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Central Serous Chorioretinopathy presenting as sudden unilateral blurring of vision & metamorphopsia in a soldier

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Abstract : *Introduction: Central Serous Chorioretinopathy is an idiopathic serous neural retinal detachment in the macular region causing unilateral blurring of vision and metamorphopsia. Risk factors associated with CSR includes type A personality, physical strain, emotional stress, vasoconstrictive agents, endogenous hypercortisolism, smoking, systemic corticosteroids (oral, intranasal & inhaled), psychopharmacological agents, alcohol, oral antibiotics, oral antihistamines, Cushing Syndrome, pregnancy, dialysis, organ transplant and SLE. The treatment of CSR is essentially observation for 4 to 6 months as it is essentially a benign and self-limited disorder, and treatment by photocoagulation is seldom needed in non resolving cases.*
Case Report: A 35 years old male who presented with blurring of vision and metamorphopsia with associated risk factors of smoking, alcohol use and physical stress who was diagnosed as a case of CSR clinically and confirmed by fundus fluorescein angiography. The individual showed complete recovery of blurring of vision and metamorphopsia with modification of risk factors and early focal laser photocoagulation.
Conclusion: Early focal laser photocoagulation is beneficial keeping in view the morbidity associated with Central Serous Chorioretinopathy.

Keywords: *Blurring of vision, Ccentral Serous Chorioretinopathy, Laser Photocoagualtion, Metamorphosia.*

I. Introduction

Central Serous Chorioretinopathy (CSR) is an idiopathic serous neural retinal detachment in the macular region. It is typically seen in middle aged men between 20 to 50 years of age. It is typically associated with type A personality, physical strain, emotional stress[1], vasoconstrictive agents[1], endogenous hypercortisolism[2], smoking[3], systemic corticosteroids (oral, intranasal & inhaled)[4,5], psychopharmacological agents[5], alcohol[3], oral antibiotics[3], oral antihistamines[3], Cushing Syndrome, pregnancy, dialysis, organ transplant and SLE.

The basic pathogenic mechanism is accumulation of subneural retinal fluid in the macular region which originates from the choroid. The leakage of the fluorescein dye through an abnormal focal defect at the level of the retinal pigment epithelium (RPE) and its accumulation in the subneural retinal space seen clearly on fundus fluorescein angiography[6] (FFA).

CSR typically presents as unilateral metamorphopsia but patients may present with unilateral blurred vision, micropsia, impaired dark adaptation, colour desaturation, delayed retinal recovery time to bright light and relative scotoma. The average visual acuity in patients with CSC is 6/9 which may improve with hyperopic correction.

The diagnosis of CSR is clinical and is confirmed by FFA. Biomicroscopically, a transparent blister in the posterior pole between the RPE and neural retina is observed. Signs that suggests the presence of a retina-RPE separation include beam splitting, an increased distance between the retinal vessels and their shadows and an absent foveal reflex. FFA in CSR excludes other pathologies that may produce neural retinal detachments, the dye from the choroid leaks through a focal RPE defect and pools in the subretinal space. In more than 75% of patients this pooling occurs within 1 disc dioptre of the fovea[7]. Optical Coherence Tomography (OCT) is a new and non invasive technique which has been used to quantify the amount and extent of subretinal fluid and to demonstrate thickening of the neurosensory retina[8].

The differential diagnosis of CSR includes choroidal neovascularisation, optic disc pits, polypoidal choroidal vasculopathy, choroidal melanoma, choroidal metastasis, and peripheral retinal breaks. Choroidal haemangioma, uveitis, Harada's disease, optic neuritis papilloedema, vitreous traction , macular holes and systemic hypertension can produce neural retinal detachment as well[6].

The histopathological changes in the CSR include serous retinal pigment epithelium detachments, serous detachment of the cuticular portion of Bruch's Membraneand cystic degeneration in the outer layer of the detached neural retina[6].

The treatment of CSR is Laser photocoagulation to the site of fluorescein leakage. The only defined benefit from laser photocoagulation therapy is its ability to decrease the duration of the neurosensory detachment which has been documented in numerous studies[9,10]. Laser therapy has no effect on the final visual

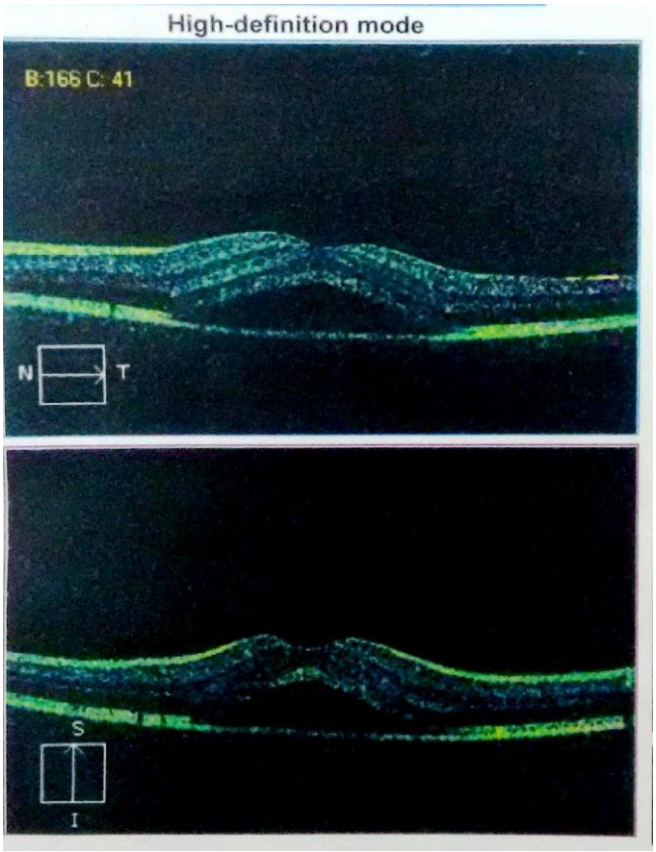
prognosis and consequently reserved for select patients[9,10] like patients who fail to improve after 4- 6 months of observation, demonstrate permanent changes from CSR in the other eye, demonstrate multiple recurrences or require improved vision for work.

The visual prognosis is good in CSR although patients may continue to have persistent metamorphopsia.

We report a case of 35 years old soldier with smoking, alcohol consumption and physical stress as risk factors presenting with unilateral blurring of vision and metamorphopsia was diagnosed as a case of CSR and managed with early laser photocoagulation.

II. Case Report

A 35 years old male, smoker (more than 20 pack years), chronic alcoholic (Consuming 60gms alcohol daily for 10 years) who had no other co-morbidities and historically did not have any domestic/ emotional stressor reported to our Eye facility with the history of distorted and blurring of vision of left eye for the past one week which was sudden in onset and non progressive in nature. On examination his visual acuity in the left eye was 6/9 and 6/6 in the right eye, anterior segment examination of both the eyes was within normal limit, the fundus examination of the left eye showed a transparent blister in the posterior pole between the neural retina and the RPE. Fundus fluorescein angiography of the left eye showed pooling of the fluorescein dye (ink blot pattern) in the fovea in the late phase of the angiogram. OCT of the left eye was carried out which showed detachment of the RPE with the choroid and thickening of the neurosensory retina (Fig 1).



(FIG- 1: OCT of the left eye was showing detachment of the RPE with the choroid and thickening of the neurosensory retina.)

To rule out risk factors (like type A personality, physical strain, emotional stress, vasoconstrictive agents, endogenous hypercortisolism, smoking, systemic corticosteroids (oral, intranasal & inhaled), psychopharmacological agents, alcohol, oral antibiotics, oral antihistamines, Cushing Syndrome, dialysis, organ transplant and SLE) associated with CSR the individual was referred to Medicine and Psychiatry department of our facility. At medicine department following investigations were carried out Hb- 13.7 gm%,TLC 5800/ cumm, Poly-40%, Lympho- 35%, Mono- 04%, Eosino- 21%, ANA profile was within normal limit, thyroid profile was also within normal limit, HIV was non reactive, Anti HCV antibody and HBsAg was Negative and overnight dexamethasone suppression test was normal.

Psychiatric evaluation didnot reveal any mental stressor. However the individual being a soldier and deployed in tough terrain of northeast india gave history of physical stressors. The individual was advised observation and to avoid the use of alcohol and cigarettes. He was reviewed after 04 weeks and found that his condition had not improved and the individual continued to have distorted and blurring of vision of the left eye. Focal Laser photocoagulation of the left eye was carried out at the point of leakage of fluorescein dye and was advised review after 02 weeks. On subsequent review after 02 weeks individual had improvement in the symptoms and his visual acuity was 6/6 in the left eye. He was again followed up at 06 months interval which showed no recurrence and any other fresh ocular complaints.

III. Discussion

Unilateral blurring of vision with metamorphopsia can occur in choroidal neovascularisation, optic disc pits, polypoidal choroidal vasculopathy, choroidal melanoma, choroidal metastasis, and peripheral retinal breaks. Choroidal haemangioma, uveitis, Harada's disease, optic neuritis papilloedema, vitreous traction , macular holes and systemic hypertension can produce neural retinal detachment as well[6]. Our case was a 35 years old male soldier presented with unilateral blurring of vision and metamorphopsia of the left eye for the past one week. Clinically on fundus examination it was suggestive of CSR but to confirm the diagnosis and to rule out other causes of bluring of vision and metamorphopsia FFA and OCT were carried out as FFA in CSR excludes other pathologies that may produce neural retinal detachments, and in more than 75% cases this pooling occurs within 1 disc dioptre of the fovea[7]. Risk factors of CSR includes type A personality, physical strain, emotional stress[1], vasoconstrictive agents[1], endogenous hypercortisolism[2], smoking[3], systemic corticosteroids (oral, intranasal & inhaled)[4,5], psychopharmacological agents[5], alcohol[3], oral antibiotics[3], oral antihistamines[3], Cushing Syndrome, pregnancy, dialysis, organ transplant and SLE. In our case we found physical stress along with the use of alcohol and cigarette smoking as the associated risk factors. According to Klein ML, Van Buskirk EM, Friedman E, et al. Central serous choroidopathy is essentially a benign and self-limited disorder, and treatment by photocoagulation is seldom needed. In their experience of 34 eyes which were followed up for an average of 23 months without therapeutic intervention, the detachment completely resolved in all cases and the average duration of detachment was three months. In our case the soldier was observed for 04 weeks with risk reduction in the form of complete abstinence from smoking, alcohol use and removing the occupational physical stress but there was no improvement in the presentation of metamorphopsia and blurring of vision. We carried out early laser photocoagulation keeping in view the morbidity associated with CSR which can hamper the military activities of a soldier despite recommended treatment protocol advocating laser photocoagulation therapy after 4 to 6 months of observation. Our case showed improvement in metamorphopsia and blurring of vision with 6/6 vision in the left eye after 02 weeks of follow up post laser photocoagulation and there was no recurrence even after 06 months of follow up.

IV. Conclusion

Physical stressors along with the history of smoking and alcohol use in a soldier may lead to sudden unilateral blurring of vision and metamorphopsia which can be due to CSR. Early Laser Photocoagulation therapy can be beneficial keeping in view the morbidity associated with CSR. Primary care physicians involved in medical care of soldiers need to be aware of this clinical condition and should refer the case to tertiary care centre for further evaluation and management by ophthalmologist at the earliest.

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