

Abstract #12

The Incidence and Clinical Characteristics of Neurologic Sequelae Following 1,273 Consecutive Peripheral Nerve Blocks

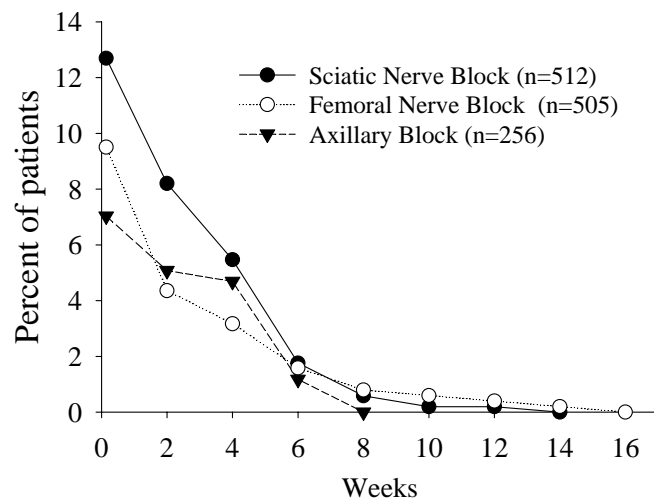
Robert Doty Jr., M.D., Alina Brodskaja, M.D., Mark C. Kendall, M.D., Robert J. McCarthy, Pharm D.

Northwestern University Feinberg School of Medicine, Chicago, IL

Introduction: Studies have shown that prolonged neurologic deficit following peripheral nerve blocks occurs infrequently.¹ Transient symptoms of nerve injury occur more frequently and the reported frequency of occurrence depends in large part on retrospective or prospective method of follow-up.² In addition, symptoms may not be apparent immediately following surgery and may only appear weeks after the procedure. The purpose of this study was to prospectively evaluate the incidence of clinical characteristics of neurological sequelae in a large series of consecutive patients following peripheral nerve block for ambulatory surgery, primarily performed by resident trainees.

Methods: Following IRB approval, written informed consent was obtained from adult patients undergoing ambulatory surgery over a 1 year period. Patients received neurostimulator-guided peripheral nerve blocks (femoral n=505, sciatic n=512, axillary n=256) using standard techniques. Levobupivacaine 0.625% with epinephrine 1:200,000 (0.5 ml/kg) was the primary anesthetic used in these cases. Supplemental sedation, spinal or general anesthesia was provided as needed. All patients were followed up for neurologic sequelae via telephone using a standardized questionnaire by a single investigator (MCK) not involved with the procedure. Patients were evaluated between 24, 48 hours, at 2 weeks and at 1 month following the procedure for the presence of motor weakness, sensory symptoms (spontaneous or provoked by movement and/or pressure) and/or deficits characterized as anesthesia, hypesthesia, paresthesia, and/or dysesthesia. Pain/numbness at block site, bruising/hematoma at block site, patient satisfaction with anesthesia, and pain control were also noted. Symptomatic patients at the end of the 1 month period were contacted bi-weekly until symptom resolution. Descriptive statistics were used to define the incidence of neurologic sequelae with respect to onset time, distribution and duration.

Results: Of the 1,273 cases no patient sustained a peripheral neuropathy that did not resolve during the follow-up period. The percent of patients reporting 1 or more symptoms as a function of time is shown in the figure. Anesthesia in the distribution of the blocked nerve was the most frequent symptom reported followed by paresthesia. Dysesthesias were infrequently reported at 24 hours, but more often 2 weeks after the procedure.



Discussion: The etiology of neurological sequelae following peripheral nerve blocks is often multifactorial. Our data supports previous findings demonstrating a low incidence of long-term injury from peripheral regional anesthesia. Transient symptoms of possible nerve injury following axillary nerve block (7%) in our series is less than those reported (19%) in a series in which paresthesia was elicited at needle placement.³ We also found that symptoms may not be reported during the first 24 hrs following surgery and further direct follow up is needed to evaluate patients for these symptoms.

References: 1.) Anesthesiology 2002; 97:1274-80 2.) J Neurosurg Anesthesiol 2004; 16: 84-6
3.) Reg Anesth 1994; 19:175-82.