

Online Resource 1: According to the Clavien-Dindo Grade (CDG),^[10] complications are classified into five grades based on the treatment required to manage them:

- I) Any deviation from the normal course, but not requiring any intervention (other than anti-emetics, antipyretics, analgesics, diuretics, electrolytes and physical therapy)
- II) Any deviation requiring pharmacological treatment other than that of grade I and/or transfusions and/or total parenteral nutrition
- III) Complications requiring surgical, endoscopic or radiological intervention (3a= not under general anesthesia; 3b=under general anesthesia)
- IV) Life-threatening complications requiring Intensive Care Unit management (4a=single organ dysfunction; 4b=multi-organ dysfunction)
- V) Complications causing death of the patient within 30 days of surgery.

This online supplementary document is part of the article “Repeated craniotomies for intracranial tumors: is the risk increased? Pooled analysis of two prospective, institutional registries of complications and outcomes” by Costanza Maria Zattra^{1,2}, MD; David Y. Zhang¹, MSc; Morgan Broggi², MD, PhD; Julia Velz¹, MD; Flavio Vasella¹, MD; Dominik Seggewiss¹, MD; Silvia Schiavolin³, PsyD; Oliver Bozinov¹, MD; Niklaus Krayenbühl¹, MD; Johannes Sarnthein¹, PhD; Paolo Ferroli², MD; Luca Regli¹, MD; Martin N. Stienen¹, MD, FEBNS

¹Department of Neurosurgery, University Hospital Zurich and Clinical Neuroscience Center, University of Zurich, Frauenklinikstrasse 10, 8091 Zurich, Switzerland

²Neurosurgical Unit 2, Department of Neurosurgery, Fondazione IRCCS Istituto Neurologico Carlo Besta, Milan, Italy

³Public Health and Disability Unit, Department of Neurology, Fondazione IRCCS Istituto Neurologico Carlo Besta, Milan, Italy

Correspondence to:

Martin N. Stienen, MD / FEBNS

Department of Neurosurgery

University Hospital Zurich & Clinical Neuroscience Center

University of Zurich

Frauenklinikstrasse 10

8091 Zurich, Switzerland

Tel: +41 – (0)44 – 255 – 1111

Email: mnstienen@gmail.com