On the trail of cerebral sinus venous events in inflammatory bowel diseases

So far, more than 60 case reports concerning cerebral sinus venous thrombosis (CSVT) in patients with inflammatory bowel diseases (IBD) have been published,[1-4] Systemic epidemiological research in the field is very limited[1,2] and something in true large scale is lacking from literature. The first case reported in 1967[3] and in this issue of the journal, Menon *et al*. describe one more case of a young female with IBD who during the course of her disease develop CVST.[5] The title of the specific case is "Cerebral venous thrombosis in Ulcerative colitis- A case report."

Ulcerative colitis and Crohn's disease are inflammatory bowel diseases that can be complicated by various extra-intestinal manifestations such as thromboembolic disease, probably due to transient abnormalities of the coagulation system.[1,4,6] Most thrombotic events occur in the lower extremities and pelvis, whereas the incidence of central nervous system involvement is rare and variable.[1,2,4,6]

Cerebral sinus venous thrombosis is by its own rare and only 1.6% of total cerebral venous thrombotic events are associated with IBD. It is estimated that 1.3% to 6.4% of adults with IBD and 3.3% of children with IBD develop cerebrovascular complications sometime in the course of their disease.[6] It is likely, from our non-systemic search for the needs of this editorial and according to a recent literature review, that patients with CSVT and IBD comorbidity are significantly younger when compared to CSVT patients without IBD.[1]

Still, the mechanisms underlying the venous prothrombotic state linked to IBD are obscured. A number of hypotheses have been published, and these mechanisms are thought to imply combined abnormalities involving: Platelets, coagulation, and fibrinolysis, All these previously reported predisposing factors seems to be closely linked to increased disease activity.[7] Notably, that congenital thrombophilic conditions such as factor II and factor V, MTHFR and prothrombin gene mutation do not explain the increased thrombotic risk in IBD;[8] however, they are of major importance to search for in CSVT patients, even with IBD, because of the personal and familial consequences of their finding and their impact on treatment and prognosis.

Administration of anticoagulants in CSVT prevents new venous infarcts, pulmonary embolism, and improves neurological outcome.[9] Low-weighted molecular heparine (LWMH) is safe and well tolerated for patients with ulcerative colitis, but with no additional benefit over standard therapy, other than the better compliance.[4] Heparin administration is safe, and it was not related with an increased incidence of adverse events in patients with active ulcerative colitis.[10] As for the risk for intracranial bleeding, European Federation of Neurological Societies (EFNS) guidelines suggest that patients with CSVT without contraindications for anticoagulation should be treated subcutaneously with body-weight adjusted LWMH or intravenously with dose-adjusted unfractioned heparin, even in the presence of intracranial hemorrhage.[9,11]

EFNS recommends that oral anticoagulation should be initiative and continued for 3 months if CSVT was due to a transient risk factor, for 6-12 months in patients with idiopathic CSVT or mild thrombophilic condition (heterozygous factor V Leiden mutation, heterozygous prothrombin G20210A gene mutation, and elevated levels of factor VIII) and infinitively in patients with recurrent episodes of CVST or severe thrombophilia (anti-thrombin deficiency, protein C deficiency, protein S deficiency, homozygous factor V Leiden mutation, homozygous prothrombin G20210A mutation, presence of anti-phospholipid antibodies, and combined abnormalities).[9,11] As previously reported, screening for coagulopathies has a great impact on the decision and the long-term therapeutic management of cerebral sinus venous thrombosis in patients with IBD. Notably that the anticoagulation treatment potentially interacts with the commonly used treatment in IBD such as: 5- aminosalycilic

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acid, sulfalazine, azathioprine, 6-mercaptopurine, and infliximab. The attending physicians should consider optimal therapeutic approach and drug dosages.

Closing, we feel compelled to reinforce L.R. Caplan's editorial comments[12] of the importance to seeing single patients that leads to important observations and ideas. Case reports generate ideas and research. All of the important clinical answers do not lie in large analyzes of possibly heterogeneous patients. But, the truth is, that we need a large-scale observational study of the incidence and prevalence of CSVT in IBD patients and mainly formal research into the basic pathophysiological principles: How? When? Why?

Maria Kosmidou, Aristeidis H Katsanos, Sotirios Giannopoulos

Departments of Neurology and Internal Medicine, University of Ioannina School of Medicine, Ioannina, Greece

Address for correspondence:
Dr. Sotirios Giannopoulos,
Department of Neurology, University of Ioannina School of Medicine,
University Campus, 45110, Ioannina, Greece
E-mail: sgiannop@uoi.gr

References

1. Cognat E, Crassard I, Denier C, Vahedi K, Bousser MG. Cerebral venous thrombosis in inflammatory bowel diseases: Eight cases and literature review. Int J Stroke 2011;6:487-92.
2. Standridge S, de los Reyes E. Inflammatory bowel disease and cerebrovascular arterial and venous thromboembolic events in 4 pediatric patients: A case series and review of the literature. J Child Neurol 2008;23:59-66.
3. Harrison MJ, Truelove SC. Cerebral venous thrombosis as a complication of ulcerative colitis. Am J Dig Dis 1967;12:1025-8.
4. Diakou M, Kostadima V, Giannnopoulos S, Zikou AK, Argyropoulou MI, Kyritsis AP. Cerebral venous thrombosis in an adolescent with ulcerative colitis. Brain Dev 2011;33:49-51.
5. Menon B, Goyal R, Nihal L, Reddy R. Cerebral venous thrombosis in Ulcerative colitis- A case report. J Neurosci Rural Pract 2012;04:84-6.
6. Benavente L, Moris G. Neurologic disorders associated with inflammatory bowel disease. Eur J Neurol 2011;18:138-43.
7. Danese S, Papa A, Saibeni S, Repici A, Malesci A, Vecchi M. Inflammation and coagulation in inflammatory bowel disease: The clot thickens. Am J Gastroenterol 2007;102:174-86.
8. Papa A, Danese S, Grillo A, Gasbarrini G, Gasbarrini A. Review article: Inherited thrombophilia in inflammatory bowel disease. Am J Gastroenterol 2003;98:1247-51.
9. Einhäupl K, Bousser MG, de Bruijn SF, Ferro JM, Martinelli I, Masuhr F, *et al*. EFNS guideline on the treatment of cerebralvenous and sinus thrombosis. Eur J Neurol 2006;13:553-9.
10. Shen J, Ran ZH, Tong JL, Xiao SD. Meta-analysis: The utility and safety of heparin in the treatment of active ulcerative colitis. Aliment Pharmacol Ther 2007;26:653-63.
11. Einhäupl K, Stam J, Bousser MG, De Bruijn SF, Ferro JM, Martinelli I, *et al*. EFNS guideline on the treatment of cerebral venous and sinus thrombosis in adult patients. Eur J Neurol 2010;17:1229-35.
12. Caplan LR. Arterial occlusions: Does size matter? J Neurol Neurosurg Psychiatry 2007;78:916.

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