SPECIFIC COMMENTS TO AUTHORS

The aim of the reviewed manuscript titled Anesthetic technique for awake artery malformation clipping with motor evoked potential and somatosensory evoked potential is to describe the use of awake craniotomy technique for the clipping of a brain AVM located in the territory of the anterior cerebral artery on the right side. Regarding the Core Tip based on own experience with awake craniotomy technique it is impossible to perform awake craniotomy in a patient requiring respiratory support or even controlled ventilation in particular in case when speech or memory monitoring is needed. Therefore I suggest reformulatting the sentence Awake craniotomy was performed successfully with spontaneous respiration in this patient – e.g. uneventfully in fully cooperative patient with stable neurological status. In the Introduction section the main aim of awake techniques – preservation of functions that can not be monitored in asleep patients (speech, memory,….) should be underlined. Moreover, in the vast majority of AVM cases the simple term clipping is misleading – the principle of surgery is AVM nidus removal, not only the clipping of the feeders. The Case Presentation is well written, but the indication of surgery for asymptomatic, incidentally found small AVM in 62 years old lady without any presented evidence of previous bleeding is at least disputable. Similarly the submitted single projection (Fig.1) 3D DSA does not depict the lesion well – at least 2 projections of DSA images together with MRI scans (axial and sagital for the evaluation of the AVM relationship to the central area or the potential vessels en passage potentially supplying the motor area). Finally also the advantages of surgery as a preferred treatment mode when compared with endovascular treatment or radiosurgery should be discussed for this particular case. The description of anaesthesia technique is adequate (from the neurosurgical point of view) – but the description of the surgery as a simple clipping of the supplying vessels also needs clarification - without AVM nidus removal ??? Similarly the surgical result (Fig.4) should be illustrated by more descriptive scans. The chapter Discussion is well written from the neuroanaesthesia point, hovewer as a neurosurgeon I would expect some remarks about surgical aspects of AVMs using awake craniotomy techniques – potential problems wth bleeding control, intraoperative oedema, epileptic seizure, maybe better prevention

of postoperative normal perfusion pressure breakthrough, to name at least some of them. However I fully agree that mastering the awake craniotomy techniques for less common indications (e.g. AVM) has a great potential for the reduction of early neuropsychological morbidity. Finally after major revision (mainly when talking about neurosurgical aspects of the presented case) the paper deserves further review and reconsideration for publication.

Thank you for giving me the opportunity to revise and resubmit this manuscript. We have carefully revised the manuscript according to the reviewer's comments. Based on the suggestions, we have made an extensive modification on the revised manuscript. Detailed revision was shown as follows.

Comment 1: Regarding the Core Tip based on own experience with awake craniotomy technique it is impossible to perform awake craniotomy in a patient requiring respiratory support or even controlled ventilation in particular in case when speech or memory monitoring is needed. Therefore I suggest reformulating the sentence Awake craniotomy was performed successfully with spontaneous respiration in this patient – e.g. uneventfully in fully cooperative patient with stable neurological status.
Reply: Our statement may be not accurate enough. Although spontaneous respiration is reported in many studies, this article focuses on the anesthetic regimen of keeping spontaneous breathing during awake artery malformation clipping. (line 3, page 2)

Comment 2: In the Introduction section the main aim of awake techniques – preservation of functions that can not be monitored in asleep patients (speech, memory,….) should be underlined.
Reply: Thankyou for the advice, we have revised as suggested. (line 10, page 2)

Comment 3: Moreover, in the vast majority of AVM cases the simple term clipping is misleading – the principle of surgery is AVM nidus removal, not only the clipping of the feeders. The Case Presentation is well written, but the indication of surgery for asymptomatic, incidentally found small AVM in 62 years old lady without any presented evidence of previous bleeding is at least disputable. but the description of the surgery as a simple clipping of the supplying vessels also needs clarification - without AVM nidus removal ???
Reply: We apologize that we are only presenting this case from the anesthesiologist's perspective. After consulting the surgeon, the incidence of pure arterial malformations is low. He had informed the patient that pure arterial malformations have a benign natural history, and it was usually managed conservatively. Because of the rare incidence, the optimal treatment for pure arterial malformation is controversial. (line 11, page 4)
While the patient complained of numbness in the left upper limb and headache occasionally after

being hit by a heavy object. Whether these symptoms are related to arterial malformations couldn't be ruled out. Considering the very strong willingness to operate, the surgeon finally decided to perform surgery. (line 22, page 2)
The arterial malformation with many branches runs into the central cortex, affecting the motor and linguistic function. Furthermore, based on the imaging data, arterial dissection can't be completely ruled out. Considering to these factors, the surgeon finally decided that awake craniotomy may be the optimal choice for this patient. (line 14, page 4)
We have described that the dilated and tortuous segments were removed in line 43, page 3.

Comment 4: Similarly the submitted single projection (Fig.1) 3D DSA does not depict the lesion well – at least 2 projections of DSA images together with MRI scans (axial and sagital for the evaluation of the AVM relationship to the central area or the potential vessels en passage potentially supplying the motor area). Similarly the surgical result (Fig.4) should be illustrated by more descriptive scans.
Reply: We have added more figures.(Fig.1A-1D, Fig.5A-5D)

Comment 5: The chapter Discussion is well written from the neuroanaesthesia point, hovewer as a neurosurgeon I would expect some remarks about surgical aspects of AVMs using awake craniotomy techniques – potential problems with bleeding control, intraoperative oedema, epileptic seizure, maybe better prevention of postoperative normal perfusion pressure breakthrough, to name at least some of them.
Reply: As Abdulrauf et al responded, intraoperative aneurysm rupture can be observed under both awake craniotomy and general anesthesia5. Intraoperative hemodynamic variables are smoother in the asleep-awake-asleep group than in the general anesthesia group. In addition, comparing to general anesthesia, awake craniotomy can release stress response, reduce median length of stay, and increase overall survival significantly in high-grade gliomas. Therefore, the incidence of intraoperative aneurysm rupture may be lower in awake craniotomy.

Intraoperative seizure is the most common cause for awake craniotomy failure, which is trigged by electrical cortical stimulation. The risk factors for seizure include stimulus length, current intensity, and the number of stimulations over the same cortical area. However, intraoperative seizure will not result in permanent severe consequence. (line 19, page 5)