

Changes in Intracranial Pressure in Various Positions of the Head in Anaesthetised Patients

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Objectives: To study ICP changes during various head positions in patients undergoing ventriculoperitoneal (VP) shunt surgery.

Methods: The study was conducted on 20 randomly selected American Society of Anesthesiologists Physical Status Class I or II patients of either sex aged above five years scheduled for elective ventriculoperitoneal shunt surgery. ICP was recorded in 15° head up, 15° head down, right and left lateral bending of head, right and left rotation of head and was compared with horizontal (neutral) position.

Results: Intracranial pressure increased in all positions but significant increase was observed in right rotation (40.8%; $p < 0.01$), left rotation of the head (22.2%; $p < 0.001$) and head down 15° position ($p < 0.05$; 6.7%). No clinically significant hemodynamic changes were observed in various positions. No significant changes were observed in oxygen saturation.

Conclusion: Rotation of head to either right or left and head down position increases the ICP significantly. Head elevation may not reduce ICP in all cases. It depends on degree of elevation, intracranial pathology and associated neck position.