

Anesthetic Considerations for Carotid Endarterectomy: Prospective Study Based on Clinical Trials

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Abstract : Introduction: The aim of this review is based on clinical research that studies the changes in middle cerebral artery velocity using Transcranial Doppler (TCD) and cerebral oxygen saturation using cerebral oximetry in patients undergoing carotid endarterectomy (CEA) surgery under local anesthesia (LA). Patients with or without neurological symptoms during the surgery are taking a role in this study using triplet method of cerebral oximetry, transcranial doppler and awake test in detecting any cerebral ischemic symptoms. Methods: about one hundred patients took part during their CEA surgeries under local anesthesia, using triple assessment mentioned method, Patients requiring general anesthesia be excluded from analysis. All data were recorded at eight surgery stages separately to serve this study. Results: In total regional cerebral oxygen saturation (rSO₂), middle cerebral artery (MCA) velocity, and pulsatility index were significantly decreased during carotid artery clamping step in CEA procedures on the targeted carotid side. With most observed changes in MCA velocity during the study. Discussion: Cerebral oxygen saturation and middle cerebral artery velocity were significantly decreased during clamping step of the procedures on the targeted side. The team with neurological symptoms during the procedures showed higher changes of rSO₂ and MCA velocity than the team without neurological symptoms. Cerebral rSO₂ and MCA velocity significantly increased directly after de-clamping of the internal carotid artery on the affected side.

Keywords : awake testing, carotid endarterectomy, cerebral oximetry, Tanscranial Doppler

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