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ANEMIC RETINOPATHY PRESENTING AS THE FIRST MANIFESTATION OF NUTRITIONAL ANEMIA.

Ophthalmology

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ABSTRACT

PURPOSE: To report a case of Anemic retinopathy presenting as the first manifestation of nutritional anemia. **METHODS:** A Retrospective Case Report. **RESULT:** A 23 year old female presented to our outpatient Department with complain of gradual non progressive decreased vision in the Right eye (RE) of one week duration. Family and Medical history was unremarkable. On examination, her Best Corrected Visual Acuity (BCVA)in the Right eye (RE) was 20/80 and in the Left eye (LE) was 20/20.Anterior segment findings were unremarkable, except for marked conjunctival pallor. Fundus examination showed the presence of pre retinal hemorrhages at macula in the RE and multiple Roth spots in LE. Systemic and laboratory investigation confirmed diagnosis of Nutritional anemia. She was treated with packed cell transfusion with intravenous vitamin B12 injection for one week then every week for 1 month and then was advised for monthly injection for 6 months. Iron supplementation was also instituted. Her hematological parameters improved. The vision in the RE had also improved to 20/60 with the pre retinal hemorrhage showing signs of resolution. At one month follow up, her vision improved to 20/30 with resolution of the pre retinal hemorrhages and stabilization of hematological parameters. **CONCLUSION:** Nutritional deficiency in developing countries can lead to occurrence of anemic retinopathy. This case, may represent just drop in the bucket, and hence calls for establishment of strict protocols for screening in order to identify cases of nutritional anemia in developing countries and mandatory fundus examination of the identified subjects for anemic retinopathy. This report also concludes the fact that despite the apparently alarming vision loss and retinal changes, anemic retinopathy does not need any specific treatment other than systemic management.

KEYWORDS

INTRODUCTION

Anemic retinopathy is usually asymptomatic with varied ocular presentations that include[1]:Conjunctival pallor, Subconjunctival haemorrhage, Haemorrhages in all layers of retina, Roth spots, Hard exudates, cotton wool spot, venous tortuosity, attenuated arteries and Disc edema.

We report a case of a patient who presented with diminution of vision due to pre retinal hemorrhage who was diagnosed with nutritional anemia and showed signs of resolution and improvement in vision with within a month of correction of the underlying systemic condition.

CASE REPORT

A 23 year old female presented to our outpatient department with a complaint of diminution of vision in the Right eye (RE) of one week duration which was gradual and non-progressive in nature. Family and medical history was unremarkable. On examination, her Best Corrected Visual Acuity (BCVA)in the Right eye (RE) was 20/80 and in the Left eye (LE) was 20/20.There was marked conjunctival pallor in anterior segment findings with rest being unremarkable. Fundus examination showed the presence of pre retinal haemorrhages at macula in RE(figure 1.A) and multiple Roth spots in LE(Figure 1.B)

Figure 1.A: Fundus photograph of Right eye with pre retinal hemorrhage at macula.

Figure 1.B: Fundus photograph of Left eye with flame shaped hemorrhages and multiple white centered roth spots.

The intraocular pressure in Both the eyes (BE) was 14 mmHg. Diagnosis of nutritional anemia was made which was confirmed by Systemic and laboratory investigation (Table 1)

TABLE 1-laboratory investigations

Haemoglobin	4.2gm%
Haematocrit	12%
RBC count	1.1 million / cumm
Platelet	117000 / cumm
Total leukocyte count	5200 / cumm
MCV	106FL
MCH	36pg
MCHC	34gms/dl
Bleeding Time, Clotting Time, Prothrombin time	Normal
Peripheral blood smear report (Figure 2)	Moderate hypochromia, moderate anisocytosis, microcytes and macro ovalocytes, moderate poikilocytosis, hypersegmented neutrophils and thrombocytopenia
Vitamin B 12	28pg/ml

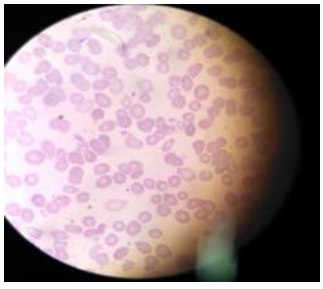

Figure 2 :peripheral blood smear showing hypochromia with anisocytosis, poikilocytosis,microcytes with tear drop cells and thrombocytopenia

This confirmed the diagnosis of a co-existent megaloblastic anemia with iron deciency anemia.

She was treated with packed cell transfusion with intravenous vitamin B12 injection for one week then every week intravenously for 1 month and then was advised for monthly injection for 6 months. Iron supplementation was also instituted.

Her haematological parameters gradually improved. The vision in the right eye had also improved to 20/60 with the preretinal haemorrhage showing signs of resolution. At one month follow up, her vision improved to 20/30 with resolution of the preretinal haemorrhage (Figure 2) and stabilization of hematological parameters.

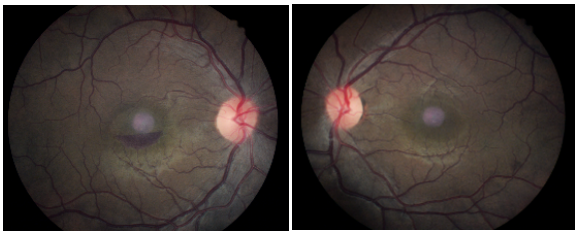

Figure 2: Fundus photograph at 1 month follow-up showing resolution of the haemorrhages in both the eyes.

DISCUSSION

Factors such as anoxia, angiospasm, venous stasis, and increased capillary permeability are responsible for pathogenesis of anemic retinopathy with a higher prevalence in patients with Hb< 6g/d and associated thrombocytopenia.[2,3,4] . Vitamin B12 deficiency in our case is also known to be associated with hemorrhagic manifestations as bleeding from skin, subcutaneous tissue, and even life threatening hemorrhages [5]. The only source of vitamin B12 being of animal origin, pure vegetarians are prone to develop this deficiency. Very few cases of retinopathy due to megaloblastic anemia have been reported from India[6] Megaloblastic anemia induced retinopathy has also been reported from Africa and in alcoholics due to the combined deficiency of folate and Vitamin B12.[7,8] The response to vitamin B12 in such cases is dramatic with rapid resolution of ocular hemorrhages and stabilization of hematological parameters

CONCLUSION

There is high prevalence of anemia in India and can have varied presentations, hence, the need for keen watch for such clinical situations by all medical professionals.Nutritional deficiency in developing countries can lead to occurrence of anemic retinopathy. This case, may represent just drop in the bucket, and hence calls for establishment of strict protocols for screening in order to identify cases of nutritional anemia in developing countries and mandatory fundus examination of the identified subjects for anemic retinopathy. This report also concludes the fact that despite the apparently alarming vision loss and retinal changes ,anemic retinopathy does not need any specific treatment other than systemic management**.**

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