UNILATERAL NONTRAUMATIC SUDDEN PAINLESS VISUAL DISTURBANCE IN YOUNG PATIENTS OF A BACKWARD AREA- AN ALARMING RISE OF CENTRAL SEROUS CHORIORETINOPATHY

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ABSTRACT

BACKGROUND

The pathology of unilateral nontraumatic sudden painless visual disturbances in young patients are usually limited to the retina, vitreous, optic nerve pathway, brain and often requires meticulous examinations and may produce a diagnostic dilemma. So, here we are trying to make a list of these diseases in a backward area according to frequency of occurrence, which may help in near future.

MATERIALS AND METHODS

This study was done in the Outpatient Department (OPD) of Malda Medical College and Hospital, Malda, West Bengal, India, for one and a half year. Patients of 20-50 years age group who presented with sudden, painless, nontraumatic and unilateral visual disturbance were included. In case of bilateral disease, patients were included only if in the better eye, disease remained peripheral (disease should not involve the posterior pole on examination of fundus), patient had no complaint regarding vision of that eye and also on examination, no reduced visual acuity of that eye was found.

RESULTS

The frequency of occurrence of many diseases were as per the other available data, but we got increased frequency of Central Serous Chorioretinopathy (CSCR).

CONCLUSION

To know the exact cause of this, further studies are required. Rapid urbanisation leading to mental stress of young population maybe a related factor.

KEYWORDS

Unilateral, Nontraumatic, Painless, Sudden Visual Disturbance, Young, Backward Area, CSCR.

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BACKGROUND

Young patients often present with visual disturbances, which maybe unilateral or bilateral, sudden or chronic, traumatic or nontraumatic, painless or painful. Trauma is an important cause of visual disturbance in young patients.[1-4] Diagnostic dilemma occurs especially in cases of painless, nontraumatic, unilateral cases and the causes are often limited to retina, vitreous and optic nerve pathway, brain. Sometimes, no structural damage maybe found (e.g.- amaurosis fugax).[5] Special investigations are often required to diagnose them. Causes may vary in different geographical areas.

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So, in this study, we are trying to prepare a list of unilateral, sudden, painless, nontraumatic visual disturbances in young patients of a backward area according to frequency of occurrence.

MATERIALS AND METHODS

Study Area- This present study was done under Ophthalmology Department of Malda Medical College and Hospital, Malda, West Bengal, India. Malda districts listed as a backward district in India.

Study Period- Study was done from the period of July 2015 to December 2016 (one and half year).

Study Population- Study patients were selected from the patients attending the Outpatient Department of the Ophthalmology Department of Malda Medical College and Hospital. Total one hundred and eighty five patients (185) were included in the study.

This is a prospective, observational study.

Patients of 20-50 years age group were included. All new or old (already established cases who attended OPD in that

period). Patients with unilateral nontraumatic visual disturbance with established cause were included. Patients' old records like prescriptions/outpatient department ticket/discharge certificate were reviewed. Parameters like Best Corrected Visual Acuity (BCVA), slit-lamp examination, slit-lamp examination with +90D and +78D lens, indirect ophthalmoscopy, fundus photography, fluorescein angiography, perimetry, anterior chamber angle status, Intraocular Pressure (IOP), etc. were checked and asked to repeat whenever felt necessary.

Cases with bilateral visual disturbance at the time of presentation were excluded. We included those cases where the pathology was bilateral, but in one eye, it remained peripheral (not affecting patient's vision and/or patient had no complain regarding vision of that eye). We found a lot of cases with proliferative diabetic retinopathy with vitreous haemorrhage and few cases of hypertensive retinopathy, but in all the cases, the posterior pole of both eyes were involved and patients were complaining of visual disturbance in both eyes and on examination also reduced BCVA found in both eyes. So, we excluded those cases.

Systemic investigations like blood sugar, blood pressure, urea, creatinine, chest x-ray, Mantoux test, etc. were also searched for and asked to repeat if required.

In this period, a total one hundred and eighty five cases (185) were listed. Among these cases, one hundred and twenty cases (128) were males and fifty seven (57) cases were females.

We took care so that one patient is not enrolled twice. Followup was not mandatory in our study for established cases (done only if required for patient's treatment purpose and if investigations were required to confirm diagnosis).

RESULTS

	Male (Number)	Female (Number)	Total (Number)
Central Serous Chorioretinopathy (CSCR)	78	28	106
Nontraumatic vitreous haemorrhage (mainly vasculitis and two cases of valsalva retinopathy- one in male and another in female)	22	8	30
Optic neuropathy/neuroretinitis (one case of neuroretinitis in male)	4	8	12
Chorioretinitis, intermediate and posterior uveitis	2	1	3
Retinal Veno-Occlusive (RVO) diseases	9	5	14
Rhegmatogenous Retinal Detachment (RRD)	9	3	12
Amaurosis fugax	0	3	3
Choroidal neovascular membrane	1	1	2
Toxic amblyopia	3	0	3

Table 1. Causes of Unilateral Visual Disturbances

DISCUSSION

In our study, we have got total 106 cases of CSCR out of 185 cases. It means in our study around 57.30% cases are due to CSCR among all cases of unilateral nontraumatic sudden painless loss of vision. The incidence of CSCR is not known in India. From a large population-based study by Kitzmann et al,[6] the incidence of CSCR in Olmsted County, Minnesota, from the period of 1980-2002 found the mean annual age-adjusted incidence of CSCR to be 9.9 cases per 1,00,000 population for men and 1.7 cases per 1,00,000 population for women. G Liew et al[7] also reviewed the epidemiology of CSCR in Australia. They found an incidence rate of 10 cases per 1,00,000 population in men. The rate of CSCR in this study was 6-fold higher in men than in women.

On the other hand in a large population base study in Taiwan, the mean annual incidence was 0.21% (0.27% for males and 0.15% for females; P<0.001) with a male/female ratio of 1.74. The incidence rate in an Asian population of study was therefore approximately 4 times higher than that in a predominantly Caucasian population if we compare the data Kitzmann et al.[6]

We cannot calculate our data to determine the incidence of CSCR as we are not doing population survey. But, we can compare the data with the data of other hospitals as available.

Study Name	Year	Place of Study	Number of Years	Number of CSCR Patients Attended During this Period	In One and a Half Year Duration, the Number of Patient Should be (Average)
Central serous chorioretinopathy- a seasonal variation?	January 1969 and December 1979	Wills Eye Hospital, Philadelphia	11 years	345	47.04
Frequency of systemic risk factors in central serous chorioretinopathy	July 2011 to June 2014	Armed Forces Institute of Ophthalmology (AFIO), Rawalpindi, Pakistan	3 years	42	14

A 10-year study of central serous chorioretinopathy-recurrence rate and factors affecting recurrence	January 1999 and December 2008	Giridhar Eye Institute, Kadavanthra, Cochin-682020	10 years	752	112.8
Clinical scenario of central serous chorioretinopathy in rural setup	September 2012 to September 2014	Department of Ophthalmology, Mamata Medical College, Khammam, Telangana, India	2 years	50	37.50
Central serous chorioretinopathy in younger and older adults		New York	18 months	130	130

Table 2

The diagnosis of CSCR in the study, Giridhar Eye Institute, Kadavanthra, was made clinically using the binocular indirect ophthalmoscope and by biomicroscopic examination of the retina using 78 Dioptre lens. Localised neurosensory retinal detachment with no other surrounding abnormalities was diagnosed as CSCR. Patients with less than one month follow-up and chronic steroid users were excluded from the study.

In our study, followup was not mandatory and also we included patients with unilateral disease of 20-50 years of age group. So, exact number of patients in the age group of 20-50 years in the study of Giridhar Eye Institute should be less.

In the study of central serous chorioretinopathy in younger and older adults 130, 62 of these 130 patients were older than 50 years of age. Thus, these were not predominantly young patients with CSR who had been observed as they aged. So, they had only 68 patients <50 years of age.

So, from the above data, we can say that in these one and a half year period, we have got an increased number of CSCR patients (20-50 years of age) in our OPD, in comparison to available hospital datas.

Vitreous Haemorrhage- Vitreous haemorrhage is a relatively common cause of acute vision loss having an incidence of approximately 7 cases per 1,00,000. Indeed, the most common presentation of Eales disease is a sudden painless loss of vision because of vitreous haemorrhage.[8] In the study done by Kumar Sourav et al found 70 cases (113 eyes) of retinal vasculitis from January 2007-December 2009 (2 years) in a tertiary care center in Eastern India.[9] They had 27 cases with unilateral disease. Eales disease is reported in one in 200 to 250 ophthalmic patients in India.[10] It is a rarity in developed world.[11] But, this data is a community-based data. We have seen total 49,512 patients in our OPD for that one and a half period.

In our study, we have found 28 cases of Eales disease. We did not include cases with bilateral visual disturbances. On the other hand, we included those cases, which had peripheral disease with no visual disturbance. So, we cannot compare our data with any available data.

Optic Neuritis and Neuroretinitis- Patients with acute demyelinating ON are typically healthy young adults. Female preponderance is observed with a ratio of approximately 3:1.[12] The incidence has been reported to be ranging from 1.4 to 6.4 per 1,00,000 populations.[13,14] In India and other Asian countries, the incidence of MS is reported to be low.[15] Saxena et al[16] in their study observed 83 patients with optic neuritis in a tertiary centre of India in 3 years. So, if we consider it, it comes around 28. Earlier, Jain IS et al[17] observed in their study that the commonest affected age group was between 20-40 years (62%) and (38%) patients, the disease was unilateral and in 26 (62%), it was bilateral. So, if we consider only unilateral cases, then it should be around 10.64 in the study done by Saxena et al.[16] In our study also, we have found 11 cases of optic neuritis in one and a half year. So, our data is corroborating with the findings of Saxena et al.[16] In our study, female:male ratio is 2.66:1. Neuroretinitis occurs more often in the third and fourth decades of life with no gender predilection and it is mostly unilateral.[18,19] We did not found data to compare our results.

RVO- Up to 16% of all instances of Central Retinal Vein Occlusion (CRVO), 10% of all Hemicentral Retinal Vein Occlusion (HRVO), and 1% to 5% of all Branch Retinal Vein Occlusion (BRVO) occur in younger patients.[20] Sophie Rogers et al[21] estimated an age and sex-standardised prevalence of 4.42 per 1000 persons for BRVO and 0.80 per 1000 persons for CRVO.

Fiebai B et al[22] found 364 patients of RVO in a 5 years period in retina clinic of University of Port Harcourt Teaching Hospital, Port Harcourt, Nigeria.

It means they have seen around 109.2 patients per year, one and a half year on an average. In their study, they found 7 patients who had bilateral RVO.

As RVO affect older individuals with most studies reporting the majority of retinal vein occlusions in adults over 60 years of age. A minority of patients around 10% to 15% are typically younger than 50 years of age representing a significant number of working-aged adults. RVO affect

older individuals, so from the above data, we can say that Fiebal B et al[22] had included around 10.92 to 16.38 patients per one and half year where the age group was below 50 years.

M.D. Tsaloumas et al[23] in a follow up trial found 549 patients (with a definitive diagnosis of RVO were restudied in 1994 with a follow-up period from 1 to 12 years; mean follow-up 9.08 ears) of RVO in 7 years. So, they included 117.64 patients per one and a half year. So, they included 11.76 to 17.65 patients younger than 50 years per one and a half years.

In our study, we have found 14 cases of RVO. So, our data is corroborating with other's findings.

Retinal Detachment- Tsedeke Asaminew et al[24] in their study included 94 eyes of 80 patients with retinal detachment over 6 months period with a male:female ratio of 2.6:1. So, they included 66 patients with unilateral detachment. The mean age was 41.4 years (SD ± 16.5). They found RRD in 55 eyes and tractional RD in 22 eyes. Out of 55 eyes of RRD, 32 had ocular trauma (58.18%). So, nontraumatic RRD cases were 23. They included cases between 7-90 years. 44% of their patients were in the age group of 20-50 years. So, they should found around 29.04 eyes with unilateral RRD. So, the number of patients with unilateral nontraumatic RRD in the age group of 20-50 years should be 12.14.

In our study also, we have found 12 cases of nontraumatic RRD in one and a half year with male:female ratio of 3:1- It is an agreement with other studies.

Chorioretinitis, intermediate and posterior uveitis, amaurosis fugax, choroidal neovascular membrane, toxic amblyopia- Data regarding these diseases is very low to compare. So, we could not compare our data with available other datas.

CONCLUSION

If we compare our OPD data with the available data from other hospitals, we can correlate it with few diseases including CSCR. It seems that CSCR is increasing in Malda district. Though the exact cause of this increased finding is not clear. Rapid urbanisation leading to change in lifestyle and increased mental stress maybe a factor. Further studies are required to confirm it.

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