock based on clinical and laboratory findings, including thrombocytopenia (platelet count 90,000), elevated procalcitonin levels (40 ng/ml), increased C-reactive protein (464 mg/L), elevated myoglobin levels (>500 mcg/L), and elevated D-dimer levels (1500 mg/L). The patient was subsequently intubated due to worsening hypoxia and was started on noradrenaline infusion to maintain blood pressure.

Given the patient's critical condition and the need for above knee amputation, a multidisciplinary team including an anesthesiologist, orthopedic surgeon decided to perform an ultrasound-guided anterior sciatic nerve block and femoral nerve block for the surgery and perioperative pain management. The procedure was performed successfully, and the patient's pain was effectively managed without the need for additional systemic analgesics.

The patient underwent above knee amputation under ultrasound-guided anterior sciatic nerve block and femoral nerve block with minimal hemodynamic instability during the procedure. Postoperatively, the patient remained hemodynamically stable and was successfully weaned off noradrenaline infusion within 36 hours. The patient's pain was well-controlled with minimal opioid requirements, and he showed signs of clinical improvement.

**Discussion:-**

This case report highlights the successful use of ultrasound-guided anterior sciatic nerve block and femoral nerve block in a critically ill patient with septic shock. The use of regional nerve blocks in such patients can provide effective pain management while minimizing systemic opioid use, which may contribute to hemodynamic instability and respiratory depression. Additionally, regional nerve blocks have been shown to have potential immunomodulatory effects, which may be beneficial in patients with systemic inflammation.

**Conclusion:-**

Ultrasound-guided anterior sciatic nerve block and femoral nerve block can be valuable tool to perform surgery and in perioperative pain management of critically ill patients with septic shock. These regional nerve blocks provide effective pain management while potentially contributing to hemodynamic stability and reduced opioid-related adverse effects. Further research is warranted to explore the role of regional nerve blocks in the management of septic shock and other critical.