ORIGINAL ARTICLE

Clinical Profile and Outcome of Serpiginous Choroiditis in a Uveitis Clinic in India

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ABSTRACT

Objective: To report the clinical profile and outcome of treatment in patients with serpiginous choroiditis. **Materials and Methods:** A retrospective non-comparative case series was conducted over a period of 1 month. Seventeen eyes of 11 patients that were diagnosed as serpiginous choroiditis were included in the study. Laterality, clinical presentation, presence of any systemic abnormality, best corrected visual acuity (BCVA), lens status, intraocular pressure, findings on funduscopic examination, type of serpiginous choroiditis and treatment modality offered were recorded. Information obtained was entered into SPSS 17.0 data base and analyzed. **Results:** There was a male preponderance (3:1). Age at presentation ranged from 14 to 51 years with a mean age of 30 years (±9.95 SD). Eight subjects (64.7%) had bilateral involvement at presentation. Mean visual acuity (VA) improved to 0.34 (±0.45 SD) after treatment from 0.49 at presentation. Vision improved or maintained in 15 eyes, whereas it deteriorated in two eyes due to foveal involvement and choroidal neovascular membrane, respectively. **Conclusion:** Patients with serpiginous choroidits can achieve a significant visual improvement following successful treatment with steroids and immunosuppressive treatment.

Keywords: Serpiginous choroiditis, visual impairment, visual improvement

INTRODUCTION

Choroiditis is the inflammation of the choroid, the middle vascular layer of the eye. Choroiditis can be due to infectious or non-infectious causes, however, many of the cases are idiopathic. The most important causes in our environment are toxoplasmic retinochoroiditis and tubercular choroiditis.[1,2] Other forms of choroiditis are multifocal choroiditis, sarcoid choroiditis and serpiginous choroiditis. Serpiginous choroiditis is an uncommon, usually bilateral, chronic or recurrent inflammation of the choroid, retinal pigment epithelium and choriocapillaries of unknown etiology.[3] Several studies have demonstrated associations between serpiginous choroiditis and varying etiologies.[4-8] Serpiginous choroiditis starts around the optic disc and then gradually spread in a serpentine manner toward the macula and peripheral fundus. It can be classified into typical (peripapillary geographic pattern), serpiginous macular choroiditis and atypical (ampiginous choroiditis). Serpiginous choroiditis is very rare in our environment; work in this area has not been reported in our region to the best knowledge of the author. The author was exposed to a number of cases during 1 month clinical rotation in a referral (uveitis) clinic in India. The main aim of this study is to report the clinical profile and outcome of cases of serpiginous choroiditis that were treated at the referral clinic.

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MATERIALS AND METHODS

The medical records of 11 patients with serpiginous choroiditis seen at the uveitis clinic of a referral hospital in India were reviewed retrospectively. Case records of patients that satisfied the inclusion criteria were retrieved and included in the study. Inclusion criteria were active choroiditis at the initial presentation and minimum follow-up period of 3 months from presentation or after any recurrence.

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Persons with healed choroiditis at presentation or less than 3 months period of follow up as recorded in the case notes were not included. Information extracted included patient's demographics including age and sex. Laterality, clinical presentation and presence of any systemic diseases were documented. Best corrected visual acuity, lens status, intraocular pressure, and funduscopic findings were noted at presentation and after treatment. Type of serpiginous choriditis and activity at presentation and after treatment were recorded. Treatment modalities offered were noted from the case records. For the purpose of statistical analysis, Snellen chart visual acuity was converted to the logarithm of the minimal angle of resolution (log MAR) value and normal visual acuity was defined as best-corrected visual acuity (BCVA) of 0.04 or better. All patients had Fundus Fluorescein Angiogram (FFA) at least at their initial presentation. FFA was repeated if there was a new lesion in same or the other eye or if there was a suspicion of recurrence of the disease. Active choroiditis was defined as grayish, yellow cream colored lesion at the level of retinal pigment epithelium showing early central hypofluorescence and late fuzzy hyperfluorescence at the expanding margins on FFA. Information obtained was entered into SPSS data base for analysis. Analysis was performed using simple frequencies and cross tabulation. A *P* value < 0.05 was considered statistically significant. Permission to conduct this study was obtained from the relevant authority of the hospital and the research complied with the principles outlined in the Helsinki declaration.

RESULTS

Seventeen eyes of 11 patients diagnosed as serpiginous choroiditis were included in the study. Eight subjects (72.7%) were males and three (27.3%) were females (M: F; 3:1). Age range at presentation was from 14 to 51 years with a mean age of 30 years (±9.95 SD). Eight subjects (72.7%) had bilateral involvement at presentation. Ten patients (90.9%) presented with complaints of diminished vision in the affected eye while the other patient presented with complain of seeing floaters in the affected eye as shown in Table 1.

Visual acuity (VA) ranged from 0.00 to 1.40 at presentation. Mean VA improved to 0.34 (±0.45 SD) after treatment from 0.49 at presentation. Presence of visual impairment at presentation and after treatment is shown in Table 2.

All 17 eyes were diagnosed as active peripapillary serpiginous choroiditis. Fourteen eyes (82.4%) had a recurrence of uveitis after the treatment with macular involvement in 5 eyes (29.4%) as in Table 1.

Table 1: Sex distribution, presenting complaint, laterality, recurrence of uveitis and macular involvement in patients with serpiginous choroiditis

	Frequency (*n*)	Percentage
Sex distribution		
Male	8	72.7
Female	3	27.3
Total	11	100
Presenting complaints		
Diminished vision	10	90.9
Floaters	1	9.1
Laterality at presentation		
Bilateral OU	8	72.7
Unilateral OD	2	18.2
Unilateral OS	1	9.1
Recurrence of uveitis		
No	3	17.6
Yes	14	82.4
Macular involvement		
No	12	70.6
Yes	5	29.4
Treatment offered		
Oral steroids	4	36.4
Combination therapy	7	63.6

OU- Both eyes, OD- Right eye, OS- Left eye

Table 2: Visual impairment at presentation and after treatment

Visual impairment	At presentation	*n* (%)	After treatment	*n* (%)
Nil impairment	8	47.1	10	58.8
Mild	2	11.8	4	23.5
Moderate	4	23.5	1	5.9
Severe	3	17.6	2	11.8
Total	17	100	17	100

DISCUSSION

Study of clinical profile of serpiginous choroiditis is essential for the clear understanding of this disease, which would help in proper management. Majority of cases were seen in men with a mean age of presentation of 30 years and this finding is similar to those noted in northern and southern India.[9,10] However, it was different from other studies reported elsewhere which indicated later onset of the disease.[11,12] Bilateral involvement of eyes was seen in this study population and is similar to what was reported from southern and eastern India,[9,13] however, it is different from that reported from northern India.[10] All subjects in this study had active peripapillary serpiginous choroiditis with initial lesions around the optic nerve head, similar to other reported series.[9,10,13] Isolated macular involvement is not seen in this series unlike what was reported by Abrez *et al*. from southern India.[9] The major limitation in this study was the smaller sample size and the inclusion of only patients that presented with active choroiditis, this may explain why isolated macular

involvement were not seen, even though the two studies were conducted from the same region. About one-third of the patients in this series had macular involvement at initial presentation; necessitating early diagnosis and institution of therapy. Patients were commenced on treatment after obtaining physician's clearance. Four patients were treated with oral steroids, while the remaining subjects in this series were prescribed the combination treatment (Oral prednisone 60 mg/day (1 mg/kg body weight), Oral azathioprine 50 mg three times a day, Oral cyclosporine 150 mg twice a day, with antacid and calcium supplements). On follow-up visits, the lesions heal over a period of 3 months, and the treatment is gradually tapered. Following this modality of treatment the lesions healed in all eyes with active serpiginous choroiditis at presentation except in one patient where anti-tuberculous treatment was instituted as suggested by quantiFERON TB gold test and High-resolution computed tomographic scan (HRCT) of the chest. There was no significant difference in the rate of recurrence among patients treated with oral steroid alone and those treated with combination therapy (P = 0.308). This is in keeping with the study by Abrez *et al*. from southern India.[9] The presentation of serpiginous choroiditis is noted to vary across different study populations, and there is a need for increased reporting of cases for the better understanding of this disease.[10] The current treatment protocol for serpiginous choroiditis also remains controversial.[14,15] Although oral steroid remain the mainstay, there is often a need for immunosuppressive in view of non-response, recurrence, or steroid-induced side effects.[9,10,14,15] Antituberculous therapy was used in one patient in this series due to non-healing of the lesions after 3 months of instituting treatment and evidence of tuberculosis from a positive quantiFERON TB Gold test and HRCT chest.

Visual impairment significantly improved following successful treatment of serpiginous choroiditis in this study (P = 0.002). Patients with macular involvement had moderate to severe visual impairment (P < 0.001). Recurrences that were successfully treated did not show significant visual impairment after treatment (P = 0.305). It is important to mention that this study provides the profile of a uveitic disease as is seen in a clinic in India. A similar study could be performed on uveitic disease within Africa and contrasted with findings from India and other regions of the world.

CONCLUSION

Patients with serpiginous choroidits can achieve a significant visual improvement following the successful treatment with steroids and immunosuppressive treatment. We recommend early diagnosis of these cases and prompt institution of an appropriate treatment to forestall any visual impairment due to macular involvement.

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How to cite this article:***

Source of Support: Nil, **Conflict of Interest:** None declared