Pulmonary embolism prevention

Pulmonary embolism prevention in Neurosurgery

- Postoperative Initiation of Thromboprophylaxis in patients with Cushing's Disease (PIT-CD): a randomized controlled trial
- Predictors of pulmonary embolism in adult patients following neurosurgery: a Chinese single-center, retrospective study
- Symptomatic venous thromboembolism after transsphenoidal surgery in Cushing's disease: incidence and risk factors
- Assessing the impact of perioperative allogenic blood transfusion in spinal surgery: a comprehensive systematic review, meta-analysis, and meta-regression analysis
- Analysis of the current status and influencing factors of LEDVT in patients with acute hemorrhagic stroke
- Cement-Augmented Pedicle Screw Fixation in Patients with Osteoporosis : Safety, Efficacy and Complications
- Surgical and Neurointensive Management for Acute Spinal Cord Injury: A Narrative Review
- Influence of postoperative D-dimer evaluation and intraoperative use of intermittent pneumatic vein compression (IPC) on detection and development of perioperative venous thromboembolism in brain tumor surgery

Prevention of pulmonary embolism is best accomplished by prevention of deep vein thrombosis [1].

Clinicians should pay attention to the prevention and management of Venous Thromboembolism after Spontaneous Intracerebral Hemorrhage. Intermittent pneumatic compression should be applied to patients with sICH on the day of hospital admission. After documentation of bleeding cessation, early initiation of pharmacological Venous Thromboembolism prophylaxis (24 h to 48 h from sICH onset) seems to be safe and effective in pulmonary embolism prophylaxis [2]

Pandey et al. postulated that the introduction of a routine preoperative deep vein thrombosis screening protocol for patients undergoing neurosurgical intervention for brain tumors would result in a more effective diagnosis of DVT in this high-risk subgroup, and subsequent appropriate management of the condition would reduce pulmonary embolism (PE) rates and improve patient outcomes.

The authors conducted a prospective study of 115 adult patients who were undergoing surgical intervention for a brain tumor. All patients underwent preoperative lower-limb Doppler ultrasonography scanning for DVT screening. Patients with confirmed DVT underwent a period of anticoagulation therapy, which was stopped prior to surgery. An inferior vena cava (IVC) filter was inserted to cover the perioperative period during which anticoagulation therapy was avoided due to bleeding risk before restarting the therapy at a later date. Patients underwent follow-up performed by a neurooncology multidisciplinary team, and subsequent complications and outcomes were recorded.

Seven (6%) of the 115 screened patients had DVT. Of these patients, one developed postoperative PE, and another had bilateral DVT postoperatively. None of the patients without preoperative DVT

developed VTE postoperatively. Age, symptoms of DVT, and previous history of VTE were significantly higher in the group with preoperative DVT. There were no deaths and no complications from the anticoagulation or IVC filter insertion.

Preoperative screening for DVT is a worthwhile endeavor in patients undergoing neurosurgical intervention. A multidisciplinary approach in the management of anticoagulation and IVC filter insertion is safe and can minimize further VTE in such patients [3].

Screening Doppler ultrasound examinations, in conjunction with standard-of-practice techniques to prevent thromboembolism, do not appear to confer a benefit to patients. While a screening group had significantly higher rates of DVT diagnosis and IVC filter placement, the screening, additional diagnoses, and subsequent interventions did not appear to improve patient outcomes. Ultimately, this makes DVT screening difficult to justify [4].

References

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