Cerebral venous thrombosis in autoimmune enteropathy

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Cerebral venous thrombosis is a potentially fatal neurological emergency. Both systemic and cerebral thromboses have been reported in common types of inflammatory bowel disease (IBD).\(^1\)\(^-\)\(^3\) Here we present a male patient with a diagnosis of autoimmune enteropathy, a rare autoimmune inflammatory bowel disease,\(^4\) complicated by cerebral venous thrombosis, whose thrombophilia screening revealed transient anti-thrombin III deficiency (ATIII), which resolved during remission of his bowel ailment.

Case report

A 37-year-old right-handed man with autoimmune enteropathy, based on small intestine biopsy showing absence of goblet cells and serum positivity for enterocyte antibodies, presented to an emergency room with left upper extremity weakness, left hemibody numbness, a severe headache and nausea. A non-contrasted head CT was normal and he was discharged home with a diagnosis of migraine.

Outpatient neurological evaluation 2 days later revealed a normotensive, afebrile, thin male with cushingoid facial features due to chronic steroid therapy. He had a mild left hemiparesis, left hemi-body numbness, left-sided hyper-reflexia, and positive left Babinski sign. Emergent MRI revealed increased T2 signal in a bifrontal, parasagittal, predominantly gyral distribution and subsequent MRV confirmed superior sagittal sinus thrombosis.

The patient was started on IV heparin and showed marked improvement within 24 hours. Total parenteral nutrition (TPN) was continued pre- and post-hospitalisation as part of the management of his autoimmune enteropathy. The autoimmune enteropathy itself was managed with a 1 gm IV bolus of methylprednisolone followed by 30 mg daily thereafter.

Laboratory work-up included a complete blood count, metabolic profile and complete thrombophilia screen. The only abnormality was low ATIII activity at 71% (normal 80-120%).

At 3-month follow-up his neurological exam was normal, but his autoimmune enteropathy remained very active. A repeat ATIII activity was low at 74%. Warfarin was continued. Six months after discharge he was started on infliximab and experienced a marked remission of his gastrointestinal (GI) symptoms with return to a regular diet, discontinuation of TPN, and resolution of diarrhoea.

At 9-month follow-up he had attained normal weight with essentially complete resolution of GI symptoms. His neurological exam remained normal and a repeat ATIII was normal at 89%. Warfarin was stopped. At 14-month follow-up he remained stable with normal neurological and GI function and a normal ATIII level. No further thrombotic events have occurred to date.
Discussion

Autoimmune enteropathy is a very rare IBD with onset typically in childhood and only recently a handful of adult onset cases were reported. Prior reports of an adult with any type of associated thrombosis or a child with associated cerebral thrombosis do not exist to the best of our knowledge. One single paediatric case of autoimmune enteropathy complicated by systemic thrombosis was found in the literature. Interestingly, no similar thrombotic complications are reported in non-IBD autoimmune condition affecting the bowels such as coeliac disease.

Thrombosis is, however, a well established complication of the commoner forms of IBD. Yet, the pathophysiology behind the association between IBD and thromboembolic complications is poorly understood. IBD, in general, does appear to be an independent risk factor for thrombosis and degree of disease activity appears to play an important role as risk of blood clot formation appears limited to the active disease phase.

Intestinal losses disturbing maintenance of important factors in the clotting cascade during active disease has been postulated. Various coagulation abnormalities are reported in IBD including increase in pro-coagulants and decrease in natural anticoagulant factors such as anti-thrombin III, protein S, protein C and TFP1.

This patient had transient acquired anti-thrombin III deficiency that resolved with the remission of the underlying intestinal disease. Some of the previously reported cases of thrombotic complications in IBD have also been noted to be associated with ATIII deficiency.

Primary ATIII deficiency is a rare inherited thrombophilic disorder. Acquired ATIII deficiency is described in certain clinical situations like consumptive coagulopathy, sepsis and nephrotic syndrome and its clinical significance in the setting of an inflammatory disease remains unclear. Attempts to replace purified human ATIII in patients with acquired ATIII deficiency have not lead to reduction of thrombosis risk. Therefore, transient ATIII deficiency is probably more of an association rather than a causative factor in IBD related thrombosis leaving the actual cause yet to be determined.

The transient nature of the AT III deficiency noted here stresses the importance of repeating the levels after a few months, especially once inflammatory bowel symptoms go into remission, in order to avoid unnecessary long-term anti-coagulation. In general, the duration of the anti-coagulation is probably most appropriately gauged according to IBD disease activity as manifested by clinical symptomatology. This case also emphasizes the importance of suspecting the possibility of cerebral sinus thrombosis in patients presenting with headache with or without focal neurology in the setting of autoimmune enteropathy and other IBDs.

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References:


