



# Comment on: Silent Pulmonary Thromboembolism in Patients Undergoing Craniotomy for Brain Tumor

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The high rate (26%) of silent pulmonary thromboembolism (SPE) reported by Gok and colleagues (2) in their article “Silent Pulmonary Thromboembolism in Patients Undergoing Craniotomy for Brain Tumor” is remarkable. We should not underestimate this complication, as we know it is associated with long-term morbidity such as repeated episodes of pulmonary thromboembolism (PTE) and development of pulmonary hypertension (1).

This finding leads us to recommend improving the characterization of the coagulation profiles in patients scheduled for resection of brain tumors. This should be done pre- and intra-operatively and would help us identify patients with hyper or hypocoagulable profiles who otherwise wouldn't be identified as such with traditional coagulation tests.

Viscoelastic coagulations tests like thromboelastography (TEG) provide a thorough evaluation of hemostasis by reporting enzymatic and cellular components, thrombolysis, and the balance between them. TEG provides a real-time image of the coagulation profile on a case-by-case basis. This allows for comprehensive decision-making processes in patients who would benefit from interventions such as earlier or immediate pharmacological thromboprophylaxis (in addition to the standard mechanical thromboprophylaxis measures) if they are found to be hypercoagulable, or, on the other hand, delay the start of chemical thromboprophylaxis in hypocoagulable patients to reduce the risk of bleeding. With the use of TEG, we would avoid cataloguing every patient

scheduled for resection of brain tumors as hypercoagulable per se (we know some of them are hypocoagulable (3)) and individualize decision-making and treatments based on the coagulation profile.

## AUTHORSHIP CONTRIBUTION

Study conception and design: CN, DC, DB

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Critical revision of the article: CN, DC, DB, JDG

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## REFERENCES

1. Fulkerson DH, Weyhenmeyer J, Archer JB, Shaikh KA, Walsh M: Thromboelastography-guided therapy of hemorrhagic complications after craniopharyngioma resection: Case-based update. *Pediatr Neurosurg* 54(5):293-300, 2019
2. Gok H, Baskurt O, Sarigul B, Gurbuz D, Celik SE: Silent pulmonary thromboembolism in patients undergoing craniotomy for brain tumor. *Turk Neurosurg* 33(1):87-93, 2023
3. Li F, Wang X, Huang W, Ren W, Cheng J, Zhang M, Zhao Y: Risk factors associated with the occurrence of silent pulmonary embolism in patients with deep venous thrombosis of the lower limb. *Phlebology* 29(7):442-446, 2014