Lateral Trans-Biceps Popliteal Block for Elective Foot and Ankle Surgery Performed after Induction of General Anesthesia

Reference:

Scientific Literature Reviews

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Podiatric Relevance:
Postoperative pain management is an important aspect of foot and ankle. This study evaluates the safety and efficacy of a lateral popliteal block use for pre-emptive analgesia after the induction of general anesthesia for the reduction of postoperative pain.

Methods:
This study is based on the retrospective analysis of 475 patients that had popliteal blocks using a lateral approach for elective foot and ankle procedures. Patients included in this study did not receive long-acting muscle relaxants during or prior to general anesthesia. A lateral popliteal block with two injection points was conducted after general anesthesia was induced. The technique is divided into three parts: 1. identification of the anatomical landmarks, 2. stimulation of the nerve, 3. administration of the block. The first step requires identification of the biceps femoris insertion and the superior pole of the patella. A line is then drawn from the superior portion of the patella from anterior to posterior until it intersects with the biceps tendon. This serves as the entry point of injection. Stimulation of the tibial nerve is performed with use of a peripheral nerve stimulator: the appropriate depth can be confirmed with plantar flexion and inversion of the foot. Although nerve stimulation can be noted at higher levels it is recommended to inject at a current of 1.0 mA. The block is executed using 20 ml of 0.5 % bupivacaine with epinephrine 1:200,000. The local block is completed by injecting the saphenous nerve at the medial tibial tubercle.

Results:
Of the 475 patients, 398 patients (83.7%) had a complete block. Of the remaining incomplete blocks (16.2%), 21 patients (4.4%) had no pain but some motor function, 32 patients (6.5%) reported mild to moderate pain, and 24 patients (5.3%) had severe pain. The average duration of the popliteal block was 16.5 hours. No adverse reactions to the injection were noted.

Conclusion:
This study concludes that lateral popliteal nerve block appears to be safe and effective for intra-operative and postoperative pain control. The advantages include reduction of pain during administration of the block (general anesthesia), increased ease and safety of performing the block, ability to put on a thigh tourniquet (above block), and to provide postoperative analgesia after foot and ankle surgery.