



ACUTE PAIN MANAGEMENT FOR TIBIAL OSTEOTOMY AND EXTERNAL FIXATOR PLACEMENT SURGERY ON A PEDIATRIC PATIENT WITH MULTIPLE COMORBIDITIES



Antony Irungu, MD, Mihaela Visoiu, MD

INTRODUCTION

Continuous nerve blocks are valuable for managing postoperative pain in pediatric patients with multiple comorbidities. This case report will focus on the safety and efficacy of placing a popliteal catheter in an 8 yo male (88.1 kg, 129 cm, BMI 52.94) with a complex medical history significant for 1) Von Willebrand Disease Type I (qualitative defect), 2) Obstructive sleep apnea (OSA) with AHI of 19.3 (s/p tonsillectomy and adenoidectomy, on 1L NC overnight),3) hyperlipidemia, 4)hypertension, 5) asthma, 6) developmental delay, 7) Blount's disease and 8) central Diabetes insipidus.

INTERVENTION

Following an uneventful surgical and anesthetic procedure, an ultrasound and nerve stimulator guided left popliteal sciatic nerve block with a stimulating 18G Touhy needle. Saline was injected around the nerve as requested by surgeon to facilitate motor and sensory examination after emergence from anesthesia. A separate 18G Touhy needle was introduced about 6 cm above the primary insertion point where the catheter was tunneled successfully. Chlorhexidine coated dressing was placed and reinforced with steri-strips and transparent occlusive dressing then labeled accordingly. An ultrasound-guided single-injection left-sided adductor canal block with 10 ml of 0.5% ropivacaine was performed. After post surgical examination in the PACU, an infusion of 8ml/hr 0.2% ropivacaine was started.. Multimodal medical management included acetaminophen, gabapentin, hydromorphone, oxycodone, and valium.

DISCUSSION /SUMMARY

Pediatric pain management for a patient with multiple comorbidities (BMI of 50, OSA on 1L NC home oxygen, hypertension, and an elevated bleeding risk due to von Willebrand disease type I), can be challenging.

Block selection must cover most, if not all, projected post-operative pain. We elected to do a left-sided popliteal sciatic catheter. In addition, this was the most compressible site in case of bleeding. We elected to double-tunnel this catheter to minimize the risk of dislodgment (2). The adductor canal covered saphenous distribution with a single-shot injection. It was expected and explained that saphenous distribution was going to diminish.

A reasonable history inquiry from the parents and hematology specialist should be done to determine the severity of quantitative deficiency to determine if the patient has mild or severe disease (1). A detailed surgical course from the surgical and anesthetic team should also be done to determine if there was increased bleeding during and after the surgery.

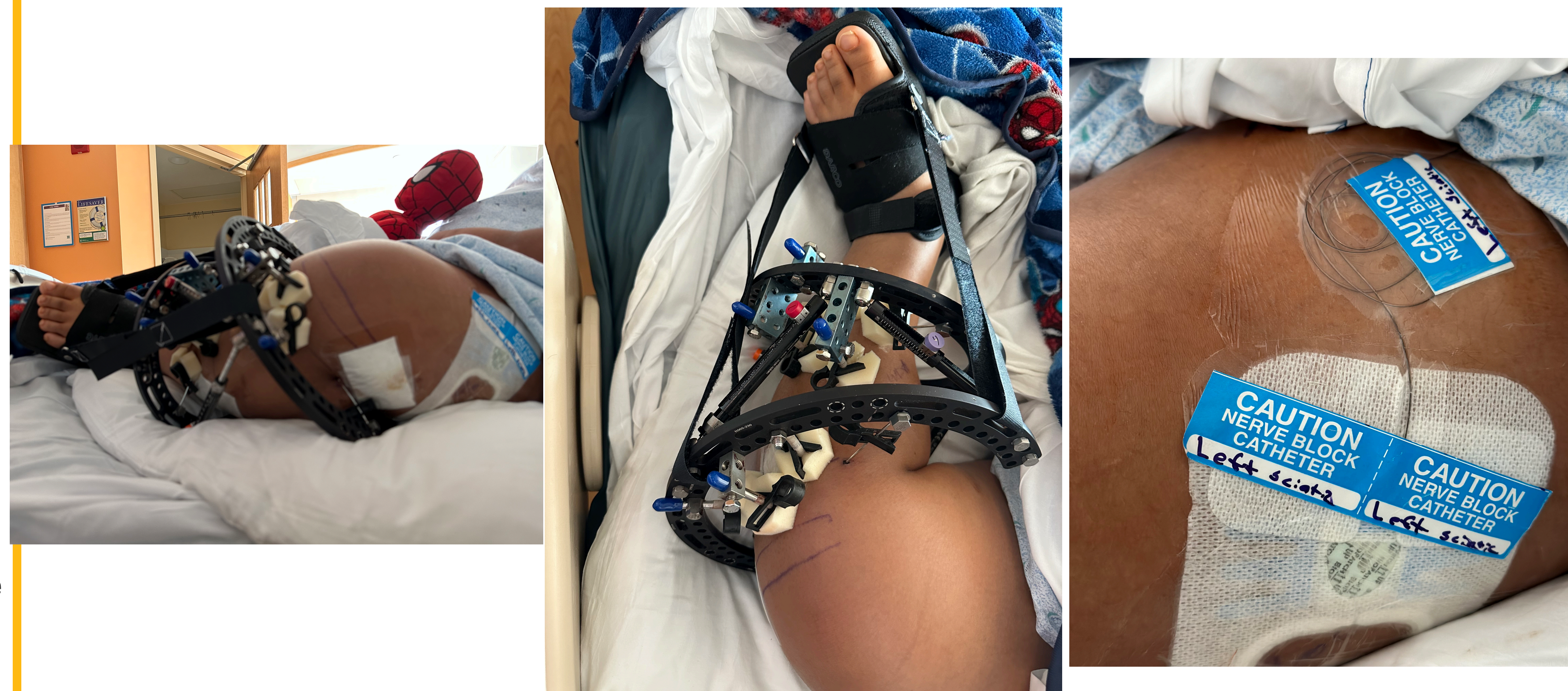
Pain regimen on such a patient should focus on minimizing opioids and other sedative medications. Frequent assessments and reassessments and updates to family

CASE REPORT

The patient presented for left tibia osteotomy with an external ring fixator. Based on preoperative evaluation and the discussion with the surgical team, a left popliteal nerve with and a single injection adductor canal block were determined to be the most beneficial and safe to perform for postoperative pain control before emergence from anesthesia.

FLACC scores used to evaluated pain control, ranged from 2-6 for the 7 days popliteal was in place. Patient averaged 2-3 administrations of 0.2mg hydromorphone Q3H prn daily and 1-2 administrations of 5mg oxycodone Q4H prn. The patient had no reported events of oversedation, respiratory depression or complications from nerve block or local anesthetic. The patient was able to start physical therapy shortly. He participated in a lot of activities at the bedside and was able to sleep well.

FIGURES/IMAGES



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