



Clinical Profile of Patients with Central Serous Retinopathy and their Visual Outcome- a tertiary care center study

Ophthalmology

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ABSTRACT

Purpose –This study evaluated the effect of laser photocoagulation for CSR. **Methods** - This study was conducted in Regional institute of ophthalmology among 50 patients over a period of one year with acute CSR (with in 6 weeks of onset) aged between 30 to 50 years with no prior retinal pathology. Out of 50 patients 12 patients were treated with focal laser with double frequency Nd Yag focal laser. The remaining 38 patients who did not accept laser photocoagulation were followed as control group. **Result**- In the study group the duration of the serous detachment was shorten and the final best corrected visual acuity was better and none of the photocoagulation group had a recurrence. **Conclusion**- Direct laser photocoagulation of the leakage sites for CSR is safe and effective to shorten the duration of the serous detachment, to improve final BCVA and to decrease the incidence of recurrences.

KEYWORDS:

INTRODUCTION

Central serous retinopathy is an exudative chorioretinopathy characterized by an exudative neurosensory retinal detachment with or without an associated detachment of the retinal pigment epithelium (RPE). This disorder results in defective vision, Positive scotoma, metamorphopsia and micropsia. The disease was first recognized by Albrecht von Graefe in 1866, who termed the condition "idiopathic detachment of the macula" and "central recurrent retinitis". Initially investigators tried to explain the aetiology and pathophysiology of CSR based on the psychogenic-related hypothesis proposed by Horniker in 1927. He suggested that angioneurotic patients were susceptible to retinal angiospasm and exudation in the macula. Maumenee was the first to describe a leak at the level of the retinal pigment epithelium (RPE) in 1965 using fluorescein angiography. Subsequently, Gass provided detailed descriptions of the fluorescein angiographic characteristics of CSR. Infections, toxins, an immunological reaction, neuronal, circulatory and hormonal regulatory factors have been all been implicated in the initiation of the damaging process that leads to CSR. As a result of the multiple theories and despite CSR having a favourable natural course, various treatments have been proposed. Psychotherapy was suggested in followed by drug therapies such as α -adrenergic blockade, β -adrenergic inhibitors, and acetazolamide. Laser treatments like retinal photocoagulation, transpupillary thermotherapy (TTT), and currently photodynamic therapy (PDT). More recently, anti-VEGF agents have also been investigated.

Objective of this study

- The Clinical profile of Patients with CSR.
- Visual outcome following conservative and subthreshold Focal laser.
- To observe the resolution of sub retinal fluid and central macular thickness in CSR.

MATERIALS AND METHODOLOGY

STUDY DESIGN

Descriptive study with longitudinal follow up

STUDY SETTING AND STUDY PERIOD

The study was conducted at Regional institute of ophthalmology over a period of one year.

STUDY POPULATION

Patients with CSR attending OPD, Regional institute of ophthalmology, Thiruvananthapuram.

INCLUSION CRITERIA

Patients with acute CSR (within 6 weeks of onset) aged between 30 to 50 years and with no prior retinal pathology.

EXCLUSION CRITERIA

- 1) Chronic CSR (> 6 weeks)
 - 2) Multiple attacks (> 1 attack)
 - 3) CSR associated with pigment epithelial detachment (> 1 disc diameter)
 - 4) Patients aged below 30 years and above 50 years
 - 5) Complicated CSR such as secondary choroidal neovascularisation, pregnancy associated CSR
 - 6) Patients with prior retinal treatment
- Sampling Technique:-**
Census Type Study

Sample Size: -

All cases with CSR registered in Regional Institute of Ophthalmology, Trivandrum from January 2014 to December 2014.

PROCEDURE

Patients attending RIO OPD with symptoms of defective vision, positive scotoma, Metamorphopsia, Micropsia were evaluated after getting informed consent.

After taking history and complete ocular examination, the patients underwent measurement of best corrected visual acuity, anterior segment examination, and clinical examination with 90D and indirect ophthalmology. Then the clinical diagnosis of CSR was established and OCT was taken for confirmation of diagnosis. All had unilateral involvement.

Clinical examination with 90D showed neurosensory detachments of retina at macula. If complaints persisted and those who did not show visual improvement during follow up after one month were subjected to FFA and if leaking points were detected focal laser (subthreshold laser or sub visible laser) was given.

Out of 50 patients 12 patients were treated with focal laser with double frequency Nd Yag focal laser, the remaining 38 who did not accept laser photocoagulation were followed as the control group.

They were followed up for a period of four months. The visual acuity was checked at four weeks, eight weeks, twelve weeks and four months. OCT was taken two weeks later following laser treatment

and also after three months to detect the resolution of Sub retinal fluid.

DISCUSSION

Our study was conducted among 50 patients who attended RIO Trivandrum and was diagnosed having CSR. Among the 50 patients 40% were in the age group of 31-40 years and 60% were in the age group of 41-50 years. In a study by Harmovici R, KoH,S, Gagnon DR et al showed that CSR primarily affects men in their age group between 41-50 years. Male patients outnumbered female patients. Of the 50 patients with CSR, 45 were males (90%) and 5 were females (10%).

In a study by Kitzmann AS, Dulido JS, et al conducted in Olmsted county Minnesota showed 9.9 cases per 100,000 men and 1.7 per 100,000. Women in Minnesota. Another study conducted by Tittl MR, Spaide et al reported male female ratio ranges from 2.7:1 to 7:1. In my study 18 patients (36%) had BCVA 6/9, 11 patients (22%) had BCVA 6/12, 5 patients had 6/18 (10%), another 5 patients had 6/24 (10%) and another 5 patients had 6/36 (10%) at the time of presentation.

In a study conducted by Straastma BR, Allen RA, et al CSR Trans Pacif Cst Oto-Ophthalmol Soc 1966;47:107-17 showed that the fall of vision is usually mild. Straastma reported that the BCVA better than 6/12 in 75% of the cases with acute attack. In my study all 50 patients had defective vision (100%), 48 patients had positive scotoma (96%), 8 patients had Metamorphopsia (16%) and 3 patients had Micropsia (6%). In the study conducted by Burton TC, et al they found that defective vision with positive scotoma were the main presenting symptoms of the patients with CSR.

Numerous risk factors for CSR have been reported but the most consistent is the use of glucocorticoids. This association was reported in detail in the mid 1980s by Wakakura and Harada.

In the present study, it is observed that steroid has no role in CSR as the sample size was small and in my study only 8% (ie. 4 patients) gave the history of taking topical steroids for skin diseases. No association was found with diabetes, bronchial asthma, hypertension, smoking. A smaller prospective study of 38 cases conducted by Karadimas et al showed that CSR was associated with elevated levels of endogenous corticosteroids. So hypertension can also be indirectly related a risk factor in CSR. In 1966 Jain and Sing described a case of CSR that resolved after stopping oral steroids that was prescribed to him to treat Reiter's syndrome.

In the present study 6 patients had stress disorder who were diagnosed having higher emotional distress from the history and also had more psychological symptoms. In the present study no correlation was seen between CSR and Stress, as the sample size was small.

In a study conducted by Yannuzzi showed that there was a strong association between Type A personality and CSR. In a study conducted by Haimovici R, Gagnon DR et al showed that there is association of hypertension with CSR. In the study conducted by Yannuzzi et al showed association of stress and personality disorder in association with CSR. In the present study, association was not found (p value = 0.516) since the sample size was small and among the 50 patients only (14%) had stress disorder. In the present study no association was found for Diabetes and Hypertension. In my study there were cases belonging to all the income groups. In the study conducted by Harmovici R et al showed the association of alcohol and Hypertension in CSR.

In the present study it was found there is association of CSR with alcoholism (p=0.03)

In the present study 17 patients were smokers (34%). No correlation was seen with smoking and CSR. Out of 50 patients, 38 were treated conservatively who did not accept laser photocoagulation were followed as the control group and 12 patients were treated with focal

laser after explaining the benefits and risk of laser treatment. OCT was taken at the time of diagnosis and during follow up after 1 month. Presence of sub retinal fluid and foveal thickness were noted at the time of presentation. 12 patients who had decreased visual acuity and significant SRF were subjected to laser. They were first subjected to FFA and out of 12 patients, 9 patients showed ink blot pattern in FFA and 3 patients showed smokestack pattern. Extra foveal leaks were treated with double frequency Nd:Yag focal Laser of intensity of 50 MW, of spot size 100nm for 0.1 second just to produce photofragmentation.

These patients were followed for a period of 4 months. OCT was taken at the end of 4 months, to evaluate SRF and foveal thickness.

In our study mean foveal thickness of patients who were planned to treat with laser had mean foveal thickness of 363.33µm and those who were under observation was 269.11µm.

In a study conducted by Hee et al correlated the OCT finding of CSR cases with slit lamp biomicroscopy and fluorescein angiography and they could detect subretinal detachment with OCT that remained undetected in FFA. Moreover OCT also helped in longitudinal measurements of SRF and to track the resolution of subretinal fluid.

In the present study Nd:Yag focal laser of 50mw, 100µm spot size, for 0.1sec was applied to areas of focal leakage that had been identified on FFA. Following laser treatment one patient (8.3%) recovered within 1 month, 8 patients (66.7%) recovered within 2 months and three patients (25%) recovered within 3 months. This study shows that focal laser hastens early resolution of SRF and early recovery of vision.

In the study by Leaver and Williams reported faster resolution of subretinal fluid in eye treated with focal laser photocoagulation to the leakage site.

Another study by Burumcek and colleagues conducted a non randomized study of Laser versus observation in 45 eyes. They found a shorter time to fluid resolution and fewer recurrences in the laser group than in the conservative group. They also reported a better final visual acuity in the treated group over almost 5 years of follow up.

In the study by Lewer and Williams recurrence rate were similar between laser versus conservative management.

Following resolution of CSR in patients treated with laser, normal macula was seen in 5 patients (41.7%), PED in 1 patient (8.3%), RPE changes in 6 patients (50%) and none of them had subretinal precipitates.

Those who were treated conservatively, following recovery showed normal macula in 23 patients (60.5%), PED in 4 patients (10.5%), RPE changes in 6 patients (15.8%) and subretinal precipitates (13.5%).

In a study conducted by William H. Annesley, James J. Augsburger in a long term follow up of cases treated with laser observed that visual prognosis is extremely good in more than 85% of laser treated eyes, but 12% of eyes had poor visual results due to RPE alteration.

CONCLUSION

- Central Serous Retinopathy is characterized by an exudative macular detachment associated with focal points of RPE hyperpermeability resulting in defective vision, positive scotoma, Metamorphopsia and Micropsia.
- CSR usually seen in the age group between 30-50 years.
- Males are more affected than females.
- No association was found with DM, HT, BA, Smoking, Steroid use.

- Most of the patients had visual acuity ranging from 6/9-6/12 at the time of presentation.
- Focal laser helped in early resolution of subretinal fluid and early recovery of vision.
- Those treated conservatively also had resolution of SRF and recovery of vision. But the time duration for resolution of SRF was more.
- Few patients had RPE abnormalities, PED
- Recurrences are rare in patients treated with lasers, but since it was a short term study this could not be established. None of the patients had recurrences during the study period.

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