INTRODUCTION

Retinal artery occlusion (RAO) is an infrequent entity that presents with profound, painless, and permanent visual loss. It commonly affects elderly population with age more than 40 years and has an overall incidence of 0.85 per 10,000. The most common systemic association of retinal artery occlusion is cardiovascular disease such as atherosclerosis and thromboembolism. However, the incidence of this condition is not only rare in younger age group but also the risk factors such as cardiac emboli and systemic hypercoagulable states are usually associated.

The aim of reporting this case is to acquaint the health professionals about the successful management of RAO with Neodymium Yttrium Aluminium Garnet (Nd-YAG) laser embolysis.

CASE REPORT

A 24-year lady presented with 02 hours history of sudden altitudinal visual loss in her right eye which was neither associated with any specific pattern of progression nor with pain, redness, watering, photophobia, floaters, flashes of light, double vision, seizures, vertigo or tinnitus. She had no history of transient visual loss, glaucoma, hypertension, diabetes, heart disease, joint pain, hearing loss or any neurological illness. General physical and systemic examination of the patient was unremarkable. On ocular examination, visual acuity was 6/6 in both the eyes and there was visual field loss in superior quadrants along with relative pupillary defect in right eye. Posterior segment examination of right eye revealed cloudy swelling of retina over inferior half of the fundus with sparing of fovea (Figure 1). Retinal arterioles appeared to be slightly attenuated with an ill-defined whitish yellow embolus at the bifurcation of CRA.

As soon as the provisional diagnosis of RAO was established, ocular massage was started immediately along with topical antiglaucoma medications, sublingual glyceryl trinitrate and anterior chamber paracentesis to lower the IOP. After confirming the presence of embolus on fundus fluorescein angiogram (FFA), a successful YAG laser embolysis was performed with three mirror
Contact lens (Volk) starting with 1.0 mJ then increasing to 3.0 mJ with a total of 8 laser shots. Patient was urgently given referral to medical specialist, neurophysician, cardiologist, and daily follow-up with us. Visual field 30-2 was performed on 2nd day to document the visual field loss, which was repeated along with FFA after 01 week. There was restoration of circulation, marked improvement in the visual field (Figure 2) and the embolus was no more. Patient is under regular review to rule out any systemic association, however, all her investigations are unremarkable.

**DISCUSSION**

RAO is an emergency just like myocardial infarction and acute cerebral stroke, and needs to be treated as early as possible; but currently there has been no comprehensive protocol or guidelines for its management. Although various treatment modalities have been used to treat acute presentation of retinal artery occlusion such as immediate digital ocular massage, anterior chamber paracentesis, antiglaucoma medications, sublingual glyceryl trinitrate, carbogen and hyperbaric oxygen; but none of these therapies has shown a statistically significant positive outcome.3

Transluminal Nd-YAG laser embolysis (NYE) is one of the treatment options that has shown promising results in acute retinal artery occlusion by restoring the retinal circulation and improving the visual acuity.4 Some authors mentioned a dramatic improvement in visual acuity in up to 89% of the patients after NYE. However, others like Mason et al. concluded that the final visual acuity in cases of RAO is independent of the treatment used and merely depends upon the vision at the time of presentation.4,5

Most of the studies on retinal artery occlusion has discussed these treatment strategies in elderly population, which is the commonly affected age group. However, we noticed the effect of NYE in a young patient. In this case, it was found that retinal circulation improved immediately but cloudy swelling of retina took at least a week to resolve after successful YAG laser embolysis. Fundus fluorescein angiography and visual field assessment show dramatic improvement if NYE is successfully performed. Complications like subretinal, papillary, peripapillary or vitreous haemorrhage have been associated with NYE. However, fortunately we could not witness any such complication in our patient.

NYE is a safe and effective treatment and should be commenced as soon as possible in all those patients who have retinal artery occlusion with a visible embolus.

**REFERENCES**