

A rare case of branch retinal vein occlusion following Sirsasana

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ABSTRACT

Sirsasana is a type of headstand postural yoga in which the body is completely inverted. It is performed with or without wall support. In this position, the body is held upright supported by the forearms, while the crown of the head rests lightly on the floor. This is an advanced pose and should be attempted under the supervision of a qualified yoga instructor. The practice of Sirsasana is postulated to increase blood flow to the brain, improving memory, and other intellectual functions. It is also known to cause causes raised intraocular pressure, decompression retinopathy, glaucomatous visual field defects, central retinal vein occlusion, progression of glaucoma, optic neuropathy, and conjunctival varix thrombosis. We report a case of branch retinal vein occlusion following Sirsasana in a patient with systemic hypertension.

Key words: Branch retinal vein occlusion; Sirsasana; systemic hypertension.

INTRODUCTION

Yoga is an ancient Hindu way of uniting the body and mind. The practice of yoga has been advocated to relieve stress and also known to prevent the onset of many diseases. Practice of yoga has grown exponentially in recent years due to its various positive health benefits. However, if not practiced or supervised properly, it may cause various types of health ill effects. We are reporting one such case.

CASE REPORT

A 48-year-old male smoker, a poorly controlled hypertensive on irregular treatment presented with complaints of sudden painless diminution of vision in right eye (OD) associated with thin, black cob web-like floaters for 1 month. He does headstand postural yoga (Sirsasana) for 2 min/day which was not supervised. He attributes all the above symptoms developing following yoga. On examination,

his uncorrected visual acuity in OD was 6/12 and left eye (OS) was 6/9. Patients best corrected visual acuity in OD with -1.00 DS was 6/6 and OS with -0.75 DS was 6/6; with correction near vision was normal. Intraocular pressure was 16 mm Hg (OD) and 17 mm Hg (OS) with noncontact tonometer. The anterior segment of both eyes was within normal limits. Fundus (dilated) with indirect ophthalmoscopy in OD media was clear; disc was normal with 0.3:1C: D ratio, venous dilatation in superotemporal and inferotemporal quadrant with 2:4 A: V (Artero: Venous) ratio with no AV crossing changes and no venous sheathing, foveolar reflex was dull, a large preretinal hemorrhage 3 disc diameter (DD) from disc in inferotemporal quadrant and one preretinal hemorrhage 1 DD temporal to disc was present, neovascularization elsewhere was present in superotemporal quadrant and a sclerosed vessel in superotemporal quadrant [Figures 1 and 2], OS - was normal with no hypertensive retinopathy changes [Figure 3]. Amsler grid was normal for both eyes; optical

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Figure 1: Right eye fundus picture showing preretinal and flame-shaped hemorrhages

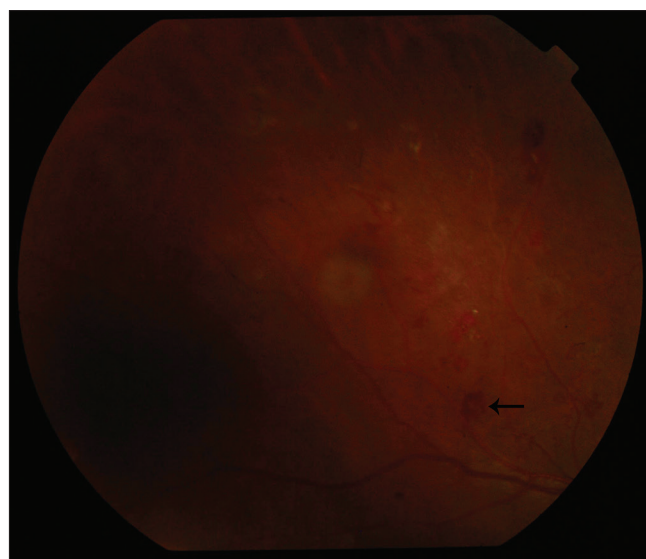


Figure 2: Right eye fundus picture shows neovascularization elsewhere and ghost vessel



Figure 3: Left eye normal fundus picture

coherence tomography showed incomplete posterior vitreous detachment, hyperechoic area causing backscatter suggestive of preretinal hemorrhage [Figure 4], OS was normal. Fundus fluorescein angiography of OD showed areas of blocked fluorescein suggestive of hemorrhage seen around inferotemporal arcade and close to the fovea, leaking areas along superotemporal arcade, and large areas of capillary nonperfusion along superotemporal quadrant suggestive of ischemia [Figure 5].

DISCUSSION

Sirsasana is a type of headstand postural yoga in which the body is completely inverted.^[1] In Sirsasana, about 400–500 ml of blood flows from the leg toward the head. Thus, blood pressure (BP) in the leg falls and the BP in

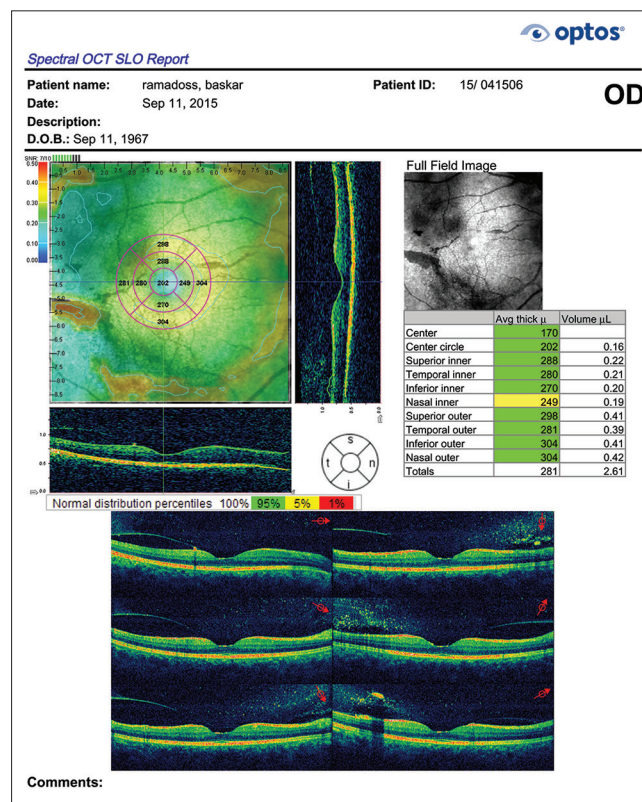


Figure 4: Optical coherence tomography of right eye showing hyperechoic areas suggestive of vitreous hemorrhage

the neck and arms increase by 20%. Damage to the brain due to the sudden influx of blood to the brain is prevented by a protective autoregulatory mechanism due to which the excess blood from the legs is diverted to the muscles that are active such as back, abdomen, and arms. Hence, the blood flow to the brain remains relatively constant. However, the autoregulation mechanism which safeguards



Figure 5: Right eye - fundus fluorescein angiography showing areas of blocked fluorescence around inferotemporal arcade and close to fovea, leaking areas along superotemporal arcade

the brain from surges of blood operates between mean BP of 60–160 mm Hg. Under these conditions of BP, there is no danger of damage to blood vessels with weak walls due to sudden dilatation of blood vessels in the brain. However, in hypertensive whose mean pressure is much higher than 160 mm Hg, the operation of the protective autoregulation is doubtful. Hence, head stand postural yoga is contraindicated in hypertensives.^[2] Out of the total complications due to Sirsasana, ocular side effects^[3] accounts to about 11.8%. It is also known to cause raised intraocular pressure,^[4] decompression retinopathy,^[5] glaucomatous visual field defects,^[6] central retinal vein occlusion,^[7] progression of glaucoma, optic neuropathy,^[8,9] and conjunctival varix thrombosis.^[10] Retinal vascular occlusive disease is a very rare entity reported following Sirsasana. We report the occurrence of branch retinal vein occlusion (BRVO) following Sirsasana in a hypertensive patient which is very rare. Moreover, hypertension is a clear contraindication for head down yoga postures such as Sirsasana, Meruasana, and Viparithakarni, and patients with hypertension should be warned against doing Sirsasana.^[10] Hence, complete medical examination should be done prior to any yoga, and it has to be supervised.

CONCLUSION

we are reporting a case of BRVO in a hypertensive patient who is a yoga practitioner for its rarity and for the potential

visual complications. Published literature advises against head stand in hypertensives. Analysis of a large population of yoga practitioners may provide definitive co-relation between the head stand and retinal venous occlusion. Moreover, prior medical evaluation is necessary to prevent yoga-related ill effects, which can tarnish the good image of yoga asanas.

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Conflicts of interest

There are no conflicts of interest.

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