Answer: Left Non-arteritic Anterior Ischaemic Optic Neuropathy (AION)

Panel A shows a normal right fundus with a normal optic disc and retina, and the left fundus (Panel B) showing sectoral optic disc swelling with corresponding flame-shape haemorrhage.

The optic nerve head is supplied by short posterior ciliary arteries, which arise from the ophthalmic artery (a branch of the internal carotid artery). Ischaemia of the optic nerve head results from occlusion of posterior ciliary arteries. AION is the most common cause of acute optic neuropathy in the elderly. It is classified into arteritic and non-arteritic types. The incidence of non-arteritic AION in Singapore is 1.08 in 100,000 population. The arteritic AION, even though less common, is associated with worse visual loss and worse prognosis. The arteritic AION is caused primarily by giant cell arteritis. Rarely, other causes of vasculitis, such as polyarteritis nodosa, systemic lupus erythematosus and herpes zoster, may result in arteritic AION. Other causes of AION come under the non-arteritic category. Despite the aetiological differences between the two groups, the pathogenesis of optic nerve head infarction is similar.

The non-arteritic type is associated with sectoral optic disc swelling and pallor with or without flame-shape haemorrhage. The arteritic type is characterised by chalky white pallor of the optic disc, with severe visual loss.

Laboratory studies needed for the diagnosis include erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP), which help to differentiate between arteritic and non-arteritic types. Doppler ultrasound of the carotids and temporal arteries are also useful to support the diagnosis. Temporal artery biopsy may be needed to differentiate between the two groups. Differentiating the types of AION is crucial as approximately 40% with arteritic AION will develop vision loss in the other eye within days, weeks, months or years after the onset of symptoms in one eye.

In arteritic AION, high dose of systemic steroids (oral prednisolone 40mg to 60mg for two to four weeks followed by tapering) is the mainstay of management. Immunosuppressants are the second line of treatment. The patient should be co-managed by both the ophthalmologists and the rheumatologists. CRP and ESR should be done monthly for follow-up monitoring. Eyes with non-arteritic AION experience spontaneous vision improvement in 40% of the cases. Systemic steroids, on the other hand, were found to have significant beneficial effect on visual outcome. Treatment of the underlying cause (i.e. hypertension and hyperlipidemia) is also important to avoid similar event in the other eye.

REFERENCES