

Outcomes Of Multimodal Management Of Central Serous Chorioretinopathy In Combined Military Hospital

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Abstract

Purpose: To evaluate the efficacy of laser photocoagulation and injection AntiVEGF in central serous chorioretinopathy in combined military hospital.

Method: 28 cases of central serous chorioretinopathy presented to in eye department of Combined Military Hospital from September 2022 to September 2023. These cases were diagnosed clinically and confirmed by fundus fluorescece angiogram and optical coherence tomography. After thorough evaluation, Focal laser was perform in 16 indicated cases and intravitreal AntiVEGF (Bebacizumab) were given 4 cases of subfoveal leak central serous chorioretinopathy after 3 month observation. Post intervention follow up schedule were 1 week, 1 month and 3 months. The main features evaluated are presenting best corrected visual acuity, associated findings and best corrected visual acuity and complications after laser or AntiVEGF injection. Other data includes age, gender, laterality of eyes, risk factors; types of leaking were also recorded.

Result: Out of 28 cases, 7 cases were central serous chorioretinopathy with subfoveal leak in angiogram. Among those, 10 cases were presented with central serous chorioretinopathy with pigment epithelial detachment. After 3 months of follow up, subretinal fluid was disappear in 14 cases out of 16 cases of laser. Spontaneous resolution occurred in 8 cases. One patient was presented with RPE tracking. Age limit were extent from 22 years to 48 years, most of them were in third decade.

Conclusion: Central serous chorioretinopathy most commonly present without any specific cause. Due to professional demand, most of the causes need intervention which gives fruitful outcome of improvement of visual acuity with reduced subjective contrast.

Introduction

Central serous chorio- retinopathy (CSCR) is an idiopathic, self- limiting, non- inflammatory condition resulting in serous detachment of the retina in the macular region. It results from alterations in blood aqueous barrier at the level of retinal pigment epithelium (RPE). Fluorescein angiography demonstrates abnormal focal defect in RPE causing leakage of fluid into the subretinal space.¹

Fundus fluorescein angiography is diagnostic and three characteristic patterns can be typically seen. Expansible dot pattern, smoke stack pattern and diffuse pattern with pooling of the dye in subretinal space are almost universally seen.^{2,3} Optical coherence tomography (OCT) is a noninvasive technique that can demonstrate the presence of shallow retinal detachment and subretinal fluid.

Natural course of the disease is usually benign.

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Most cases of CSCR resolve spontaneously with little or no residual visual defects.⁴ Treatment is reserved for those showing no signs of resolving after 4- 6 weeks and those having frequent recurrences. These patients have significant residual visual disturbance resulting from RPE atrophy and choroidal neovascularisation.⁵ The aim of the study is to evaluate the efficacy of laser photocoagulation and injection AntiVEGF in central serous chorioretinopathy in combined military hospital.

Method

28 cases of central serous chorioretinopathy presented to in eye department of Combined Military Hospital from September 2022 to September 2023. These cases were diagnosed clinically by dome shape elevation of neurosensory retina at posterior pole without any sign of inflammation and confirmed by fundus fluorescence angiogram and optical coherence tomography. After thorough evaluation, Focal laser was perform in 16 indicated cases and intravitreal AntiVEGF (Bebacizumab) were given 4 cases of subfoveal leak central serous chorioretinopathy after 3 month observation. Post intervention follow up schedule were 1 week, 1 month and 3 months. The main features evaluated are presenting best corrected visual acuity, associated findings and best corrected visual acuity and complications after laser or AntiVEGF injection. Other data includes age, gender, laterality of eyes, risk factors, types of leaking were also recorded.

Patients having pigment epithelium detachment or sensory neuro- retinal detachment or combined detachment were part of the study. Ethical clearance for this study was taken prior to sanction of the project. Those having anterior segment pathology with CSCR which could hamper posterior segment evaluation were excluded. Also, patients with concomitant posterior segment disorders like optic disc pit, sub-retinal neovascular membrane (SRNVM) and choroidal mass were also excluded.

Fundus fluorescein angiography (FFA) forms the gold standard for diagnosing and treating a case of

CSCR. Patients were subjected to FFA after taking written informed consent.

After written informed consent they were subjected to focal laser photocoagulation if leakage is found at extrafoveal region and patient demands for speedy recovery due to professional need. But if the leakage was in subfoveal region, where laser is not appreciate, intravitreal AntiVEGF injection was applied for quick recovery in 4 cases.

Argon green focal laser photocoagulation was performed using Nidek laser 532 nm machine. Mainster standard lens with 2% methylcellulose as coupling agent was used. Laser protocol using 100 im spot size, 80 to 100 mW power with 0.10 second exposure was used. one to three confluent burns were placed at leaking point. The energy level was initially kept at 80 mW and gradually increased till a faint white reaction was seen on the retina. Patients were followed up after one week and then once a month for next three months. BCVA, stereoscopic fundus examination were performed on every visit. Repeat OCT were done after three months of performing focal laser or intravitreal antiVEGF injection.

Results

Patients enrolled in our study were between 22 and 48 years in age with a mean age of 38 years of which 26 (92.86%) patients were males. 24 (85.72%) patients was active serving soldier, while 2(7.14%) were housewives and 2 (7.14%) were retired soldiers.

Table: Occupation of the patients of central serous chorioretinopathy

Occupation	Number
Serving soldier	24 (85.72%)
Retired soldier	02 (07.14%)
Housewives	02 (07.14%)

Out of 28 cases, 7 cases were central serous chorioretinopathy with subfoveal leak in angiogram. Among those, 10 cases were presented with central serous chorioretinopathy with pigment epithelial detachment. Spontaneous

resolution occurred in 8 cases. One patient was presented with RPE tracking.

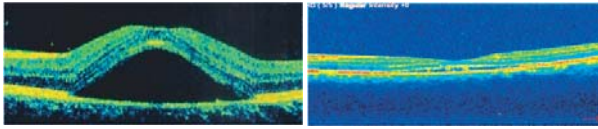


Fig: 1 (A) First time attack of CSCR, after observation for 6 weeks (B) resolution of subretinal fluid which causes improvement of Best corrected visual acuity from 6/24 to 6/12.

After 3 months of follow up, subretinal fluid was disappear in 14 cases out of 16 cases of laser. We used intravitreal injection of antiVEGF in case of 4 cases where there was recurrent macular edema with nonspecific leaking point in fundus fluorescence angiogram or there is subfoveal leak where laser is not appropriate.

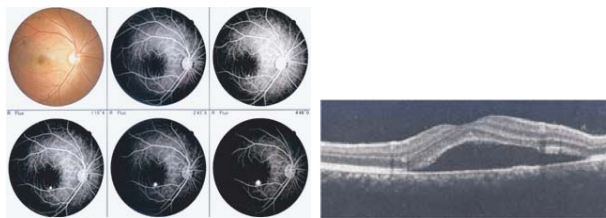


Fig: 2 (A) In this recurrent case, FFA shows ink blot pattern leakage in right eye, in which macular edema is confirm by OCT. Visual acuity was 6/18.



Fig: 2 (B) After application of focal laser, follow up for 6 weeks, there is total resolution of subretinal fluid with improvement of vision to 6/6.



Fig: 3 (A) OCT reveal sub retinal fluid with pigment epithelial detachment, visual acuity 6/60.



Fig: 3(B) 1 months after follow up of laser application, resolution of subretinal fluid with improvement of visual acuity to 6/12.

Discussion

Central serous chorio-retinopathy is a self-limiting condition occurring predominantly in young individuals between 20-50 years of age. Recovery starts spontaneously within three months of onset. 95% of patients recover within 4-8 weeks with full visual recovery in six months. However, recurrences are common and observed in almost one third to one half patients. 10% have three or more recurrences. Only 5% of patients have severe visual loss.^{6,7}

Since the disease is self-limiting, no treatment is advocated in the initial phase. After a three months wait for spontaneous resolution, laser photocoagulation of the leak can be performed if the site of leak is at least one fourth disc diameter away from the fovea.

However, if no resolution is seen within the first three months, alternative therapeutic modalities can be thought of. However, laser photocoagulation has its limitations and carries a 2- 5% risk of development of choroidalneo-vascularisation after several months of treatment.

Similar beneficial effects of photocoagulation has been reported in several studies including the largest study by Spitznas et al, involving 139 consecutive cases without treatment and 109 consecutive cases who received photocoagulation treatment.⁴ These cases of chronic long standing CSCR had atrophic changes in neurosensory layer of retina. There was gross loss of photoreceptor layer and atrophy of fovea.

The laser energy is absorbed by the RPE cells. The mechanism of action can be postulated to be stimulation of the diseased RPE cells, to absorb the overlying fluid. Inadequate reaction was observed in post treatment period in 7 (28%) cases.⁸

Conclusion

Central serous chorioretinopathy most commonly present without any specific cause. Due to professional demand, most of the cases need intervention which gives fruitful outcome of improvement of visual acuity with reduced

subjective contrast. Focal laser photocoagulation of FFA Leaking point gives speedy recovery with quick resolution of subretinal fluid, subsequently improvement of visual acuity. Intravitreal antiVEGF is alternate good option for recurrent, nonspecific leakage and chronic subfoveal leakage.

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