



DOI: 10.5137/1019-5149.JTN.18997-16.0

Received: 06.09.2016 / Accepted: 26.09.2016

Published Online: 17.10.2016

Letter to Editor

Pharmacological Venous Thromboembolism Prophylaxis in Meningioma Patients: Should it be Earlier than in Clinical Practice?

Fatma YILDIRIM¹, Filiz Sadi AYKAN²

¹Diskapi Yildirim Beyazit Research and Education Hospital, Surgical Intensive Care Unit, Ankara, Turkey

²Ankara Numune Research and Education Hospital, Clinic of Pulmonary Medicine, Ankara, Turkey

To the Editor;

We read the report by Celtikci et al. (1) in Turkish Neurosurgery with great interest. In this single-center retrospective study, they analyzed 449 intracranial meningioma patients who underwent open surgery. They stated that venous thromboembolism (VTE) had been seen in 21 (4.6%) of their patients. This is an important issue, because VTE, including deep vein thrombosis (DVT) and pulmonary embolism (PE), is the most common overall complication in meningioma surgery and is fatal in up to one third of patients (2). We suppose that prophylaxis of VTE is most effective when mechanical and pharmacological prophylaxis methods are combined. We consider that there are some practical questions to be answered for proper clinical extrapolation.

First, the method and timing of VTE prophylaxis need more consideration, because the VTE risk is three times higher in meningioma patients than in patients with other brain tumors, such as gliomas or brain metastases (3). Celtikci et al. stated that they used low molecular weight heparin (LMWH) 48 hours after the operation if their patients had been unable to mobilize well and they used compression stockings in every patient until discharge. It isn't clear why they determined the LMWH starting time as 48 hours for the VTE prophylaxis. In most of the studies, first LMWH administration time was between 6-12 hours postoperatively in meningioma operations (2,4).

Intermittent pneumatic compression (IPC) decreases the incidence of VTE by 50% and IPC is the preferred mechanical prophylaxis when pharmacological VTE prophylaxis is

contraindicated in neurosurgery. It is not clear why Celtikci et al. did not prefer IPC within the first 48 hours of operation instead of compression stockings. Several studies have shown that the combination of LMWH and compression stockings is more efficacious than compression stockings alone (5). In Celtikci et al.'s study, they seem to have used only compression stockings during the first 48 hours of operation.

Secondly, they found overall VTE rate as 4.6% and one fourth of these patients died. What was the ratio of patients concomitant with DVT and PE? Was the mortality reason of all the patients dying with VTE a massive PE? Was thrombolytic therapy contraindicated in these patients due to the risk of intracranial hemorrhage? This distinction is important for assessing the mortality of patients.

Thirdly, they showed a correlation between VTE and male gender and they concluded that male gender had been a risk factor for VTE in their patient population. However, they did not make perform multivariate analysis including independent factors such as age, gender, pathological subtype, tumor grade, and tumor location to find independent risk factors for VTE. Therefore, their conclusion about VTE and male gender seems inadequate.

Venous thromboembolic complications are a major contributor to morbidity and mortality following meningioma surgery. They can be reduced by the use of standardized protocols for VTE prophylaxis including pharmacological and mechanical methods at the earliest time after the operation.



Corresponding author: Fatma YILDIRIM

E-mail: ftagassi@hotmail.com

■ REFERENCES

1. Celtikci E, Kaymaz AM, Akgul G, Karaaslan B, Emmez OH, Borcek A: Retrospective analysis of 449 intracranial meningioma patients operated between years 2007 – 2013 in a single institute. *Turk Neurosurg* 2016 Aug 5. (Epub ahead of print)
2. Eisenring CV, Neidert MC, Sabanés Bové D, Held L, Sarnthein J, Krayenbühl N: Reduction of thromboembolic events in meningioma surgery: A cohort study of 724 consecutive patients. *PLoS One* 8(11):e79170, 2013
3. Gerlach R, Krause M, Seifert V, Goerlinger K: Hemostatic and hemorrhagic problems in neurosurgical patients. *Acta Neurochir* 151: 873–900, 2009
4. Kleindienst A, Harvey HB, Mater E, Bronst J, Flack J, Herenz K, Haupt WF, Schön R: Early antithrombotic prophylaxis with low molecular weight heparin in neurosurgery. *Acta Neurochir (Wien)* 145(12):1085-1090, 2003
5. Zacharia BE, Youngerman BE, Bruce SS, Hershman DL, Neugut AI, Bruce JN, Wright JD: Quality of postoperative venous thromboembolism prophylaxis in neuro-oncologic surgery. *Neurosurgery* 2016 May 30. (Epub ahead of print)