Venous Thromboembolism and Malignant Brain Tumors: A Review

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The incidence of venous thromboembolism (VTE) in patients with primary brain tumors varies between 1 and 60%. This variability in incidence is due to study differences in (a) methods of diagnosis of VTE—i.e., diagnosis at autopsy or clinical diagnosis; (b) amount of time from surgery to VTE diagnosis; (c) proportion of patients receiving deep venous thrombosis (DVT) prophylaxis; (d) clinical risk factors associated with VTE, such as primaries, prior thrombotic disease, and chemotherapy; and (e) tumor location and histology. The etiology of VTE in patients with primary brain tumors is unknown. The preoperative hemostatic abnormalities noted in clinical studies have been most consistent with compensated disseminated intravascular coagulation (DIC). These abnormalities, however, appear to be of little predictive value for the subsequent development of VTE. Studies involving brain tumor tissue or cell culture have implicated factors released by the tumor or surrounding neural tissue that activate the coagulation system or inhibit fibrinolysis. Recommendations for VTE prophylaxis in claud (e) earliest possible ambulation; (b) intermittent pneumatic compression in all nonambulatory patients preoperatively and postoperatively; and (c) s.c. heparin in high-risk patients. The role of low-molecular-weight heparin in VTE prophylaxis has not been established. Patients with malignant brain tumors can be safely anti coagulated with heparin and warfarin if these agents are carefully monitored. Of 107 patients in seven series who received anticoagulants, only 5 (2.5%) had intracranial bleeding. Vena caval filters and thrombectomy are rarely required. Thrombolytic therapy is contraindicated. Key Words: Venous thromboembolism—Deep venous thrombosis—Malignant brain tumors.