

Retinopathy Secondary to Disseminated Intravascular Coagulation

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Abstract: ***Introduction:** Retinopathy is a frequent finding in anaemic and thrombocytopenic patients. Disseminated intravascular coagulation (DIC) in a acute alcoholic liver disease is a rare cause of retinopathy. **Case report:** A 40 years old, alcoholic male patient presented to us with 4 days sudden onset diminished vision in both eyes (B.E.). Ocular examination showed bilateral retinopathy with haemorrhages. Investigations revealed megaloblastic anaemia and thrombocytopenia complicated with DIC secondary to alcoholic liver disease. He was treated with heparin, packed red cells and platelet concentrates. On follow up with the improvement of his blood profile the retinopathy completely resolved. **Conclusion:** Extensive investigations should be done for patients with retinopathy related to blood disorders to find the exact cause .A combined approach with the treating physician is needed to effectively manage such patients. Prognosis of retinopathy such as in our case is usually good with the correction of the platelet count and the haematocrit levels.*

Keywords: Anaemia, retinopathy, thrombocytopenia, disseminated intravascular coagulation

1. Introduction

Disseminated intravascular coagulation (DIC) is a reflection of an underlying systemic disorder which affects the coagulation system, simultaneously resulting in pro-coagulant activation, fibrinolytic activation, and consumption coagulopathy and finally may result in organ dysfunction and death.[1] Though septicaemia is the most common cause of DIC, several other conditions can also lead to it. Early diagnosis and prompt treatment backed by laboratory support can reduce the morbidity and mortality associated with it. Bleeding is a more common manifestation of DIC but most of the morbidity and mortality of DIC is due to microvascular thrombosis. There is no single test that would diagnose DIC, however, estimation of D- dimer levels appears to be the most sensitive and specific test.

Aisen ML et al believed that anaemia and thrombocytopenia are known complications of alcoholic liver disease. Retinopathy is a frequent finding in anaemic and thrombocytopenic patients, although it is often not significant clinically. [2]

FOULDS WS quoted that various ocular associations like hard exudates, cotton wool patches, frame-shaped haemorrhages, and Roth spots have been documented as anaemic retinopathy for many years. In addition, he reported that retinal venous tortuosity is directly related to severity of anaemia.[3]

We report a rare case of acute alcoholic liver disease complicated with DIC presenting with retinopathy.

2. Case Report

A 40 yr old male patient, known alcoholic since the past 15 yrs ,presented with 4 days onset of gradual painless loss of vision in both eyes (B.E.). His medical history was notable for being diagnosed with anaemia and thrombocytopenia and was admitted to a hospital and was being treated for the same when he experienced a decrease in vision. His Hb levels were 3.4 gms % ,platelet count was 43,000 cu.mm .On examination his B.C.V.A. was 6/12 in B.E. His anterior segment evaluation along with his intraocular pressures were normal. Dilated fundus examination showed multiple haemorrhages at the pre-retinal, retinal and sub-retinal levels in both eyes (Image 1).

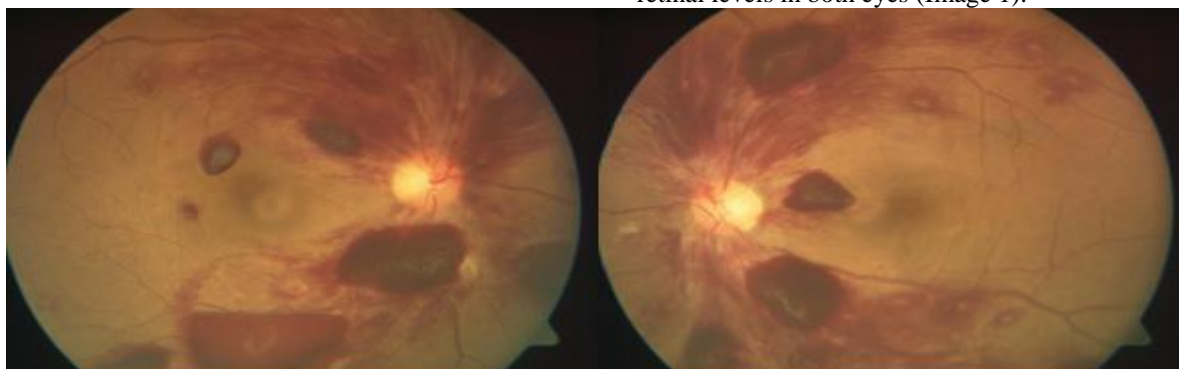


Image 1: DIC associated retinopathy in both eyes with multiple haemorrhages in pre-retinal, retinal and sub- retinal areas

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On further investigations of peripheral smear and bone marrow examination revealed Megaloblastic anaemia. Folate levels were 0.4 ng/dl and vitamin B12 levels were 65 pg/ml. His d-DIMER levels were elevated. Fibrinogen clotting activity was increased. His liver function test was abnormal. His dengue IgM and IgG antibodies, malarial parasites which were negative. HIV, HbsAg and HCV titres were also negative. A Diagnosis of retinopathy secondary to D.I.C. was made. He was treated with heparin, packed red cells and platelet concentrates. On examining 1 week later, his visual acuity had improved by 1 line and the retinal haemorrhages had started resolving. On subsequent follow up 2 months after his 1st visit, his V.A. had improved to 6/6 in both eyes

and the fundus picture showed complete resolution of haemorrhages (image 2). And the anaemia and platelet counts were also corrected with the improvement in the liver function test.

3. Discussion

Our case had multiple haematological abnormalities secondary to acute liver disease which had occurred due to chronic alcohol consumption.

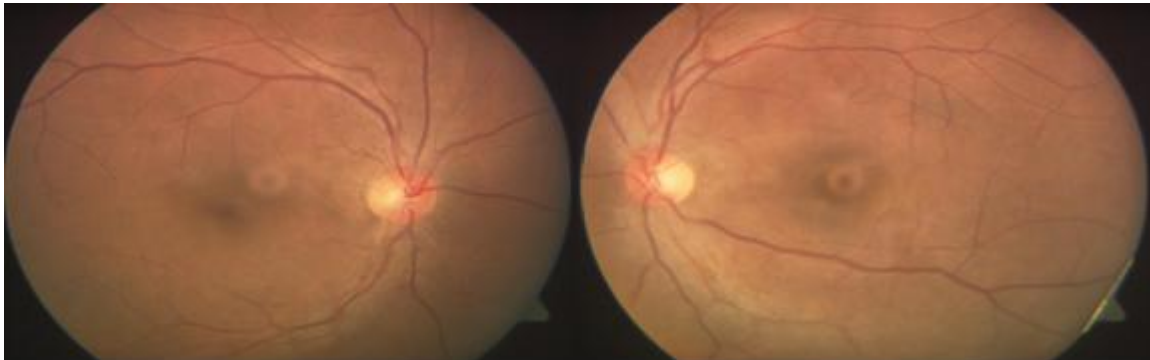


Image 2: Resolution of haemorrhages in both Eyes after treatment of D.I.C

Carraro MC et. al. in their study observed retinopathy in 28.3% of the patients as a whole, the presence of fundus lesions being closely associated with severe anemia (Hb < 8 g/dL) and severe thrombocytopenia (PLT < 50 x 10⁹/L). Among the patients with concomitant anaemia and thrombocytopenia, the incidence of retinopathy was 38%. [4]

In our patient megaloblastic anemia was caused by vitamin B12 deficiency, resulting from inadequate diet and alcohol abuse.

Rubenstein RA et al stated that retinal lesions can be observed more frequently in anaemic patients with concomitant thrombocytopenia.[5]

Horie Y et al in their study observed that the mortality of patients with severe alcoholic disease was high (66.4%). They suggested that patients with anaemia and other risk factors should, if possible, be treated at an earlier stage with an intensive treatment [6].

Our case illustrates a rare presentation of acute alcoholic liver disease complicated with DIC and that it must be kept in mind as a differential diagnosis for retinopathy with retinal haemorrhages.

4. Conclusion

Extensive investigations should be done for patients with retinopathy related to blood disorders to find the exact cause. A combined approach with the treating physician is needed to effectively manage such patients. Prognosis of retinopathy such as in our case is usually good with the correction of the platelet count and the haematocrit levels.

5. Acknowledgement

None

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