Original Research Paper

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Ophthalomology

VARIABLE PROFILES OF ANAEMIC RETINOPATHY: A CASE SERIES

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KEYWORDS :

INTRODUCTION

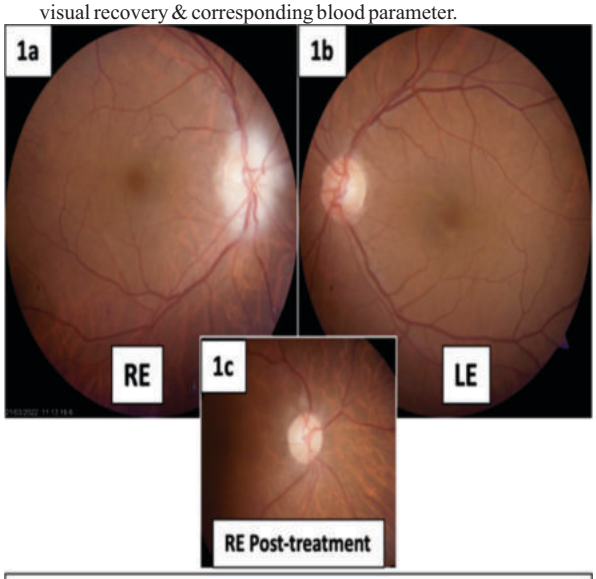
- Anaemia causes retinopathy in 28% of patients, especially when there is coexisting thrombocytopenia (38%). As the severity of anaemia increases, the risk of retinopathy increases, particularly when the haemoglobin (Hb) level is below 6 gm/dL.[1]
- A variety of pathologic changes occurring due to and associated with anaemia are implicated in the clinical features of anaemic retinopathy. Anaemia causes retinal hypoxia, which leads to infarction of the nerve fibre layer and clinically manifests as cotton wool spots. Retinal hypoxia also leads to vascular dilatation; increased transmural pressure owing to hypoproteinaemia; and microtraumas to the vessel walls, which cause retinal edema and hemorrhages. In many clinical situations, thrombocytopenia is associated with anaemia, and that leads to defective coagulation and hemorrhages.
- Other factors implicated in the pathology are venous stasis, angiospasm, increased blood viscosity (myeloproliferative disorders), hypotension (following hemorrhage), etc. Hypotension may lead to optic neuropathy.[2,3]

AIMS AND OBJECTIVES

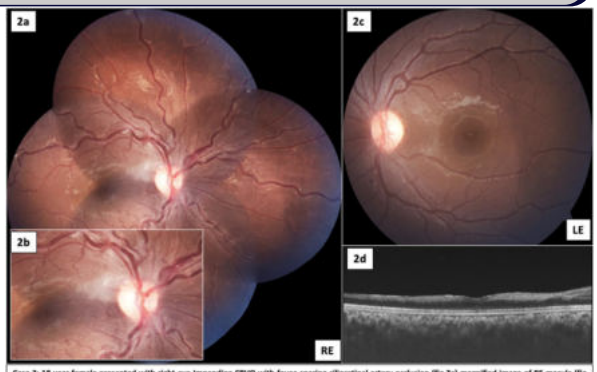
- To document the various clinical presenting patterns of anaemic retinopathy
- To evaluate their visual recovery and fundus changes on follow up.

METHODS

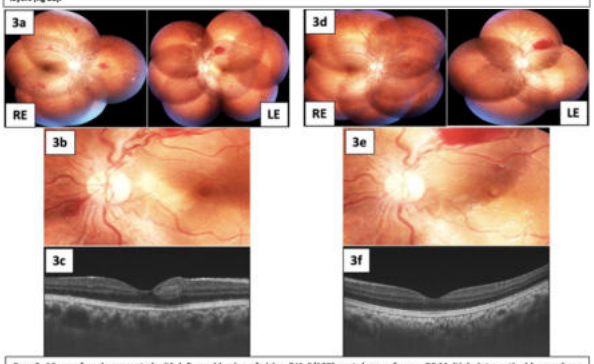
- This was a prospective observational case series of total 5 patient with a clinical diagnosis Anaemic retinopathy presenting at retina department Sitapur eye hospital.
- All patient underwent visual acuity testing , refraction, dilated fundus examination and if needed red free fundus, SD-OCT(spectral domain coherence tomography) Imaging. Routine lab investigation for evaluating blood parameter.
- On follow up at 1 or 3 months the patient were re evaluated for the visual recovery & corresponding blood parameter.



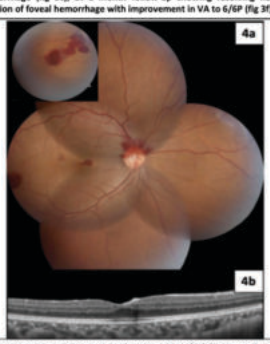
Case 1: 43yr male presented with right eye AION (fig 1a) VA PL+ with normal fundus in left eye (fig 2a) and post treatment with 3 days of intra-venous methyl-prednisolone (1gm/daily) showing resolution of disc edema but persisting pallor & poor visual gain - FC (fig 1c).



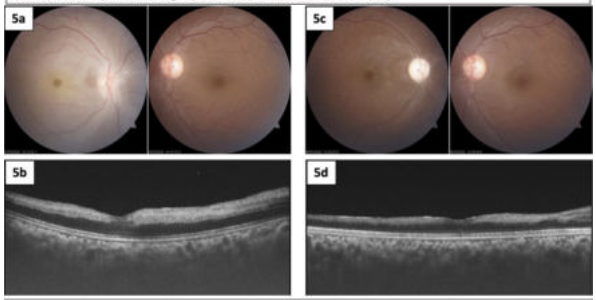
Case 2: 18 year female presented with right eye impending CRVO with fovea sparing cilioretinal artery occlusion (fig 2a) magnified image of RE macula (fig 2b) with good visual acuity – 6/9 with normal fundus in left eye (fig 2c) and RE OCT macula scan superior to fovea showing hyper-reflective inner retinal layers (fig 2d).



Case 3: 16 year female presented with left eye blurring of vision (VA 6/12P) post dengue fever – BE Multiple intra-retinal hemorrhage (fig 3a) with no clinically evident sub-foveal hemorrhage on high magnification fundus photo (fig 3b) but LE OCT macula confirmed Intra-retinal hyper-reflectivity s/o hemorrhage (fig 3c); at 1 month follow-up showing resolving hemorrhages in BE (fig 3d & 3e) & corresponding OCT showing resolution of foveal hemorrhage with improvement in VA to 6/6P (fig 3f).



Case 4: 27 year male presented with sudden onset right eye defective vision (VA 6/36) for last 19 days following dengue fever with RE disc hemorrhage, peripheral large blot & white centered hemorrhage and Sub-ILM bleed at fovea (fig 4a) & corresponding OCT macula confirming Sub-ILM bleed (fig 4b); Lab investigation confirmed severe anemia (Hb 5.5 unit) with low platelet count (49,000 unit); he was advised for vitrectomy with ILM Peeling for persistent sub-ILM bleed but he lost to follow-up.



Case 5: 15 year female presented with sudden onset right eye defective vision (VA PL+) with RE Central retinal artery occlusion & cherry red-spot (fig 5a) corresponding OCT macula showing hyper-reflective inner retinal layer with diffuse retinal thickening (fig 5b); Lab investigation & bone marrow evaluation confirmed diagnosis of T-cell lymphoblastic leukemia; and at 1 month follow-up RE showed pale optic disc with severely attenuated vessels(fig 5c) & corresponding OCT showing resolving retinal hyper-reflectivity with thinning (fig 5d).

RESULTS

- Present study retrospectively evaluated 5 patients of Anaemic retinopathy for underlying cause and visual acuity gain on follow-up.
- Most common presentation were Intra-retinal haemorrhage – blot & flame shaped hemorrhage (40%) followed by Acute anterior ischaemic optic neuropathy, Impeding central retinal vein occlusion with fovea sparing cilio-retinal artery occlusion, central retinal artery occlusion, and disc haemorrhage (20% each).
- Grades of retinal haemorrhage were associated degree of anaemia & low platelet counts.
- Poor prognostic factors include Poor visual acuity at presentation, presence of relative afferent pupillary defect at presentation, disc involvement, degree of anaemia & low platelet count.

DISCUSSION & CONCLUSION:

- Rubenstein and Yanoff showed that retinal abnormalities are increased in thrombocytopenia.[4]
- Holt JM and Gordensmith studied 63 patients with anaemia and noted that flame-shaped haemorrhages were the commonest type of haemorrhages.[5]
- Lang GE et al reported that anaemic manifestations are uncommon in eye adnexa (like subconjunctival haemorrhage and lid oedema).[6]
- Merin S and Freund have found that in severe anaemia the retinal haemorrhages were found in 31.8% of patients, while in moderate anaemia it was found in 13.3% of patients.[7]

CONCLUSION:

Anaemic retinopathy is a well-known entity with variable presentation & have usually good prognosis. But patients with poor VA at presentation & presence of severe retinopathy & low platelet counts might pose as poor prognostic factors.

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