

Peripheral Neuropathy After Locoregional Anesthesia

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Abstract : Peripheral neuropathy is a rare but worrying complication of peripheral local anaesthesia. It is caused either by needle contact with the nerve root or by the direct toxicity of local anaesthetics, leading to nerve damage, injury or irritation. Although uncommon, it remains a major concern for anaesthetists. The aim of the study was to assess the prevalence of nerve block-associated neuropathy in knee surgery and to identify the contributing factors in order to minimise the occurrence of this complication. The study also assessed the severity and evolution of lesions, as well as the factors leading to neuropathic pain. **Methodology:** It is a retrospective observational study on cases of neuropathy related to nerve blocks of the lower limb for knee surgery over a period of seven years (2016-2022). The study included a total of 6,000 patients. **Analyse the anaesthetic and neuropathic pain-related parameters received from these patients to determine the prevalence and severity of neuropathy.** **Findings:** the prevalence of nerve block-related neuropathy in our study is 5.8‰ for the sciatic nerve and 0.9‰ for the femoral nerve. This was higher compared to the reported rates in the literature, which were between 0.0 to 5‰ for the Sciatic nerve and 0.0 to 3.4‰ for the femoral nerve. These findings highlight the importance of identifying and implementing an ideal anesthesia procedure to reduce the risk of neuropathy associated with nerve blocks. **Theoretical Importance:** The findings of this study contribute to the existing literature on peripheral neuropathy following locoregional anesthesia. By identifying the prevalence and severity of neuropathy related to nerve blocks, as well as the underlying factors, we provide valuable insights for anaesthetists to improve patient safety. This study also emphasizes the need for compliance with technical safety rules to minimize the occurrence of neuropathy. **Data Collection and Analysis Procedures:** For this study, 25 clinics with retrospective data were collected of neuropathy associated with nerve blocks for knee surgery over a span of seven years. Parameters related to anaesthesia and neuropathic pain were analysed to determine prevalence, severity, and progression of neuropathy. **Comparison of our results with the existing literature in order to assess their significance.** **Questions Addressed:** This study aims to define the following points: 1. The prevalence of neuropathy associated with nerve blocks for knee surgery. 2. The factors underlying the development of neuropathy after nerve blocks. 3. Reducing the risk of neuropathy by complying with technical safety rules. 4. Assessing the severity and evolution of neuropathic pain in these cases. **Conclusion:** this study highlights the need for careful consideration and implementation of anesthesia procedures during nerve blocks for knee surgery. The prevalence of neuropathy linked to these blocks was higher compared to the literature, emphasizing the importance of identifying and minimizing contributing factors. Compliance with technical safety rules is crucial to reduce the risk of peripheral neuropathy. This study provides valuable insights to anaesthetists and contributes to improving patient safety in the field of locoregional anesthesia.

Keywords : phantom limb, neuropathic pain, lower limb amputee, ultrasound-guided locoregional anesthesia

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