

RETINAL CHANGES IN SYSTEMIC DISEASE

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Hypertensive retinopathy

Classification of hypertensive retinopathy

◆ Keith–Wagner classification

- Grade 1, mild narrowing or sclerosis of retinal arteries
- Grade 2, moderate to marked narrowing or sclerosis with light reflex and arteriovenous crossing changes
- Grade 3, in addition, haemorrhages or cotton wool spots and
- Grade 4, in addition, swelling of the optic nerve head (papilloedema).

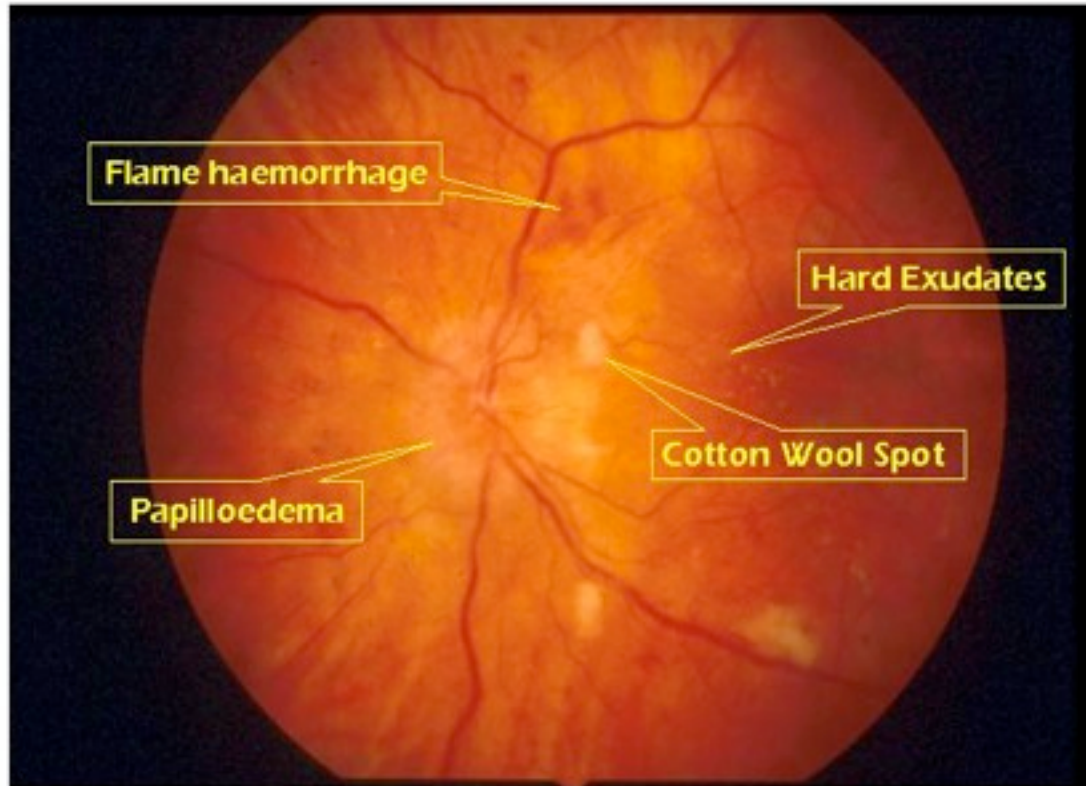
Important points

- Similar retinal appearances with haemorrhages and papilloedema can occur in severe anaemia, connective tissue disease, and infective endocarditis.

The ophthalmoscopic grading can be simplified into two workable groups:

- **grade A (non-malignant)**—arteriolar narrowing and focal constriction, which also correlate with age and general cardiovascular status as well as blood pressure;
- **grade B (malignant)**—linear flame-shaped haemorrhages, and/or exudates, and/or cotton wool spots with or without disc swelling.

Hypertensive Retinopathy - Grade 4





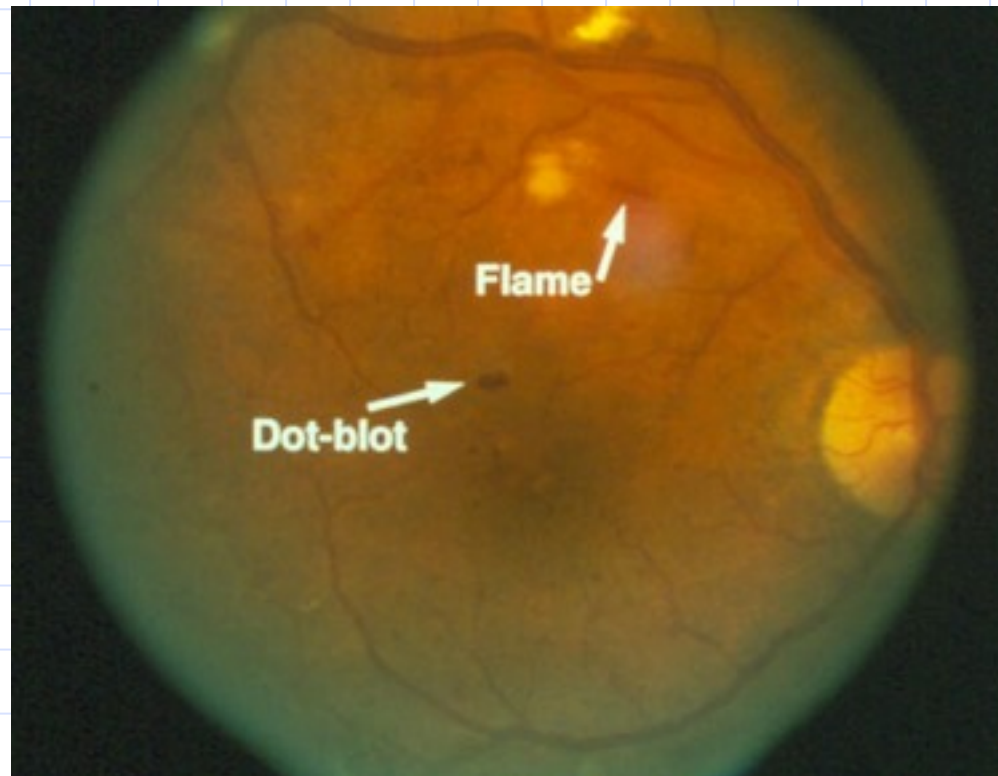
AV NIPPING

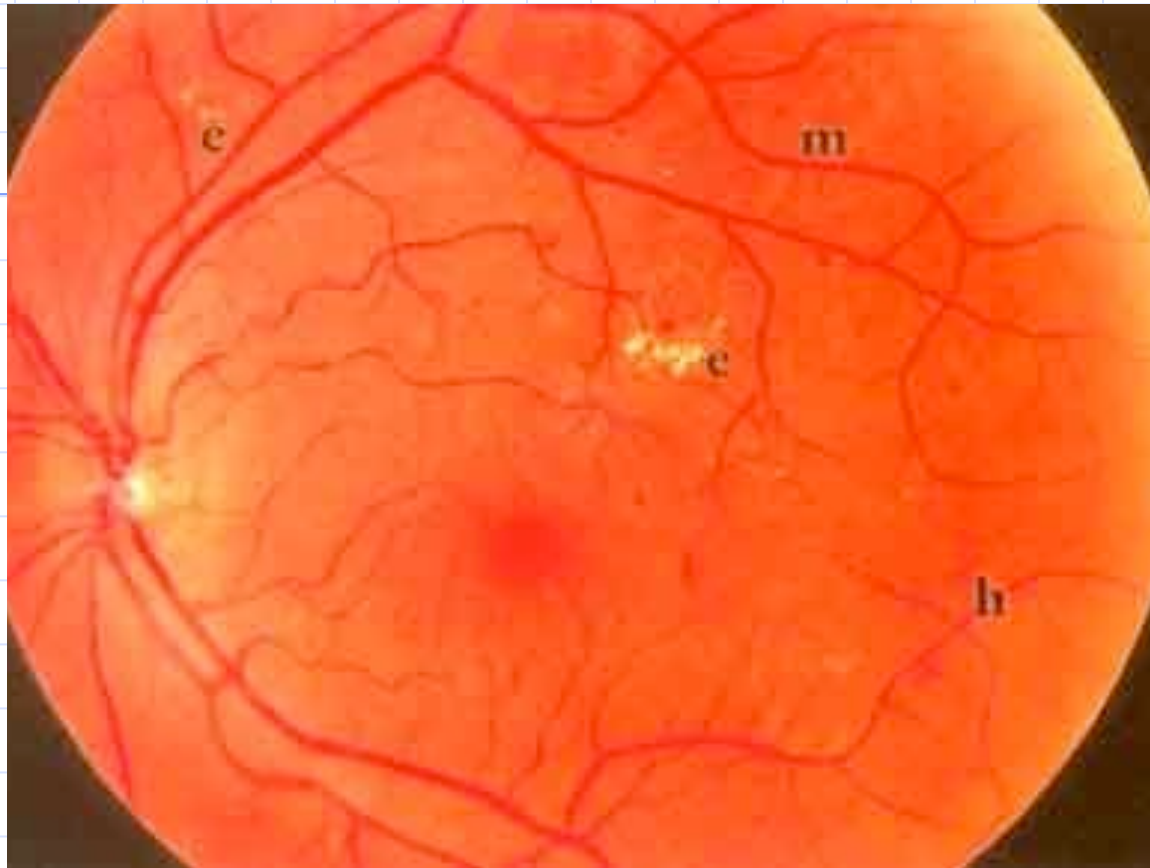


COPPER WIRING -Thickening and opacification of arteriolar walls caused by hypertensive arteriosclerosis

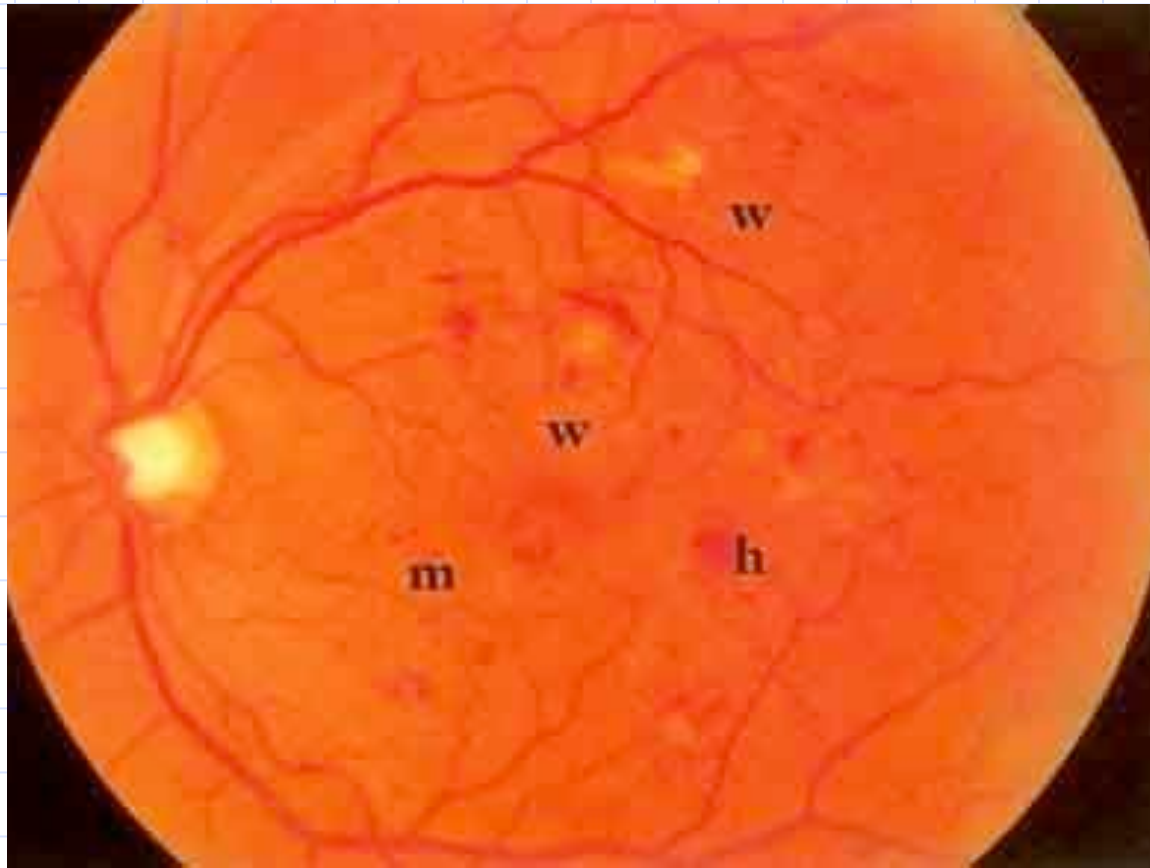
Diabetic retinopathy

nonproliferative





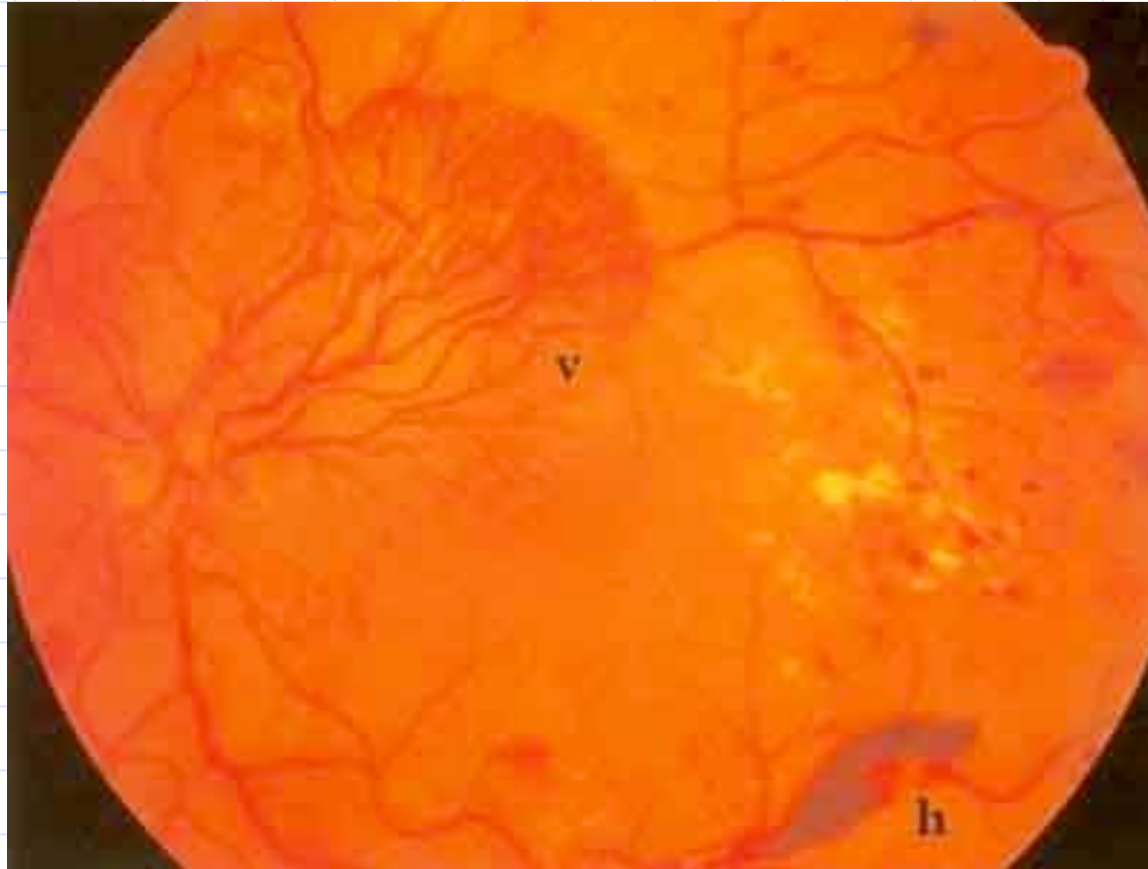
MILD NON-PROLIFERATIVE DIABETIC RETINOPATHY --
MICROANEURYSMS (m) AND DOT HAEMORRHAGES (h). ALSO
DEMONSTRATES MACULAR OEDEMA WITH A SMALL AMOUNT OF
LIPID EXUDATE (e)



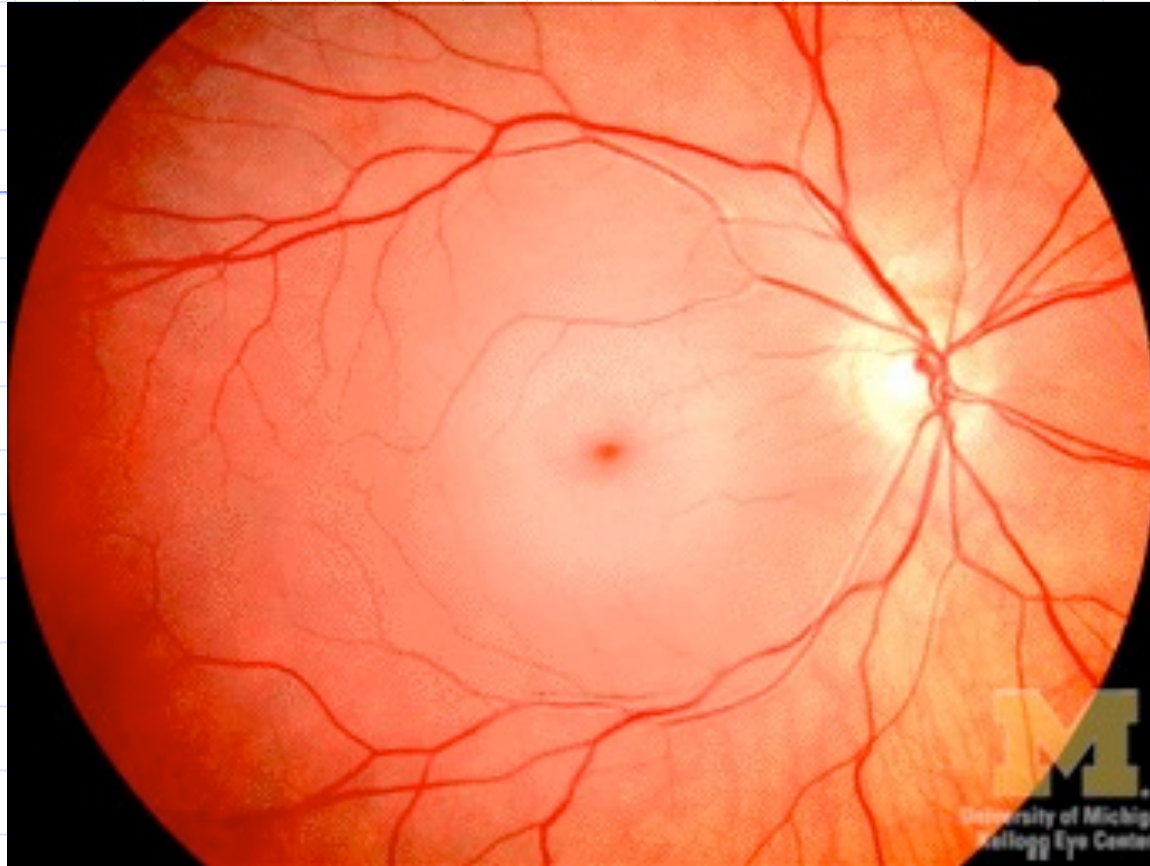
MODERATE NON-PROLIFERATIVE DIABETIC RETINOPATHY --
COTTON WOOL SPOTS (w) RETINAL HAEMORRHAGES (h) AND
MICROANEURYSMS (m)



SEVERE NON-PROLIFERATIVE DIABETIC RETINOPATHY --
INTRARETINAL MICROVASCULAR ABNORMALITIES OR IRMA (i)
VENOUS BEADING (b) OR VENOUS CALIBER CHANGES,
WIDESPREAD RETINAL ISCHAEMIA AND COTTON WOOL SPOTS

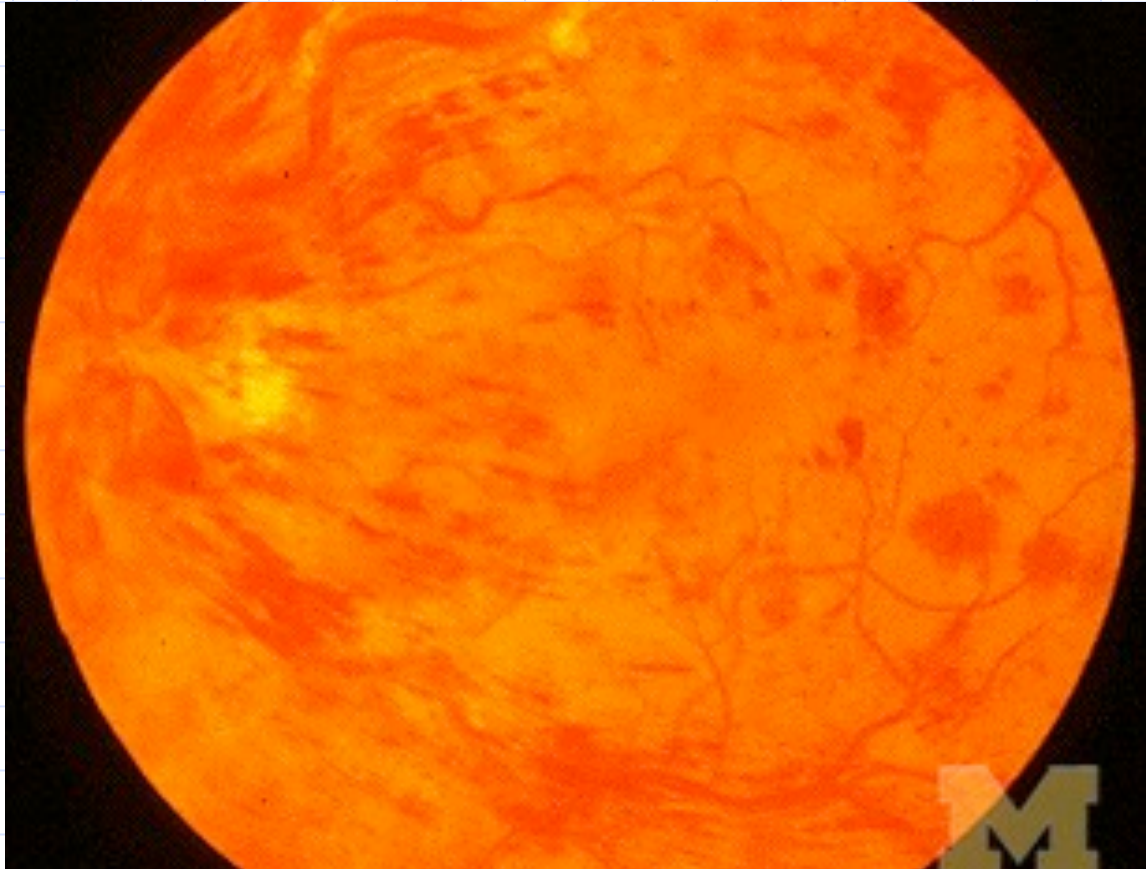


HIGH-RISK PROLIFERATIVE DIABETIC RETINOPATHY -- LARGE FROND OF DISC NEW VESSEL (v) AND PRE RETINAL HAEMORRHAGE (h).



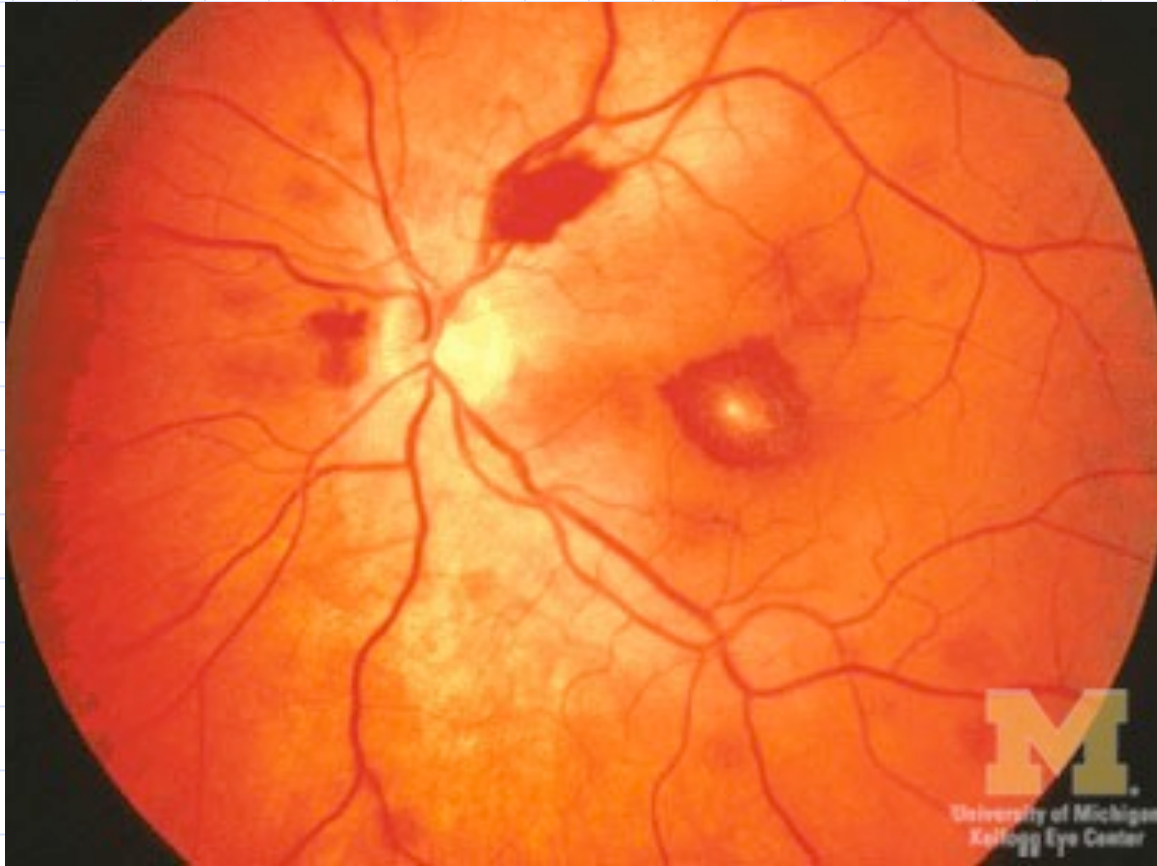
Retinal Artery Occlusion

milky white retina with a cherry-red spot at the fovea. These changes appear four or more hours after the visual loss



Retinal Vein Occlusion

As blood backs up onto the retinal surface, massive flame-shaped retinal hemorrhages create "the tomato catsup fundus."





Thank you