



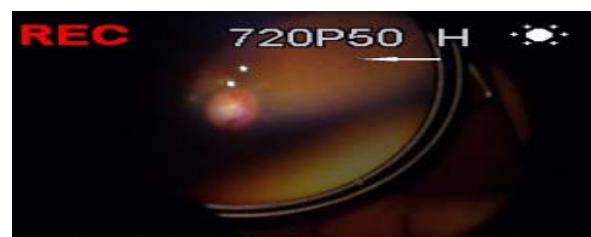
### A case report of Lipemia Retinalis

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**Abstract :** Hyperlipidemia is a well known risk factor leading to premature atherosclerosis of blood vessels. Lipemia retinalis is an unusual retinal manifestation of hyperlipidemia and is presumed to be directly correlated with the serum triglyceride level. We report a case of a three month old child who presented with lipemia retinalis and eventually diagnosed with familial hypertriglyceridemia.

**Keyword :** lipemia retinalis, familial hypertriglyceridemia, Hyperlipidemia. Hyperlipidemias are characterised by an increase serum cholesterol or triglycerides levels with disturbances in LDL or/and HDL cholesterol. The pathogenesis involves premature atherosclerosis of vessel wall leading to a multiorgan involvement viz., lesions of liver and pancreas, skin and sometimes ocular changes [1]. Lipemia retinalis is a rare retinal manifestation of hypertriglyceridemia [2–4]. It was first described by Heyl in 1880 [5]. Retinal vessels become cream coloured due to the scattering of light by the triglyceride-laden chylomicrons. Very high levels of triglycerides are essential for this condition as hypercholesterolemia alone does not produce this vascular appearance [2]. Other ocular features are Xanthelasma, Iris & Retinal Xanthoma, Lipid Keratopathy. In clinical practice, elevated serum triglycerides are most often observed in persons with metabolic syndrome, despite the fact that secondary or genetic factors can increase triglyceride levels. A three month old male child presented to paediatric care with vomiting, abdominal distention since six days. Child was referred for ophthalmic evaluation as a part of his routine work up. He was 2nd born child to non consanguineous parents with an uneventful antenatal period. He was born of a normal delivery at full term with a birth weight of 2.6 kg with a normal APGAR score. His developmental history was normal and was immunized for age. On ocular examination, child was fixing and following light with normal anterior segments in both eyes. Fundus examination in both eyes revealed a clear media and a normal disc. Both eyes vessels showed a creamy white colour. Macula and foveal reflex were normal. A provisional diagnosis of both eyes lipemia retinalis was made the ophthalmologist and child was subjected to further investigation.



Right eye Lipemia Retinalis



Left eye Lipemia Retinalis



Central nervous system, cardiovascular and respiratory systems were normal. Per Abdomen revealed a soft epigastric mass. Pylorus Narrowing was observed on barium meal and MRI abdomen showed a pyloric thickening consistent with a diagnosis of Idiopathic Hypertrophic Pyloric Stenosis. His peripheral smear showed a normocytic hypochromic anisopoikilocytosis. Lipid

Profile was done which showed a high serum Cholesterol (552 mg/dl) and a highly raised Triglyceride (2122 mg/dl) level. The patient diagnosed as Familial Hypertriglyceridemia with Lipemia Retinalis with the above findings. Patient was started on T. Fenofibrate 12mg OD and dietary management. Lipemia retinalis in this case was an incidental finding found out during routine ophthalmic evaluation which helped in diagnosing Familial Hypertriglyceridemia. This case is presented to stress the importance of fundus evaluation in systemic abnormalities

#### **Discussion**

Lipemia Retinalis is an asymptomatic condition that can appear when high levels of triglyceride are present in circulation. According to Nagra et al., lipemia retinalis is thought to be directly correlated with the serum triglyceride level. Typically, the retinal findings do not occur until the triglyceride level reaches 2500 mg per deciliter. The findings can fluctuate widely from day to day, depending on the triglyceride level [2]. Hypercholesterolemia alone does not produce retinal changes [12]. Patients with lipemia retinalis in typical cases maintain good vision, and fundus changes resolve when serum lipid levels are reduced. Treatment is essentially dietary management with restriction of fat and elevated intake of carbohydrates and protein. Fibrates, Omega 3 fatty acid supplements, statins are used for medical management. After initiation of treatment Lipemia retinalis usually resolves within 2 weeks to 2 months.

#### **References**

1. Nagra PK, Ho AC, Dugan JD. Lipemia retinalis associated with branch retinal vein occlusion. *Am J Ophthalmol.* 2003;135:539–42. [PubMed]
2. Park YH, Lee YC. Images in clinical medicine. Lipemia retinalis associated with secondary hyperlipidemia. *N Engl J Med.* 2007;357(10):e11. [PubMed]
3. Nogales SL, Grimes AL, Song HF. Lipemia retinalis: A combination of genetics and the American diet and lifestyle. *Optometry.* 2011 Nov 2; doi: 10.1016/j.optm.2011.05.008. [PubMed] [Cross Ref]Heyl AG.
4. Intraocular lipemia. *Trans Am Ophthalmol Soc.* 1880;3:55. Expert Panel on Detection Evaluation and Treatment of High Blood Cholesterol in Adults: Executive Summary of the Third Report of the National Cholesterol Education Program (NCEP) *JAMA.* 2001;285:2486–97. [PubMed]
5. Salazar JJ, Ramírez AI, de Hoz R, et al. Alterations in the choroids in hypercholesterolemic rabbits: reversibility after normalization of cholesterol levels. *Exp Eye Res.* 2007;84(3): 412–22. [PubMed]
6. Rafael H. Cerebral atherosclerosis causes neurodegenerative diseases. *Med Sci Monit.* 2010;16 (1):LE1–2.