

Improving Postoperative Pain Score Among Charcot Marie Tooth Reconstructive Surgery Receiving Ambulatory Nerve Infusion Therapy

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Background Information: As the practice in outpatient foot and ankle surgeries increases, more painful and invasive procedures are being performed. One such procedure, Charcot Marie Tooth (CMT) reconstructive surgery, has proven to cause severe pain well beyond the 24-hour period postoperatively. Use of continuous local anesthetic-based peripheral regional analgesic techniques for patient undergoing surgical procedures is preferred where postoperative pain is likely to be more prolonged. Furthermore, there has been a rapid rise in use of ambulatory nerve infusion therapy (AMBIT) for orthopedic surgeries and may prove to be effective for more invasive CMT surgery.

Objectives of Project: To improve postoperative pain scores for CMT reconstructive surgery patients receiving the ambulatory nerve infusion therapy.

Process of Implementation: The Pavilion Post Anesthesia Care Unit (PACU) was chosen to initiate the use of AMBIT from November 2020 to August 2021. Regional Anesthesia team coordinated the initial process for appropriate implementation of this device. Upon approval, Regional Anesthesia, Pharmacy, Informatics, and PACU nursing team collaborated and prepared a protocol for this device to be implemented. Educational in-services were provided to all PACU, emergency room, and inpatient nurses to ensure proper nursing and patient education and safety. Test of change was implemented with appropriate patient selection guidelines. Patients who received the AMBIT pump therapy were evaluated after 72 hours of surgery.

Statement of Successful Practice: The implementation of the ambulatory nerve infusion therapy for CMT patients showed significant improvement in postoperative pain for 72 hours postoperatively. Pre-implementation pain scores average in the severe range. Post implementation pain scores average in the mild to moderate range.

Implications for Advancing the Practice of Perianesthesia Nursing: A multi-disciplinary test of change created an effective workflow for implementing peripheral nerve catheters for a novel and invasive procedure. Furthermore, preliminary results proved this ambulatory nerve infusion therapy improves postoperative pain for CMT reconstructive surgery well beyond the 24-hr period after discharge. Future studies should examine the effectiveness of postoperative pain management using AMBIT pump therapy for other procedures, as well as compared to other conventional treatments.