




# Neuro Anesthetic Monitoring and Positioning the Patients During Neurosurgical Operations

**Behzad Saberi<sup>1\*</sup>**<sup>1</sup>MD, Medical Research, Esfahan, Iran**\*Corresponding author:** Behzad Saberi, MD, Medical Research, Esfahan, IranReceived:  December 09, 2019Published:  December 16, 2019

## Mini Review

Monitoring the patients during neurosurgical operations, plays an important role to get best surgical results. Central venous pressure and arterial pressure monitoring are important in specific neurosurgical operations [1]. ICP monitoring during neurosurgical approaches, is also of importance in some neurosurgical approaches. Cerebral oxygenation monitoring, jugular venous oximetry, motor and somatosensory evoked potentials, transcranial and precordial Dopplers and electromyography are some neuromonitoring techniques which can be used based on the patient's condition and requirements for specific neurosurgical operations [2-4]. Another neuromonitoring technique which can quantify the hormones, neuropeptides and neurotransmitters in the brain and gives valuable information about the brain's microenvironment, is cerebral micro dialysis [5-7].

Patient's positioning during neurosurgical approaches, is another important factor to get best surgical results. There are various positions which can be used during neurosurgical operations including lateral, prone, supine, sitting and semi-sitting ones. Sitting, semi-sitting or prone positions can be used for the patients based on the surgeon's discretion to approach posterior fossa pathologies [8]. Venous thromboembolism risk is much higher in the sitting and semi-sitting positions in comparison with other neurosurgical positions. There are various notes that should be of notice during positioning the patients for neurosurgical operations to reduce the possible risks of surgical and anesthetic complications including securing endotracheal tube specifically in prone and sitting positions [9], avoiding excessive flexion and rotation of the neck, making venous and arterial lines straight, padding the pressure points, avoiding eyes compression in prone position and also avoiding limbs excessive stretching during positioning. It is important for the surgeons and neuro anesthesiologists to have knowledge about monitoring techniques and patient's positioning

during neurosurgical operations, to avoid surgical complications and getting best surgical results [10].

## References

1. Gupta AK, Bullock MR (1998) Monitoring the injured brain in the intensive care unit: Present and future. *Hosp Med* 59: 704-713.
2. Dearden NM, Midgley S (1993) Technical considerations in continuous jugular venous oxygen saturation measurement. *Acta Neurochir Suppl (Wien)* 59: 91-97.
3. Mashour GA, Avidan MS (2012) Variability indices of processed electroencephalography and electromyography. *Anesth Analg* 114(4): 713-714.
4. Sheinberg M, Kanter MJ, Robertson CS, Contant CF, Narayan RK, et al. (1992) Continuous monitoring of jugular venous oxygen saturation in head injured patients. *J Neurosurg* 76(2): 212-217.
5. Hutchinson PJ, O'Connell MT, Al Rawi PG, Maskell LB, Kett WR, et al. (2000) Clinical cerebral micro dialysis: A methodological study. *J Neurosurg* 93(1): 37-43.
6. Shils J, Sloan T (2015) Intraoperative neuromonitoring. *Int Anesthesiol Clin* 53(1): 53-73.
7. Engstrom M, Polito A, Reinstrup P, Romner B, Ryding E, et al. (2005) Intracerebral microdialysis in severe brain trauma: The importance of catheter location. *J Neurosurg* 102(3): 460-469.
8. Casorla L, Lee JW (2015) Patient positioning and associated risks. In: Miller RD, Eriksson LI, Fleisher LA, Wiener Kronish JP, Young WL (eds.). *Miller's Anesthesia* (8<sup>th</sup> edn). Philadelphia: Elsevier Churchill Livingstone pp. 1240-1265.
9. Ganslandt O, Merkel A, Schmitt H, Tzabazis A, Buchfelder M et al. (2013) The sitting position in neurosurgery: Indications, complications and results. A single institution experience of 600 cases. *Acta Neurochi (Wien)* 155(10): 1887-1893.
10. Warner ME (2013) Patient positioning and potential injuries. In: Barash PG, Cullen BF, Stoelting RK, Cahalan MK, Stock MC, Ortega R (eds.). *Clinical Anesthesia* (7<sup>th</sup> edn), Philadelphia: Lippincott Williams & Wilkins pp. 803-823.

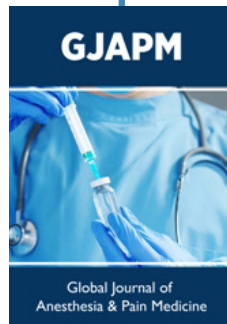


This work is licensed under Creative Commons Attribution 4.0 License

To Submit Your Article Click Here:

[Submit Article](#)

DOI: [10.32474/GJAPM.2019.02.000139](https://doi.org/10.32474/GJAPM.2019.02.000139)



### Global Journal of Anesthesia & Pain Medicine

#### Assets of Publishing with us

- Global archiving of articles
- Immediate, unrestricted online access
- Rigorous Peer Review Process
- Authors Retain Copyrights
- Unique DOI for all articles