

Primary brain tumors are associated with an increased risk of **pulmonary embolism** (PE), particularly in the early post-operative period. The pathophysiological mechanisms of PE are poorly understood. A study aimed to describe prospectively **extracellular vesicles** (EVs) levels and investigate whether or not their variations allow to identify patients at increased risk of post-operative PE. Consecutive **meningioma** or **glioma** patients candidate to **tumor resection** were included in the study if a pulmonary perfusion scan (Q-scan) performed before surgery ruled out PE. EVs derived from **platelets** (CD41+) or endothelial cells (CD144+), tissue factor-bearing EVs (CD142+) and their procoagulant subtype (annexin V+) were analyzed by **flow cytometry** before surgery (T0), within 24 h (T1), two (T2) and seven days (T7) after surgery. Q-scan was repeated at T2. Ninety-three patients with meningioma, 59 with glioma and 76 healthy controls were included in the study. CD142+ and annexin V+/CD142+ EVs were increased at T0 in meningioma and glioma patients compared to healthy controls. Twenty-nine meningioma (32%) and 16 glioma patients (27%) developed PE at T2. EVs levels were similar in meningioma patients with or without PE, whereas **annexin V+** and annexin V+/CD142+ EVs were significantly higher at T1 and T2 in glioma patients with PE than in those without. Procoagulant EVs, particularly **annexin V+/CD142+**, increase after surgery and are more prevalent in glioma patients who developed PE after surgery than in those who did not ¹⁾.

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Passamonti SM, Artoni A, Carrabba G, Merati G, Abbattista M, Capecchi M, Castellani M, Marengi C, Trombetta E, Giammattei L, Caroli M, Bucciarelli P, Scalabrino E, Peyvandi F, Martinelli I. Plasma levels of **extracellular vesicles** and the risk of post-operative **pulmonary embolism** in patients with **primary brain tumors**: a prospective study. J Thromb Thrombolysis. 2021 Apr 10. doi: 10.1007/s11239-021-02441-3. Epub ahead of print. PMID: 33837918.

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