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OCULAR MANIFESTATION OF ANEMIA IN TERTIARY HEALTHCARE CENTER

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Abstract

AIM: to study the ocular manifestation of Anemia in tertiary healthcare center

M&M: Study was conducted in department of Ophthalmology Index Medical College hospital research center Indore MP. Three hundred anemic patient between the age group 10-65 of both sexes were taken into the study with Hb level >10mg/dl.duration of the study was 18 months from February2020-July2021

RESULT: Conjunctival pallor was the commonest ocular manifestation of anaemia seen in all 98% cases. Retinal hemorrhagic abnormalities were the second commonest ocular manifestation seen in 35.33% cases. Diminution of vision was seen as the third commonest ocular manifestation seen in 34.0% of the cases

CONCLUSION: Most common ocular manifestations in patients with anemia were Conjunctival pallor and retinal hemorrhages among all the patient Whenever the patient Presents with conjunctival pallor needs to be investigated for anaemia. Early diagnosis of retinal manifestation may aid in early institution of treatment and thus early resolution of fundus changes.

Keywords: ocular, manifestation, anemia & tertiary.

Introduction

Anemias happen when the degree of solid red platelets (RBCs) or hemoglobin (an iron-restricting, oxygen-conveying protein inside RBCs) is excessively low. Contingent upon the reason, anemias can be delegated follows,

• Those happening because of insufficient creation of RBCs from the bone marrow (hypo proliferative)

• Those because of expanded blood misfortune (dying) or harm of red platelets (hemolysis); or

• Those because of anomalies in the creation of the platelets (inadequate erythropoiesis).

As the severity of anemia increases, the risk of retinopathy increases, especially when platelet count is low

Ocular findings can be classified as features common to all anemias or specific features due to specific etiologies.

In most cases, only treatment of the underlying etiology is needed, and retinopathy generally resolves on its own

Iron deficiency is the most common type of anemia. A deficiency of vitamin B12 is known as pernicious anemia. [1] In the eye, anemia can lead to transient retinal hemorrhages. These were first described by Ulrich in 1883 in association with gastrointestinal hemorrhage[2]

Material & Methods

The observational cross-sectional study was conducted in department of Ophthalmology Index Medical College Hospital Research Center, Indore M.P. Three hundred anemic patient between the age group 10-65 of both sexes were taken into the study with Hb level < 10mg/dl & the patient with Hb >10 mg/dl, with history of diabetes mellitus, hypertension, trauma, renal disease topical medication, recent eye surgery, ocular pathology, patient with CRVO, CRAO were excluded from the study, duration of the study was 18 month from February2020-July2021

Patients underwent the following investigations: Visual acuity, Refraction, Un-dilated slit lamp examination, Dilated fundus examination by indirect ophthalmoscopy & direct ophthalmoscope & slit lamp bio microscopy using 78 D, CBC (complete blood count), Topcon fundus camera for fundus photograph

Result

Table 1: Gender Wise Distribution of Case

SEX	MALE	FEMALE
NO OF CASES	138	162
Percentage	46%	54%

Table 2: Distribution as Per Grading of Anemia

Hb%	GRADES OF ANEMIA	No of cases	%
8-10	Mild(I)	46	15.3%
6-8	Moderate (II)	124	41.3%
<6	Severe (III)	130	43.3%

Table 3: Distribution of Patients According to Anemia

TYPES OF ANEMIA	N=300	PERCENTAGE
MEGALOBLASTIC ANEMIA	60	20%
IRON DEFICIENCY ANEMIA	152	50.6%
DIMORPHIC ANAEMIA	88	29.3%

Table 4: Distribution of Various Ocular Manifestation in Different Types of Anemia

		Types of Anaemia						
		Iron Deficiency Anaemia	**Megaloblastic Anaemia**	**Dimorphic Anaemia**	**Total**	**%**	**$\chi 2$ Value**	**p value**
Diminition of Vision	**Present**	7	33	62	102	**34.0%**	122.434	0.00
	Absent	148	27	26	201	**67.0%**		
Lid Edema	**Present**	35	17	0	52	**17.3%**	26.956	0.00
	Absent	117	43	88	248	**82.7%**		
Conjunctival Pallor	**Present**	149	59	86	294	**98.0%**	0.068	0.97
	Absent	3	1	2	6	**2.0%**		
Sub-Conjunctival H'ge	**Present**	0	8	16	24	**8.0%**	27.931	0.00
	Absent	152	52	72	276	**92.0%**		
Disc Pallor	**Present**	16	19	19	54	**18.0%**	14.113	0.00
	Absent	136	41	69	246	**82.0%**		
Disc Edema	**Present**	0	1	3	4	**1.3%**	4.987	0.08
	Absent	152	59	85	296	**98.7%**		
Retinal Haemorrhage	**Present**	13	23	70	106	**35.3%**	123.231	0.00
	Absent	139	37	18	194	**64.7%**		
Vascular Changes	**Present**	4	35	40	79	**26.3%**	92.275	0.00
	Absent	148	25	48	221	**73.7%**		
Macular Edema	**Present**	0	1	11	12	**4.0%**	23.741	0.00
	Absent	152	59	77	288	**96.0%**		

Table 5: Distribution of Various Fundus Abnormalities in Different Grades of Anemia

		Grades of Anaemia			Total	Percentage	$\chi 2$ Value	p value
		Mild (8-10 mg/dl)	Moderate (6 - 8 mg/dl)	Severe (<6 mg/dl)				
Disc Edema	**Present**	0	1	3	4	1.3%	1.821	0.40
	Absent	46	123	127	296	98.7%		
Disc Pallor	**Present**	2	5	47	54	18.0%	51.225	0.00
	Absent	44	119	83	246	82.0%		
Flame Shaped H'ge	**Present**	0	12	28	40	13.3%	16.085	0.00
	Absent	46	112	102	260	86.7%		
Dot Blot	**Present**	1	6	19	26	8.7%	10.557	0.01
	Absent	45	118	111	274	91.3%		
Subhyaloid H'ge	**Present**	1	2	12	15	5.0%	8.667	0.01
	Absent	45	122	118	285	95.0%		
Roth Spots	**Present**	1	1	23	25	8.3%	26.387	0.00
	Absent	45	123	107	275	91.7%		
Vascular Changes	**Present**	23	26	30	79	26.3%	15.833	0.00
	Absent	23	98	100	221	73.7%		
Macular Edema	**Present**	0	0	12	12	4.0%	16.346	0.00
	Absent	46	124	118	288	96.0%		

Discussion

Iron deficiency anaemia was the most common type of nutritional anaemia found in 50.6% of patient. In our review Conjunctival paleness was the commonest visual indication of paleness found in all 98% cases which was viewed as clinically critical. Retinal hemorrhagic anomalies were the second commonest visual indication seen in 35.33% cases which was viewed as clinically huge (P value=<0.001).Diminution of vision was viewed as the third commonest visual appearance seen in 34.0% of the cases which was viewed as clinically significant(p value=<0.001).In a concentrate by Shaheen N. et al[5] conjunctival paleness was the commonest visual indication of paleness seen in 74% cases, though, they observed that retinal anomalies were the second commonest visual sign saw in 16% cases. In a review, Satish S. et al[9], conjunctival paleness was the most well-known finding and was found in all patients as in accordance with our review. Lange et al[4] and Nusrat et al[5] additionally observed that conjunctival paleness and retinal hemorrhages were more normal in patients with pallor, Pragati et al[7]& Jitendra et al[8] likewise detailed a similar Other visual indication of weakness was observed included top edema, retinal anomalies like litten spot, Retinal blot hemorrhages, retinal nerve fibre layer haemmorhages, subyaloid Hemorrhages, vascular changes Lang GE et al[4] revealed that sickly appearances are remarkable in eye adnexa structure (like subconjunctival discharge, macula edema and so forth) Our concentrate additionally showed something very similar.

Among the retinal hemorrhagic changes found in patients with pallor retinal nerve fibre layer hemorrhages were generally regularly seen followed by retinal blot hemorrhages Suresh et al studied patient with anemia and found retinal nerve fibre layer hemmorhages were more followed by retinal Blot haemmorhages. Anoxia, venous balance, Angio fit and expanded vascular penetrability brings about retinal harm because of hypoxia prompting iron deficient retinopathy. Satish et al [9] & Shaheen et al [5] additionally revealed similar Fundus irregularities in patients with weakness increments with expanding seriousness of frailty. In Our review uncovered occurrence of retinal hemorrhages and size of retinal indications has direct relationship with seriousness of paleness which is measurably critical. Merin S. what's more Freund[3] have likewise observed that in serious iron deficiency, the retinal anomalies were seen as in 31.8%, while in moderate weakness, these were seen in just 13.3%.Nusrat et al[5] additionally observed that the retinal irregularities were more in extreme paleness (34.2%) than in moderate pallor (7.5%). Gentle paleness didn't uncover any retinal irregularity.

LIMITATION: Limitation of my study was we did not have the follow up of patients with retinal changes to look for resolution of changes after starting the treatment

Conclusion

Most common ocular manifestations in patients with anemia were Conjunctival pallor and retinal hemorrhages among all the patient Whenever the patient Presents with conjunctival pallor needs to be investigated for anaemia. Early diagnosis of retinal manifestation may aid in early institution of treatment and thus early resolution of fundus changes.

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