

**Reply****Réplica**

Dear Editor,

We appreciate the comments of Professor Daniel Volquind<sup>1</sup> and his interest in our work.<sup>2</sup> We would like to clarify the doubts raised. The technique used was spontaneous ventilation, maintained during the procedure, with oxygen delivered by face mask and modulation of sedation. For patients who are appropriate candidates, spontaneous ventilation combined sedation with propofol, remifentanil, and a scalp blockade is an attractive option.<sup>3-7</sup> This protocol has been used in our hospital uneventfully and has several reports in the medical literature.<sup>4-7</sup>

Finally, the patient's physical characteristics (young, ASA-I) allowed the use of doses proposed in our report without ventilatory impairment. When there is an indication for surgery, the neurosurgical team is faced with a dilemma: wide excision of the lesion, but also increased risk of functional impairment, which may severely impair the patient's quality of life. When motor regions are concerned, cortical area mapping is of interest to define the surgical approach.<sup>3,8</sup> In our patient, cortical mapping was done using electrical stimulation. Mapping and the patient's "active" participation allowed us to observe possible motor and verbal changes and delineate the surgical excision.

We agree with Professor Volquind that anesthetic drugs interfere significantly in certain monitoring. However, to our knowledge, there is no optimum drug for anesthesia during awake surgery. Ramsay sedation scale is widely used and easy to apply.<sup>9</sup> It is based on six stages and on stage 2, the patient is cooperative, oriented, and tranquil; on stage 3, the patient is sleepy, but responds to commands. We maintained the patient on stage 3 when the head was secured with Mayfield fastener and during the scalp approach.

We would like to emphasize that the technique described in our case report is feasible and safe, but it depends on the skill of the anesthesiologist in drug titration, as well as on his psycho-emotional sensitivity to maintain close contact with the patient throughout the surgery.

**References**

1. Volquind D. Comentário a: Anestesia para craniotomia em paciente acordado: relato de caso. Rev Bras Anestesiol. 2014;64:374.
2. Bolzani ND, Junqueira DOP, Ferrari PAF, et al. Anestesia para craniotomia em paciente acordado: relato de caso. Rev Bras Anestesiol. 2013;63:500-3.
3. Amorim RL, Almeida AN, Aguiar PH, et al. Cortical stimulation of language fields under local anesthesia: optimizing removal of brain lesions adjacent to speech areas. Arq Neuropsiquiatr. 2008;66:534-8.
4. Hans P, Bonhomme V, Born JD, et al. Target-controlled infusion of propofol and remifentanil combined with bispectral index monitoring for awake craniotomy. Anaesthesia. 2000;55:255-9.
5. Johnson KB, Egan TD. Remifentanil and propofol combination for awake craniotomy: case report with pharmacokinetic simulations. J Neurosurg Anesthesiol. 1998;10:25-9.
6. Sung B, Kim HS, Park JW, et al. Anesthetic management with scalp nerve block and propofol/remifentanil infusion during awake craniotomy in an adolescent patient—a case report. Korean J Anesthesiol. 2010;59:S179-82.
7. Wolff DL, Naruse R, Gold M. Nonopioid anesthesia for awake craniotomy: a case report. AANA J. 2010;78:29-32.
8. Maertens DN, Born JD, Hans P, et al. Intraoperative localization of the primary motor cortex using single electrical stimuli. J Neurol Neurosurg Psychiatry. 1996;60:442-4.
9. Ramsay MA, Savege TM, Simpson BR, et al. Controlled sedation with alphaxalone-alphadolone. Br Med J. 1974;22:656-9.

Edmundo Pereira de Souza Neto

Hôpital Neurologique Pierre Wertheimer, Lyon, France

E-mail: [edmundo.pereira.de.souza@hotmail.fr](mailto:edmundo.pereira.de.souza@hotmail.fr)

Available online 3 July 2014

<http://dx.doi.org/10.1016/j.bjane.2014.05.010>