

Extended Abstract

Holding back to move forward: Mobilization following posterior fossa neurosurgery

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Abstract

The detrimental impact of immobility is known in the literature. There is a wide variation of specific activity recommendations and when the activity should begin. Increasingly, studies show the need for diagnosis-specific recommendations for protocols. The posterior cranial fossa houses parts of the brain that controls respiration, cardiac cycle, consciousness and balance. In the early post-operative (PO) period following posterior fossa neurosurgery, patients often have episodes of nausea, vomiting, headaches and general discomfort.

Due to a significant loss of cerebrospinal fluid (CSF) during this surgery, there is a higher chance of developing these symptoms. Symptoms worsen with the upright posture. Traction and edema around cranial nerve VIII can lead to vestibular symptoms and poor tolerance of positional changes and upright position.

The act of vomiting may increase intracranial pressure which could jeopardize hemostasis, cerebral perfusion and increase likelihood of CSF leak. Nausea and vomiting can lead to delayed discharge, thereby increasing medical cost. We believe it is beneficial for these patients to begin mobilization gradually. We have instituted a protocol that ensures a less aggressive mobilization approach immediately following posterior fossa surgery.

To compare complications associated with surgical position, a retrospective study was conducted on 260 patients who underwent posterior fossa craniectomy.

Data collected from the records included demographic profile, American Society of Anesthesiologists' physical status score, neurological status, cranial nerve involvement, associated medical illnesses, anaesthetic technique, patient position, haemodynamic changes, duration of surgery, venous air embolism (VAE), blood loss/transfusion, postoperative complications, duration of ICU stay, and postoperative neurological status. Statistical analysis was done using the Chi-square test and independent t-tests.

The demographic profile and preoperative associated medical illnesses of patients were comparable between groups. The incidence of end-tidal carbon dioxide (EtCO₂) detected

VAE was more ($p=0.00$) in the sitting position than the horizontal positions (15.2% vs. 1.4%).

Blood loss/transfusion and the duration of surgery were significantly higher in the horizontal position ($p<0.05$). Brainstem handling was the most common cause of prolonged postoperative mechanical ventilation and was seen more in the sitting position.

Lower cranial nerve functions were preserved better in the sitting position ($p<0.05$). Most postoperative complications (surgical or otherwise) were comparable between the groups ($p>0.05$). Most patients in both groups developed mild-to-moderate disability with independent lifestyle at the seventh postoperative day.

To conclude, both sitting and horizontal positions can be used safely in posterior fossa surgeries.

Descriptive retrospective. To evaluate the burden of respiratory morbidity in terms of ventilator dependence (VD) days and length of stay in neurotrauma ICU (NICU) and hospital, and to determine mortality in patients with traumatic cervical spinal cord injury (CSCI) in a low middle-income country (LMIC). Jai Prakash Narayan Apex Trauma Center (JPNATC), All India Institute of Medical Sciences (AIIMS), New Delhi, India. A total of 135 patients admitted with CSCI in the NICU between January 2017 to December 2018 were screened. Information regarding age, gender, American Spinal Injury Association (ASIA) impairment scale (AIS), level of injury, duration of VD, length of NICU, hospital stay, and outcome in terms of mortality or discharge from the hospital were obtained from the medical records. A total of 106 CSCI patients were analyzed. The mean (SD) age of patients was 40 (± 16) years and male: female ratio was 5:1. The duration of VD, duration of NICU, and hospital stay was a median of 8 days (IQR 1127), 6 days (IQR 1118), and 15 days (IQR 3127) respectively. Mortality was 19% (20/106).

The mortality was significantly associated with poorer AIS score, VD, and duration of ICU and hospital stay. All patients were discharged to home only after they became ventilator-free. The ventilator burden, hospital stay, and mortality are high in patients with CSCI in LMICs. Poor AIS scores, prolonged VD, ICU and hospital stay are associated with mortality. There is a need for comprehensive CSCI rehabilitation programs in LMICs to improve outcome.

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To evaluate the burden of respiratory morbidity in terms of ventilator dependence (VD) days and length of stay in neurotrauma.