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Awake craniotomy

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Awake craniotomy represents an important option for surgical procedures that require patient participation to define the extent of resection. The primary goal of anesthestic management in awake craniotomy is to have an alert and cooperative patient during cortical mapping. Drugs administered during the procedure should provide an adequate level of sedation and analgesia for bone flap removal, placement of the head holder, skin and dura opening, but must not interfere with functional testing. A combination of droperidol and opioids (termed neuroleptanalgesia) has been traditionally used to produce a state of indifference, immobility, and analgesia. The recent FDA "black box" warning related to fatal dysrhythmias associated with droperidol lead to almost complete abandonment of this technique. Several reports have endorsed the use of propofol/opioid combination for sedation during awake craniotomy. The rapid onset and a fast redistribution offer flexibility and ease of titration. In addition, the use of propofol reduced the incidence seizures and nausea/vomiting. Oversedation and respiratory depression are ever-present concern. A number of recent studies suggested the use of dexmedetomidine (DEX) for procedures that require intraoperative awakening. DEX, produces an unusually cooperative form of sedation, where patients easily transition from sleep to wakefulness and task performance when aroused, and then back to sleep when not stimulated. In summary, the awake craniotomy offers definite advantages over general anesthesia for brain lesion resection that requires an intraoperative functional mapping and/or intraoperative ECoG. Various anesthetic techniques were used successfully without significant morbidity. Although DEX is primary sedative in the author's institution, there are no studies documenting its advantages over the other techniques.

Biography

Alex Bekker is Professor and Chairman of Anesthesiology at Rutgers New Jersey Medical School. He obtained his Doctoral Degree in Engineering from the New Jersey Institute of Technology and received his Medical Degree from the Rutgers – New Jersey Medical School. He completed his anesthesia training at Columbia Presbyterian Medical Center in New York. He has joined the Department of Anesthesiology at the NYU Medical Center in1995 and was appointed a Vice-Chair for Research in 2005. He is internationally recognized expert in neuroanesthesia and is frequently invited to speak at Grand Rounds and Scientific Panels. He has been active in research and for many years. He is an author of 65 peer reviewed publications, 6 US patents, 33 educational reviews and more than 100 abstracts. His work has focused on perioperative brain protection, neuroinflammation, postoperative pain control and clinical pharmacology. He was a PI of numerous clinical trials, including studies sponsored by the National Institute of Aging. He serves on the editorial board of the Journal of Neurosurgical Anesthesiology and is ad hoc reviewer for 15 peer-reviewed journals, including NEJM, Anesthesiology, Neurosurgery, PLoS One, Anesthesia and Analgesia.

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