Case Report

Lipemia Retinalis in a 25-day Old Neonate : A case report

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Abstract

A 25-day old neonate presented with complaints of greenish black stools. It was a full term LSCS delivery born of a non-consanguineous marriage. There was no history of any oxygenation/phototherapy. Birth weight was 3.5 kg and the baby had cried after birth. She was exclusively breastfed. On evaluation she had high blood levels of cholesterol and triglycerides suggesting a diagnosis of type IIb hyperlipidemia (familial combined hyperlipidemia). She was referred by paediatrician for ophthalmic examination. Funduscopy showed a manifestation of grade III lipemia retinalis. Physical examination revealed hepatosplenomegaly on per abdomen. She was treated with antibiotics, i.v fluids and dietary modifications. The blood reports of both parents showed lipoproteinemia and hypercholesterolemia.

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Introduction

Lipemia retinalis was first described by Heyl in 1880[1] and is caused by hypertriglyceridemia (serum triglycerides(TG)> 2500mg/dl). The fundus findings result from light scatter induced by the triglyceride-laden chylomicrons in the plasma.[2] It serves as a vital clinical sign of hypertriglyceridemia because asymptomatic triglycerides elevation may delay treatment of a potentially lethal metabolic disorder.[3]

Case Report

A 25-day old neonate with complaints of greenish black stools was referred to us by paediatrician for funduscopy. She was a full term baby born by LSCS and product of non-consanguineous marriage; with birth weight of 3.5 kg. The baby had cried after birth and there was no history of oxygen supplementation/phototherapy. She was exclusively breastfed. Her blood sample was creamy white in colour (Figure 1). The blood investigations showed a very high apolipoprotein (26.67g/L), cholesterol (1912mg/dl), triglycerides (44000mg/dl), LDL (631mg/dl) along with raised serum lipase (1791U/l), CRP (40.09 mg/l) and stool RBCs (20-30/hpf). Systemic examination revealed hepatosplenomegaly. Ophthalmic examination showed a normal anterior segment with creamy white vessels all over the fundus suggestive of grade III lipemia retinalis (Figure 2). The baby was treated with antibiotics, i.v. fluids, dietary modifications and restriction of breast feeding. She was lost to follow up. The blood reports of both parents showed lipoproteinemia and hypercholesterolemia which prompts the likely diagnosis of type IIb hyperlipidemia (familial combined hyperlipidemia).The constellation of findings prompted us to report this rare case as very few similar case scenarios have been reported in literature.

Discussion

Lipemia retinalis is an asymptomatic condition that can appear when high levels of triglycerides are present in the circulatory system. The retina's white milky aspect occurs when the plasma levels are near to 2000 to 2500 mg/dL or more.The fundus changes have been graded: grade I(early) - white and creamy aspect of the peripheral retina vessels (TG 2500-3499mg/dl); grade II(moderate) - the creamy color of the vessels extends towards the optic disc (TG 3500-5000mg/dl);grade III (marked) - the retina appears salmon pink and all vessels - arteries and veins present a milky aspect (TG > 5000mg/dl).[3,4] The treatment for these cases are restriction of fat in the diet (less than 10 g/day) and elevated intake of protein and carbohydrate. The ingestion of fat soluble vitamin supplements is also necessary. Exchange transfusion may be needed in severe cases.No more than 20 cases of lipemia retinalis have been reported till 2018 in infants less than 16weeks.[5] Funduscopy is of paramount importance in all cases of hyperlipidemia with creamy white serum in newborns to rule out lipemia retinalis and establish the diagnosis of specific dyslipidemias and plan for early management.

Figures 1: *Creamy white blood sample of the baby*

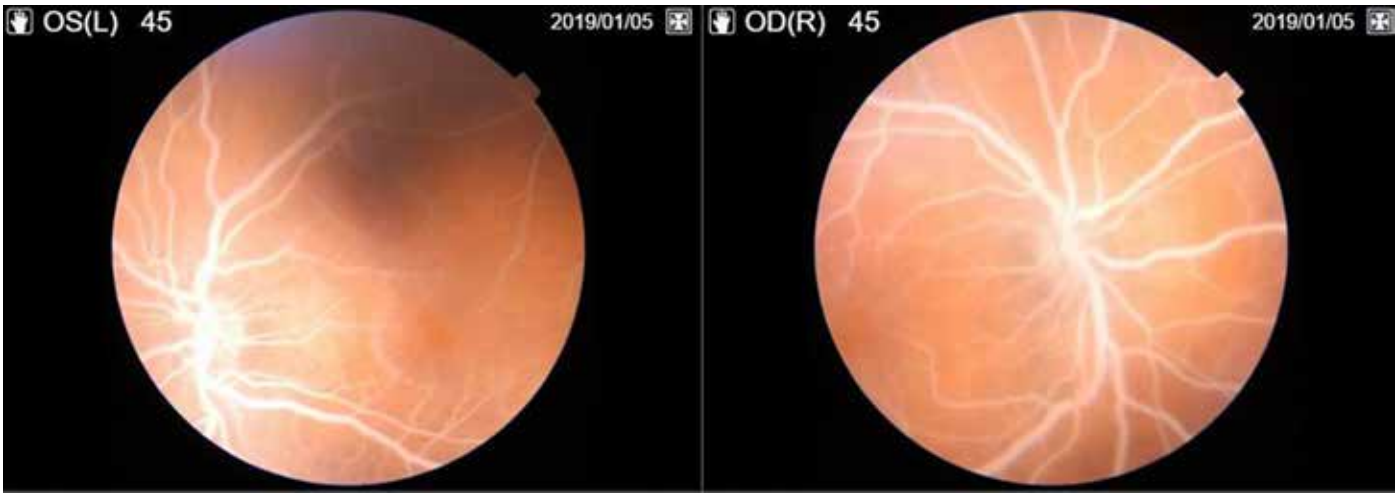

Figure 2: *Fundii of both eyes showing grade III lipemia retinalis.*

Table 1: Blood investigations of the baby

Test	Results	Biological Reference value
Serum Apolipoprotein A-1	26.67 g/l ↑	1.08-2.25 g/l
Serum Amylase	25 u/l	Upto 96 u/l
Serum Lipase	1791 u/l ↑	10-190 u/l
Serum Cholesterol	1912 mg/dl ↑	High>240
Serum Triglyceride	44000 mg/dl ↑↑↑	Veryhigh>1000
HDL	23.1 mg/dl	35-80
LDL	631 mg/dl ↑	85-130
TSH	1.09ul u/ml	0.270-4.20
C- Reactive Protein	40.09 mg/l ↑	<6.0
Stool RBC's	20-30/ hpf ↑	
TLC	17200cu.mm	
DLC	N32 L62 M6	

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