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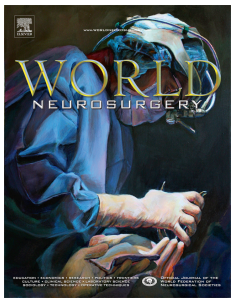

Sedation during surgery for movement disorders and perioperative neurological complications: an observational study comparing local anesthesia, remifentanil and dexmedetomidine

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Sedation during surgery for movement disorders and perioperative neurological complications: an observational study comparing local anesthesia, remifentanil and dexmedetomidine.

Introduction

The anesthetic management of patients requiring surgery for movement disorders needs to balance microrecording quality and patient cooperation with safety and comfort. Although anesthesia management varies widely between institutions, most teams use local anesthesia and monitored anesthesia care (LA-MAC) and conscious sedation.(1) Anesthetic drugs affect neuronal activity and so can alter microelectrode recording (MER). (2-7) Temporary suppression of Parkinson disease tremor has been described with propofol and remifentanil.(8) Dexmedetomidine may also alter and even abolish tremor, even at low doses, as we reported elsewhere.(9)

Although it is feasible to perform this procedure with good results under general anesthesia (GA) many teams prefer an awake, cooperative patient to ensure the best possible motor results.(10-12) Perioperative neurological complications in this surgery include intracranial hemorrhage (ICH), a potentially devastating complication (1, 13-15) that has been linked to coagulation alterations, length of surgery, number of microelectrode passes, and high blood pressure in the perioperative setting.(1, 13, 16, 17) New onset seizures, intra-or postoperative drowsiness or confusion, and speech or movement problems (18) have also been described.

In our institution, we started surgery for movement disorders in 2000, and the neurosurgical and anesthetic team has remained fairly consistent ever since. The principal surgeon (Dr. Guridi) was already experienced in the technique prior to starting the program with us. We adopted different anesthetic approaches over the years, in an attempt to ensure the patient´s comfort and safety while maintaining the quality of testing and cooperation. The goal of this study was to analyze the possible influence of three anesthesia techniques (LA-MAC, and sedation with either remifentanil or dexmedetomidine) on the incidence of ICH and perioperative neurological events (PNEs) in a historical series of 145 patients undergoing functional neurosurgery (both ablation and DBS) from January 2000 to June 2015.