

Acute Visual Impairment due to Non Ischemic Central Retinal Vein Occlusion Following Surgery for Fracture Femur: A Case report

S Philip, B Al Burwani, R Shenoy, D Deshmukh, M Saqueer, S Al Mahrooqi

Citation

S Philip, B Al Burwani, R Shenoy, D Deshmukh, M Saqueer, S Al Mahrooqi. *Acute Visual Impairment due to Non Ischemic Central Retinal Vein Occlusion Following Surgery for Fracture Femur: A Case report*. The Internet Journal of Ophthalmology and Visual Science. 2008 Volume 6 Number 2.

Abstract

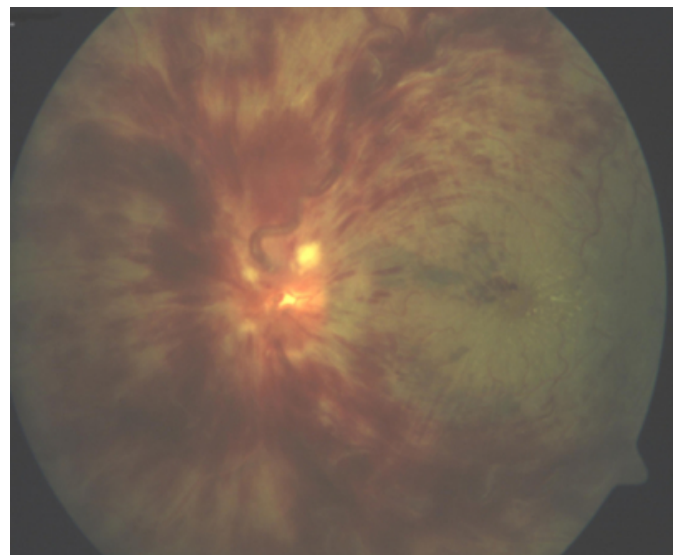
Visual loss following non ocular surgeries is an infrequent, but severe and disastrous complication, devastating to the patient and surgeon alike. Often, reported following major spinal and cardiac surgery, the most common causes are anterior and posterior -ischemic optic neuropathies, central retinal artery occlusion, central retinal vein occlusion, 6cortical blindness and miscellaneous (drug induced) . We report on a 21 year old otherwise healthy patient who presented with unilateral visual impairment in his left eye within 2 weeks post internal fixation surgery for fracture femur, and was found to have non ischemic central retinal vein occlusion.

CASE REPORT

A healthy young adult aged 21 years underwent an internal fixation for fracture shaft of left femur sustained in a road traffic accident, under general anesthesia. The total duration of surgery was 110 minutes. Postoperative recovery was uncomplicated and the patient was sent home after 3 days. Eight days later the patient presented to the ophthalmic emergency with history of blurred vision of 1 day duration in his left eye. Ophthalmic examination revealed a best corrected visual acuity of 6/6 in his right eye and 2/60 in his left eye. The anterior segment of right eye was normal. There was afferent pupillary defect in the left eye. Intra ocular pressure both eyes was 12mmHg. Extraocular muscle movements were normal. Fundus evaluation right eye revealed a normal looking fundus with cup disc ratio of 0.3. In the left eye, the disc was hyperemic with blurred margins; with soft exudates along the superior margin. The veins were dilated and tortuous. There were superficial hemorrhages scattered in the posterior pole and edema at the macula with vertical fan formation temporally (Fig-1)

Figure 1

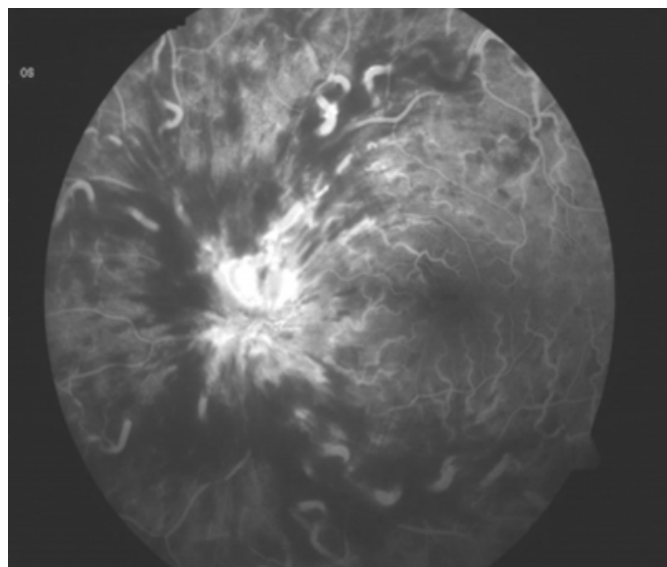
Figure 1: Fundus Picture of left eye showing central retinal vein occlusion



Fundus fluorescein angiography showed normal flow of dye in the right eye. In the left eye, the disc was hyperfluorescent. There were hypofluorescent areas corresponding with hemorrhages. (Fig 2).

Figure 2

Figure 2: Fundus Fluorescein angiogram of left eye



On Optical coherence tomography, the macula in the left eye appeared edematous with a thickness of 940 μm . He was clinically and hematologically investigated. Cardiovascular, respiratory system, central nervous examination was normal.

Lab investigation revealed normal complete blood count, differential count, RBC and platelet count, Hemoglobin level, Hematocrit, MCV, MCH, MCHC, Erythrocyte sedimentation rate, C reactive protein, Coagulation profile, protein-C, protein-S, antithrombin Factor, Factor III, resistant factor to protein C, plasma homocysteine levels, lupus factor, Blood glucose, lipid profile, electrolytes, rheumatoid factor, anticardiolipin factor, anti-DNA factor, antinuclear factor, serological tests for TORCH, retrovirus, VDRL, and Mantoux test. Sick cell test as negative.

Vascular catastrophes resulting in visual loss or impairment is not a novice following major surgeries and in older patients and is determined by preoperative, perioperative and postoperative risk factors.^(1,5) The most common cause is ischemic optic neuropathy, and the most common surgical procedure reported is prone spinal operations, though other surgeries were not free of the risk. Coexisting diseases

increase the risk of developing this complication. However, a high frequency of occurrence in younger, healthier patients has been noted suggesting the role of intraoperative physiologic variables such as edema formation and venous congestion as well as "normal" physiologic variation in ocular hemodynamics.^(1,3)

Retinal vein occlusion is a major cause of visual impairment in all age groups. It is more common in the elderly with an incidence of 0.8 to 2%. Systemic hematological and local factors contribute to its development. The precise pathology is formation of intra-luminal thrombus secondary to alteration in blood vessel wall and/or blood constituents resulting in stagnation of blood flow.^(4,5) Our patient noted visual disturbance in the left eye approximately 11 days after surgical intervention for fracture femur following a road traffic accident. He was found to have central retinal vein occlusion of the non-ischemic type in the left eye. Despite extensive investigations no etiological factors could be identified. Central retinal vein occlusions with no explainable etiological factors have been reported to occur in children but not in adults so far^(4,5). Internal fixation of fracture femur probably precipitated the development of the vein occlusion in this patient. Perioperative visual loss (POVL) due to central vein occlusion following internal fixation of fracture femur has not been reported before.^(1,2,3,4,5)

References

1. Lee LA, Roth S, Posner KL, Cheney FW, Caplan RA, Newman NJ, Domino KB. The American Society of Anesthesiologists Postoperative Visual Loss Registry: analysis of 93 spine surgery cases with postoperative visual loss. *Anesthesiology* 2006 Oct;105(4):652-59
2. Giuffr  G, Randazzo-P G, Palumbo C Central retinal vein occlusion in young people. *Documenta Ophthalmologica* 1992;80(2):127-132
3. Klein R, Klein BE, Moss SE, Meuer SM. The epidemiology of retinal vein occlusion: the Beaver Dam Eye Study. *Trans Am Ophthalmol Soc.* 2000;98:133-41.
4. Al-Dhibi H, Al-Saati A, Khan AO Central retinal venous occlusion in an otherwise-healthy child. *J AAPOS.* 2007 Apr;11(2):189-91.
5. Lee K, Chung YR, Lew HM. Central retinal vein occlusion in an otherwise healthy child. *Jpn J Ophthalmol.* 2008 Jul-Aug;52(4):341-2

Author Information

Santhosh Philip, M.S. (Ophth)

Department of Ophthalmology, Armed Forces Hospital

Badar Al Burwani, F.R.C.S.

Department of Ophthalmology, Armed Forces Hospital

Radha Shenoy, M.S. (Ophth),D.O.M.S.

Department of Ophthalmology, Armed Forces Hospital

Devadutta Deshmukh, M.S.(Ophth),F.R.C.S.

Department of Ophthalmology, Armed Forces Hospital

Mohammed Saqueer, M.S. (Ophth)

Department of Ophthalmology, Armed Forces Hospital

Sabreena Al Mahrooqi, MD

Department of Ophthalmology, Armed Forces Hospital