

Research Article

Visual outcome of central serous retinopathy

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ABSTRACT

Background: Central serous chorioretinopathy (CSCR) is a sporadic disorder of the outer blood retinal barrier. Increasing evidence implicates an abnormal choroidal circulation as the cause of CSCR. The study aimed at the visual outcome of central serous retinopathy for a duration of 6 months from the primary attack.

Methods: Study conducted at Department of Ophthalmology in Out Patient Department of Mediciti Medical College Hospital, from June 2013 to December 2014. Total 30 patients' eyes were treated with placebo treatment with antioxidants for a period of 6 months.

Results: Highest prevalence of central serous retinopathy was seen in age group of 20-40 years in 26 eyes (85%), males are predominant i.e. out of 30 patients 27 (90%), risk factors of central serous retinopathy like Type A personality are observed in 3. Associated visual abnormalities like micropsia, central scotomas in 20% of patients, fluorescein angiography showed 60% inkblot pattern. After observation for 6 months visual acuity was spontaneously improved within 4-6 months in 70% of patients, recurrences was seen in 6 patients i.e. 20% is observed.

Conclusions: Central serous retinopathy is most commonly seen among 20-40 years age group, with male predominance, unilateral in which Spontaneous resolution of central serous retinopathy is seen in 4-6 months so for which aggressive treatment is not necessary.

Keywords: Central Serous Retinopathy, Unilateral, Fundus Fluorescein Angiography

INTRODUCTION

Von Graefe was probably the first to report idiopathic central serous chorioretinopathy (ICSC).¹ Klein and Maumenee were the first to postulate, without the aid of fluorescein angiography, that the subretinal fluid was derived from the choriocapillaris, through the Retinal Pigment epithelium (RPE).²⁻⁴ Maumenee later noted the charactersic fluorescein angiographic patterns, confirming his original theory. In 1966 Gass proposed the term ICSC to describe such entities in hyperkinetic, intense, otherwise healthy young or middle aged adults, predominantly males who developed one or more localized serous detachments while under emotional stress.⁵

Central serous chorioretinopathy (CSCR) is a sporadic disorder of the outer blood retinal barrier, characterized by a localized retinal detachment of macular area. It is

caused by localized defect of the underlying Retinal Pigment Epithelium (RPE) usually affecting one eye.⁵ The resultant defect of RPE leads to the fluid of choroidal origin coming to subretinal space resulting in serous macular detachment.⁶ Increasing evidence implicates an abnormal choroidal circulation as the cause of CSCR. CSCR is usually a self-limiting disease typically affecting young or middle aged men occurring in the 2nd or 3rd decade of life.⁶ In terms of gender, there is a male predilection with the reported male: female ratio ranging from 6:1 in older studies and less than 3:1 in more recent literature.⁷

Optical coherence tomography (OCT) shows an elevation of full thickness sensory retinal layer from the highly refractive RPE layer separated by an optically empty zone.^{8,9} Sometimes a defect in the RPE may be demonstrated.¹⁰ Fundus Angiography (FA) shows smoke-stack or ink blot pattern. ICG early phase shows dilated

choroidal vessels at the posterior pole. The mid stages show multiple areas of hyperfluorescence due to choroidal hyper-permeability suggesting a more generalized RPE or choroidal vascular disturbance.¹¹

The patient of central serous retinopathy usually presents with metamorphosia, micropsia and macropsia or central scotoma. The definite diagnosis of central serous retinopathy is done by fluorescein angiography (FA). Where leak(s) either single or multiple sites(s) are demonstrated. Optical coherence tomography (OCT) shows an elevation of full thickness sensory retinal layer from the highly refractive RPE layer separated by an optically empty zone.^{8,9} Sometimes a defect in the RPE may be demonstrated.⁸ Fundus Angiography (FA) shows smoke-stack or ink blot pattern. ICG early phase shows dilated choroidal vessels at the posterior pole. The mid stages show multiple areas of hyperfluorescence due to choroidal hyper-permeability suggesting a more generalized RPE or choroidal vascular disturbance.¹¹

No definite etiology has yet been established for this condition though various factors like infective, vascular, toxic, immunological, allergic, mechanical, psychological and endocrinological have been implicated in the genesis of central serous retinopathy. Increased incidence of central serous retinopathy has been observed in conditions like type-A personality, pregnancy, cushing's syndrome etc. in these conditions an increase in the level of endogenous cortisol has been found. It has also been observed that systemic steroid aggravated or precipitated central serous retinopathy, thus supporting the association between central serous retinopathy and steroid.

Majority of cases of CSCR resolve spontaneously over time, treatment of choice is observation only. The aim of this study was to evaluate for visual recovery, for duration of 6 months from the primary attack in patients of CSCR with medication on antioxidants which is a placebo treatment

METHODS

The study was conducted from June 2013 to December 2014 on 30 eyes of patients with central serous retinopathy attending Ophthalmology Out Patient Department of Mediciti Medical College and Hospital. Patients were selected by following criteria.

Inclusion criteria: Patients below 50 yrs i.e. 20 yrs to 50 yrs with primary episode of neurosensory detachment of retina and without any macular diseases. Patients having systemic diseases like diabetes, hypertension which are under control and not having any fundal changes are taken for study.

Exclusion criteria: Patients above 50 years, having macular diseases. Patients having systemic diseases like uncontrolled diabetes, hypertension with or without any fundal changes.

A detailed history is taken in regarding the complaints and an enquiry is made as to whether the patient has similar attack previously. History was taken for Diabetes, hypertension, Tuberculosis, Cardiac disease, Drug history and type-A personality.

A general examination of the patient was done. Vision recording was done and best corrected visual acuity was assessed. Retinoscopy was done to rule out hypermetropia, visual abnormalities like micropsia are assessed with Amsler grid. Routine ophthalmological examination which included slit lamp examination for anterior segment, and fundus examination which include Direct ophthalmoscopy, indirect ophthalmoscopy and slit lamp biomicroscopy was done. Intraocular tension was recorded with schiotz tonometer in both the eyes. Fundus fluorescein angiography was performed for all patients. Fundus pictures are taken. Haematological investigations including complete blood picture, Urine for albumin and sugar, mantoux test, FBS were done for each patient.

The cases are then treated with Tab. Oxidon one daily which is antioxidant and fluribufen eye drops which is a topical NSAID used for 4 times a day followed up for six months (total 2 visits i.e. 3 months a visit). Improvement of vision and recurrences are noted. Vision recording, Fundus examination and fundus fluorescein angiography were done in subsequent visits. Thus the visual improvement in central serous retinopathy is assessed.

RESULTS

Study was carried out from June 2013 to December 2014 on 30 eyes of patients with central serous retinopathy attending Ophthalmology outpatient department of Mediciti Medical College and Hospital. Study include patients of age groups 20-50 year of which 27 males and 3 females.

Table 1: Demographic distribution in study.

Age intervals (years)	Males	Females	Percentage
20-30	14	2	53%
31-40	9	1	33%
41-50	4	0	14%
Total	27	3	100%

Table 2: Incidence of retinopathy in eyes.

Eye	Number of Cases	Percentage
One eye	26	86.6%
Both eyes	4	13.4%
Total	30	100%

Table 3: Associated risk factors with patients in study.

Risk Factors	Number of Cases	Percentage
Diabetes	3	10%
Type A personality	3	10%
HTN	2	6.6%
Tuberculosis	1	3.4%
Drug History	2	6.6%
TOTAL	11	36.6%

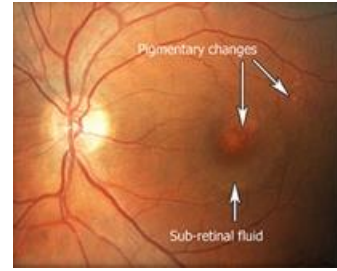


Figure 2: LE pigmentary changes seen at macula in healed CSR cases

Table 4: Patterns of fundus fluorescein angiography.

Type of FFA	Number of Cases	Percentage
Ink Blot	18	60%
Smoke Stack	5	16.6%
Multi Focal Leaks	1	3.4%
RPE Defects	6	20%
Total	30	100%

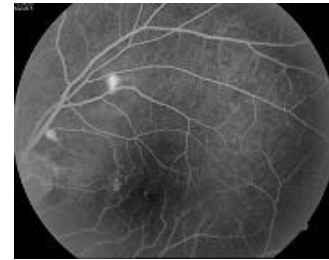


Figure 3: LE Smoke stack pattern hyperfluorescent areas along the supero temporal arcade is seen in venous phase.

Table 5: Visual improvement after a period of 6 months follow up.

Visual Acuity	Number of Cases	Percentage
6/6	12	40%
6/9	9	30%
6/12	3	10%
6/18	2	6.6%
6/24	1	3.4%
6/60	3	10%
Total	30	100%



Figure 4: RE macular edema of 3DD with ring reflex.

Table 6: Recurrences of retinopathy.

Sex	Number of Cases	Percentage
Males	5	16.6%
Females	1	3.4%
Total	6	20%



Figure 1: LE extra foveal edema with sub foveal RPE defects.



Figure 5: RE Smoke stack pattern of hyperfluorescent area seen in macular area.



Figure 6: RE Window defects seen at supero temporal arcade in choroidal phase

DISCUSSION

Central serous retinopathy most commonly affects the young individuals of age between 20-40 yrs old (Table 1). Sex incidence is found to be male: female ratio 10:1 in present study which correlates with study of Hussain et al.¹² and Folk et al.¹³ which is 8:1 showing male predominance. Most of the patients in this study are presented with unilateral central serous retinopathy i.e. 26 cases out of 30 cases, 86.6% which coincide with study of Mutlak et al.¹⁴ (87%) (Table 2).

The risk factors of central serous retinopathy like Type A personality are observed in 3 of present study which coincides with study of Folk et al.¹³ and Bujarborua et al.¹⁵ Associated risk factors like HTN, Diabetes, are also observed in 4 patients in study done by James Folk et al.¹³ which is in correlation with present study (Table 3).

Fundus fluorescein angiography showed 60% inkblot pattern along with window defects in choroidal phase, 15% smokestack pattern Only 5% showed multiple leaks which is in coherence with previous study done by Simon and Borchert.¹⁶

The visual acuity was spontaneously improved with 4-6 months 70% of patients in this study (Table 5) had recovered spontaneously within 6 months as that of study done by Mutlak et al.¹⁴, Hussain D et al.¹² and Folk et al.¹³ were 40% of patients had improved to 6/6, 30% to 6/9, 10% to 6/12.

In this recurrences are seen in 6 patients i.e. 20% is observed in present study were as Folk et al.¹³ it is 25-45%, Hussain et al.¹² it is 50%, Mutlak et al.¹⁴ 45% which well correlates with previous studies (Table 6).

CONCLUSIONS

Central serous retinopathy is most commonly seen among 20-40 years age group, with male predominance, unilateral which Spontaneous resolution of central serous retinopathy is seen in 4-6 months, so for which aggressive treatment is not necessary.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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