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RESEARCH ARTICLE

A RARE CASE REPORT : MACULAR HAEMORRHAGE AS A COMPLICATION OF MEGALOBLASTIC ANAEMIA

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Abstract

We report a case of 17-year-old female patient with sudden, painless, non progressivediminished vision in both eyes (L>R)(best corrected visual acuity in right eye- 6/18 and left eye – 3/60) . She was on a strict vegetarian diet for a long time. The ophthalmological evaluation revealed bilateral pallor and retinal haemorrhages. She was diagnosed to have severe megaloblastic anaemia secondary to nutritional deficiency with associated anaemic retinopathy.After treatment with intramuscular B12 supplementation, dramatic resolution of retinal haemorrhages and improvement in visual acuity was observed after 6 weeks .This case documents the rare occurrence of bilateral sub internal limiting membrane haemorrhages with megaloblastic anaemia with thrombocytopaenia and other retinal features of anaemic retinopathy.

Introduction:-

Megaloblastic Anaemia (MA) encompasses a heterogeneous group of anaemiascharacterized by the presence of large red blood cell precursors called megaloblasts in the bone marrow.This deficiency impairs DNA synthesis, resulting in the formation of abnormally large red blood cells. {1}As a consequence of impaired DNA synthesis, cell maturation becomes defective, causing more of mature red blood cell precursors to be destroyed in the bone marrow before they can enter circulation. Consequently, immature cell precursors enter the bloodstream, manifesting as large and dysfunctional cells.{1}

The impact of megaloblastic anaemia on retinal involvement in a female patient was investigated. Additionally, written informed consent was obtained from the participant prior to conducting the study.

Case:

A 17-year-oldgirl patient diagnosed with megaloblastic anemia referred to eye department in HIMS Varanasi 3 days after her hospital admission in pediatrics department at HIMS Varanasi. Patient had presented with complaint of high fever since past 1 week which was insidious in onset,high grade,intermittent,associated with chills,rigor,vomiting and fatigue.Patient has no history of ocular trauma,head trauma,hypertension,DM,vasculitis and blood dyscariasis.Patient was conscious and well oriented to time place and person,her vitals were reported

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normal with severe pallor.There was no clubbing , cyanosis,icterus or lymphadenopathy.The patient was investigated and thoroughly evaluated.

Blood Profile:
Her Hb came out to be 3.1 mg/dl.The other finding were low S.Fe i.e 42.4mg/dl andvit B12 <70 pg/dl , S.F.A is 14.30. PBS revealed hypercellular marrow marked erythrocytosis . Peripheral smear showed majority of cells were of erythroid series which were late and intermediate normoblast showing megaloblastic features. There were some of myeloid series showing normal maturation .Decreased count of megakaryocytes suggested megaloblastic anemia. WBS morphology had moderate leucopenia with relative lymphocytosis. RBS morphology showed anisopoikilocytosis, microcytes,schistocytes, tear drop, target cells, elliptocytes,spherocytes with few features of hemolysis

Direct coombs test came out to be negative
WBC- 2.8/cmm
RBC-1.03 million/cmm
PLT-54000 lakh/cmm
Differential count:-
Neutrophil - 49%
Eosinophils - 3%
Basophils - 0%
Lymphocytes - 42%
Monocytes - 6%.
Packed cell volume - 14 vol%
MCV-126.3 %
MCH-40.40 %
Clotting time - 5 min 40 s
Bleeding time - 2 min 10 s
HIV screening test (tri-dot method): Nonreactive
Plasmodium vivax and Plasmodium falciparum: Negative.
VDRL test: Nonreactive
Lipid profile: Normal
Chest X-ray: Normal
Ultrasound abdomen: Normal

Ocular Examination
Complete ocular examination was conducted ,BCVA came out to be 6/18 for the RE and 3/60 for the LE. . Pupillary responses and intraocular pressure were normal. IOP noted was 16 and 18 mm Hg , Both eyes.There was bilateral conjunctival pallor , Iris had normal pattern with AC depth normal.

Fundus Evaluation:
Further dilated fundus evaluation was performed with indirect ophthalmoscopy. There were evidential changes suggestive of anemic retinopathy binocularly. Disc was vertically oval, hyperemic with CDR 0.4:1,FR dull and A:V ratio - 2:3 and Tortuosity of vessels were seen in both eyes.

At presentation , dense retinal and sub internal limiting membrane hemorrhages involving the macula associated with Roth spot were seen in the left eye where as another hemorrhagic patch was observed in the right eye at the inferior arcade.

Optical coherence tomography showed bilateral sub-internal limiting membrane macular hemorrhage.

Treatment:
Patient received blood transfusion and vitamin B12 supplementation. After 6 weeks of treatment , her best corrected visual acuity improved to 6/6 in the right eye and 6/9p in the left eye and her Hb noted was 9.3 g%.

Fundus examination also showed resolution of retinal hemorrhages almost completely in both the eyes.

Fig1 : Day 1 : Right eye showed retinal and sub internal limiting membrane hemorrhages sparing macula with Roth spots .

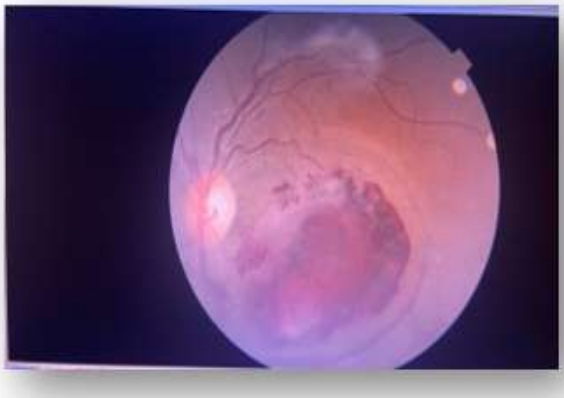

Fig 2:Day 1 : left eye depicted dense retinal and sub internal limiting membrane hemorrhages involving the macula associated with Roth spots .

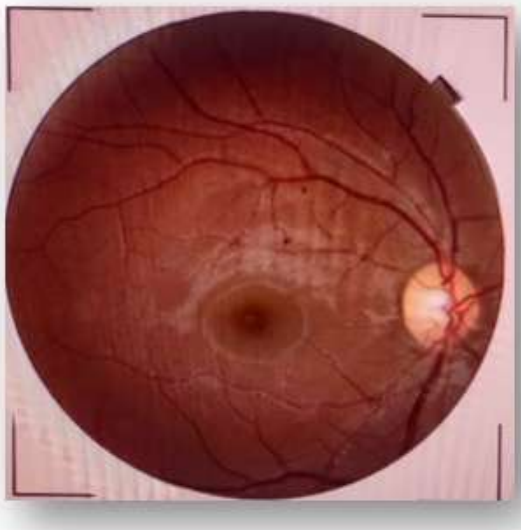

Fig 3: After 6 weeks :Right eye with resolved haemorrhages

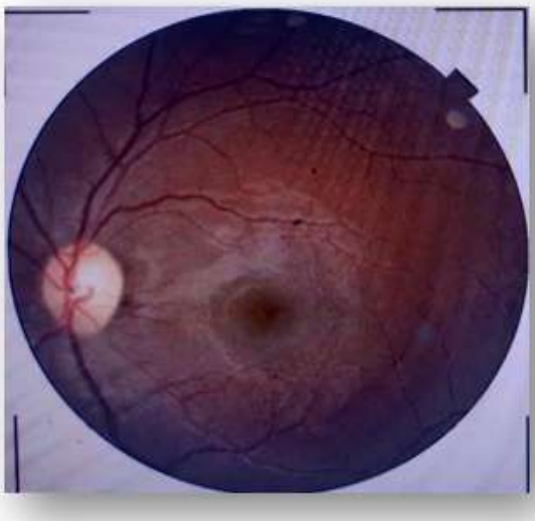

Fig 4: After 6 weeks :Left eye shows resolved haemorrhages

Discussion:-

In 28.3% of patients, anaemia causes retinopathy, especially when thrombocytopenia is a co-existing factor.{2}. The commonest ocular feature noted with anemia is pallor , and The cutoff value of about <8gm/dl and platelet count <150 *109/lit was found to be associated with funduslesions. The manifestation are nonspecific and includes presence of hemorrhages in all layers of retina and choroid , Roth spots,hard exudates , cotton wool spots, changes in retinal vessels,disc oedema and disc pallor.

We diagnosed megaloblastic anemiaas a cause of bilateral sub internal limiting hemorrhage.{3} In most Cases ,only treatment of underlying etiology is neededand retinopathy generally resolves on its own.

Result:-

The Case was rare and documented with bilateral sub internal limiting membrane hemorrhages with and without macular sparing in the diagnosed case of megaloblastic anemia with thrombocytopenia.

The hemorrhages regressed spontaneously without the treatment.

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Nil.

Conflicts Of Interests
There are no conflicts of interest as such.

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