

PD-42. EARLY PREDICTORS OF SUCCESSFUL BRACHIAL PLEXUS BLOCKADE.

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Introduction: Many anesthesiologists wait for full onset of sensori-motor blockade after initiating a brachial plexus block before the patient is taken into the operating room. In the setting of busy operating room, the ability to predict successful block could minimize delays between block placement and preparation for surgery. Objective: To determine the earliest clinical predictors of successful anesthesia after brachial plexus block (interscalene or infraclavicular blocks).

Methods: After informed consent, 43 adult patients undergoing upper extremity surgery under brachial plexus blocks were prospectively enrolled. Following light pre-medication, all blocks were performed by anesthesia residents under anesthesia attending supervision. Blocks were performed using nerve stimulation technique (interscalene block =0.4 mA, deltoid or distal twitch; infraclavicular: =0.3 mA, hand twitch). Immediately upon injection of 40 ml of local anesthetic, the patient was examined at 1 min intervals for the onset of blockade (venodilation, motor block and loss of perception to pin-prick, temperature discrimination and muscle coordination). A successful block was defined as complete motor-sensory anesthesia in the appropriate anatomical distribution and the absence of need for anesthesia supplementation during surgery.

Results: Twenty-three patients having interscalene and 20 patients having infraclavicular block were studied. Nerve stimulation with interscalene approach included twitches of the deltoid (40 %), triceps (17 %), various combine muscle twitches (43 %) at the mean current of 0.38 mA. In the infraclavicular block group, hand muscle twitch was obtained in all subjects at the mean current of 0.26 mA. Three blocks failed (7%; 2 interscalene, 1 infraclavicular). 93% of patients had full sensory-motor block at the start of the operation. None of these patients required supplemental local or general anesthesia. The earliest detectable signs for successful anesthesia in both groups were loss of finger-to-finger coordination (83%) and loss of temperature discrimination in the deltoid region for interscalene block (83%) and in forearm for infraclavicular block (80%). These signs were present in all patients with successful blocks within 5 minutes (most within 2 mins) and absent in patients with failed blocks. The onset of sensory and motor block occurred at significantly longer interval (5-15 mins).

Conclusions: These preliminary data suggest that the earliest clinical signs predicting successful brachial plexus blockade are loss of muscle coordination and temperature discrimination. In contrast, the onset of sensory and motor block which are routinely used to assess anesthesia after brachial plexus blocks occur at significantly longer interval (5-15 mins in our study). High percentage of successful blocks in the preliminary study requires larger group of patients in order to recommend these signs as one predicting successful block.