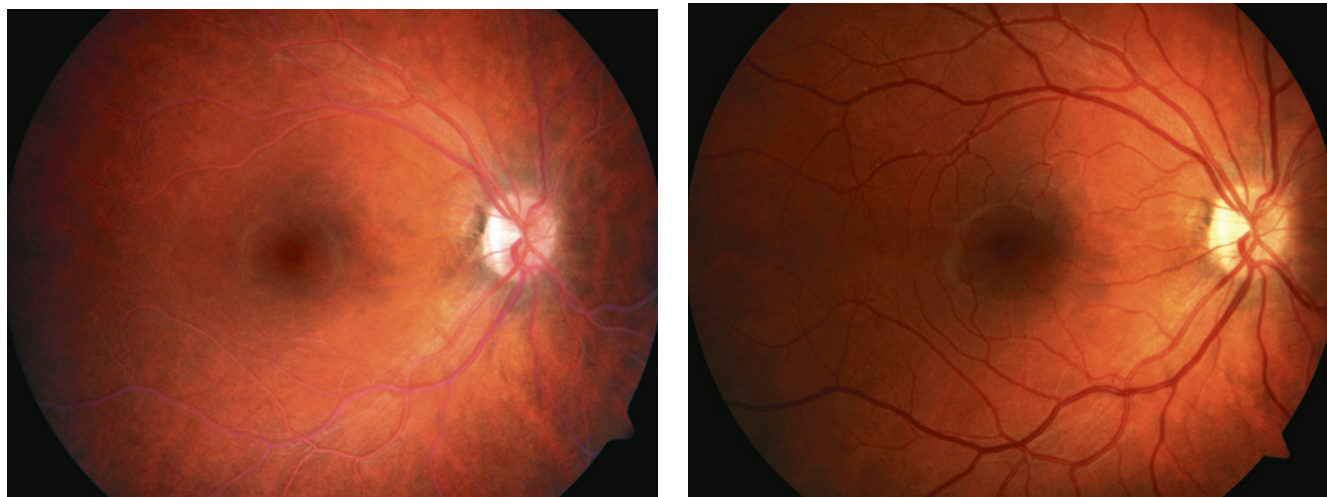


Pale pink blood vessels in the back of the eye



A man in his early 20s attended A&E due to an axillary wound that would not heal. He had been treated for epilepsy in childhood, but was otherwise in good health. In A&E he was found to have blood glucose levels of 21.2 mmol/l, and was therefore admitted to the medical ward with a diagnosis of new-onset diabetes. Blood tests while in hospital showed no acidosis, total cholesterol 14.5 mmol/l (2.9–6.1 mmol/l), triglycerides 71.4 mmol/l (0.45–2.60 mmol/l), HbA_{1c} 11.6% (4.0–6.0%) and C-peptide 2204 pmol/l (220–1400 pmol/l). A diagnosis of new-onset type 2 diabetes mellitus was made. However, measurement of anti-GAD and anti-IA2, which may be elevated in autoimmune diabetes, was not possible owing to highly lipaemic serum.

The patient had no vision-related symptoms but was referred to an ophthalmologist for routine examination given the possibility of diabetic retinopathy. The ophthalmological assessment showed normal visual acuity and normal conditions in the anterior segment. However, ophthalmoscopy also showed the fundus blood vessels to be a conspicuous creamy, pale pink colour (pictured left). Known as lipaemia retinalis, this is a rare condition that can occur with very high triglyceride levels (1). The patient had no family history of hyperlipidaemia, which was therefore initially interpreted as being secondary to hyperglycaemia/diabetes. Treatment was initiated with insulin, metformin hydrochloride with dose escalation and atorvastatin 40 mg × 1.

Lipaemia retinalis can be caused by both primary and secondary hyperlipidaemia. Hyperlipidaemia without triglyceridaemia does not give the same clinical picture. In addition to the characteristic blood vessel changes, the entire fundus can also be salmon pink in colour. This is thought to be due to the scattering of light when it hits chylomicrons. The earliest signs of this condition occur in the peripheral retina. When triglyceride levels increase, changes are additionally seen in the eye's posterior pole. The condition is reversible and quickly resolves upon normalisation of the hyperlipidaemia. It is thought that plasma triglyceride levels must be 2500 mg/dl, equivalent to about 30 mmol/l, for lipaemia retinalis to occur (1). Retinal perfusion is unaltered and patients have normal visual acuity, although electroretinography has shown reduced a- and b-waves in rod and cone responses.

A check-up almost eight months after discharge showed normalisation of retinal images (pictured right). Total cholesterol was then 3.9 mmol/l, HDL cholesterol 0.7 mmol/l, LDL cholesterol 2.5 mmol/l, triglycerides 2.1 mmol/l and HbA_{1c} 6.9%. The patient's only medication at that point in time was metformin hydrochloride 500 mg × 2.

Lipaemia retinalis is an important ophthalmological sign of a potentially serious metabolic disease, which ophthalmologists in particular should be aware of.

The patient has consented to the publication of this article.

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References

1. Zahavi A, Snir M, Kella YR. Lipemia retinalis: case report and review of the literature. J AAPOS 2013; 17: 110–1.

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