

Freie Vorträge II

How much monitoring is required after elective craniotomy?

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In most neurosurgical departments patients undergoing an elective craniotomy are postoperatively admitted to an intensive or intermediate care unit (ICU, IMC) for close monitoring until the next morning (i.e. 12–24 h). Currently the COVID-19 pandemic requires this valuable resource and especially ICU-beds are re-allocated. In this study we aim to evaluate the occurrence of neurological or cardiopulmonary events in the early postoperative phase to re-define the monitoring algorithm after elective craniotomy.

Data acquisition was conducted as a single-center retrospective analysis. Patients undergoing elective craniotomy were included in this study. Demographic data, diagnosis, ASA-score, complications, as well as type and duration of monitoring were documented and analyzed.

206 consecutive patients were included in our study. Mean patient age was 60.7 years (18 to 61) and 114 (55,3%) patients were female. 63 (30,6%) patients underwent microsurgical extra-axial tumor resection, 131 (64,6%) intra-axial tumor resection, 16 (7,7%) neurovascular surgery, 48 (23,8%) procedures were infratentorial. The mean ASA-score was 2.5 (0.56 SD). The vast majority (139, 67,5%) of patients was admitted to the ICU and 67 (32,5%) to the IMC unit. During the first 24 hours, 32 postoperative incidents occurred, including

- 1) ongoing catecholamine therapy after surgery ($n = 2$),
- 2) prolonged awakening ($n = 7$),
- 3) postoperative seizures ($n = 3$),
- 4) new temporary or permanent focal neurological deficits requiring imaging ($n = 17$),
- 5) postoperative delirium ($n = 4$),
- 6) postoperative hemorrhage ($n = 5$),
- 7) malignant brain swelling ($n = 2$).

However, 32 patients experienced a postoperative incident detected by close monitoring and requiring ICU monitoring/treatment and seven patients experienced an incident requiring repeat surgery at a mean duration of 6.4 hours after surgery. Two of these cases were very complex surgeries where ICU treatment would have been out of any question. The mean age of patients with postoperative incidents was 65.7 years (24 to 86).

In our study, the ASA-score and age did not correlate with occurrence of complication during early postoperative phase. Neurological deterioration mostly leads to immediate imaging and further conservative therapy. Considering premorbidity and surgery-associated complication to identify patients at risk, a more precise algorithm with a rapid transfer to the normal ward should be established.