

**Online Resource 3:** Subgroup analysis on patients undergoing microsurgical resection of a high- or low-grade glioma. The data is based on 849 patients, of which 220 underwent repeated surgery.

Logistic regression analysis estimating the relationship between repeated microsurgical resection of a high- or low-grade glioma and morbidity three months after surgery. The multivariate analysis is adjusted for baseline differences in age, sex, size and posterior fossa location of the tumor.

M3 morbidity	Univariate analysis			Multivariate analysis		
	OR	95% CI	p-value	OR	95% CI	p-value
Repeated surgery	0.89	0.59 – 1.35	0.592	1.42	0.91 – 2.23	0.125
Age (per year)	-	-	-	1.04	1.02 – 1.05	<0.001
Male sex	-	-	-	0.93	0.63 – 1.37	0.708
Tumor size (per increase in category)	-	-	-	2.00	1.41 – 2.85	<0.001
Posterior fossa location	-	-	-	2.44	1.07 – 5.60	0.035

Logistic regression analysis estimating the relationship between repeated microsurgical resection of a high- or low-grade glioma and morbidity at time of hospital discharge. The multivariate analysis is adjusted for baseline differences in age, sex, size and posterior fossa location of the tumor.

Discharge morbidity	Univariate analysis			Multivariate analysis		
	OR	95% CI	p-value	OR	95% CI	p-value
Repeated surgery	0.73	0.46 – 1.15	0.175	0.89	0.55 – 1.44	0.625
Age (per year)	-	-	-	1.01	1.00 – 1.03	0.027
Male sex	-	-	-	1.16	0.77 – 1.75	0.481
Tumor size (per increase in category)	-	-	-	1.55	1.08 – 2.21	0.017
Posterior fossa location	-	-	-	1.23	0.51 – 2.93	0.645

Logistic regression analysis estimating the relationship between repeated microsurgical resection of a high- or low-grade glioma and mortality three months after surgery. The multivariate analysis is adjusted for baseline differences in age, sex, size and posterior fossa location of the tumor.

M3 mortality	Univariate analysis			Multivariate analysis		
	OR	95% CI	p-value	OR	95% CI	p-value
Repeated surgery	1.45	0.71 – 2.96	0.302	2.95	1.35 – 6.45	0.007
Age (per year)	-	-	-	1.06	1.03 – 1.08	<0.001
Male sex	-	-	-	0.69	0.34 – 1.40	0.708
Tumor size (per increase in category)	-	-	-	2.65	1.31 – 5.33	0.007
Posterior fossa location	-	-	-	1.13	0.14 – 9.11	0.908

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<sup>1,2</sup>, MD; David Y. Zhang<sup>1</sup>, MSc; Morgan Broggi<sup>2</sup>, MD, PhD; Julia Velz<sup>1</sup>, MD; Flavio Vasella<sup>1</sup>, MD; Dominik Seggewiss<sup>1</sup>, MD; Silvia Schiavolin<sup>3</sup>, PsyD; Oliver Bozinov<sup>1</sup>, MD; Niklaus Kraysenbühl<sup>1</sup>, MD; Johannes Sarnthein<sup>1</sup>, PhD; Paolo Ferrolli<sup>2</sup>, MD; Luca Regli<sup>1</sup>, MD; Martin N. Stienen<sup>1</sup>, MD, FEBNS

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