

Hypertensive retinopathy

Retinal changes depend on factors such as the level of the blood pressure and the state of the arterioles. The primary response to hypertension is arteriolar spasm and narrowing. This can occur more readily in younger patients with no sclerotic protection of their arterioles. Patients with essential hypertension and elderly normotensives develop compensatory arterial changes such as silver wiring and AV nipping. Retinal haemorrhages are unusual and suggest an associated retinal vascular accident.

Cotton wool spots, flame haemorrhages and disc swelling are more typical of malignant hypertension especially in young patients.

Classification

Modern practice classifies changes into two groups:

- compensated hypertensive retinopathy - grade 1 and 2 in older sources:
 - arteriolar changes - mild, generalised attenuation; increased tortuosity; increased opacity with resultant heightened light reflex - "copper" or "silver" wiring (Grade I)
 - plus constriction of veins at the arteriovenous crossings - "AV nipping" (Grade II)
- accelerated hypertensive retinopathy - grade 3 and 4 in older sources:
 - cotton wool spots (retinal infarcts due to pre - capillary closure), flame haemorrhages, and hard exudates - may surround the macula forming a partial or complete "star" (Grade III)
 - papilloedema and often, retinal oedema at the posterior pole of the eye. Visual impairment accompanies macula involvement. (Grade IV)

Complications

- Central and branch, retinal vein and artery, occlusion
- Ischaemic optic neuropathy
- Vitreous haemorrhage

Management

Successful hypotensive therapy will quickly resolve any haemorrhages and within a few weeks, any cotton wool spots. Hard exudates may take many months to clear. Papilloedema may resolve but potential optic atrophy is a serious sequelae.

Prognosis

The 5 year survival of patients with compensated hypertensive retinopathy is about 70%; that for accelerated hypertensive retinopathy, about 1%.