e-ISSN: 0975-1556, p-ISSN:2820-2643

Available online on www.ijpcr.com

International Journal of Pharmaceutical and Clinical Research 2022; 14(8); 68-73

Original Research Article

A Study on Clinical Profile of Unilateral Disc Edema

Vinay Reddy Jitha[1], P. Ramapathi Rao[2], S. Deepa[3]

[1,2,3]Assistant Professor, Department of Opthalmology, Dr Patnam Mahender Reddy Institute of Medical Sciences, Chevella, Hyderabad

Received: 25-06-2022 / Revised: 20-07-2022 / Accepted: 10-08-2022
Corresponding author: Dr. Vinay Reddy Jitha
Conflict of interest: Nil

Abstract

Background: Optic disc edema is swelling of intraocular portion of the optic nerve. Disc edema is an ophthalmoscopic finding defined by unilateral or bilateral swelling of the optic disc. Unilateral disc edema can be inflammatory, ischemic, compressive or infiltrative. It may also be an eye opener for detection of certain systemic diseases.

Aim and Objectives: To know the clinical profile of Unilateral Disc Edema.

Material and Methodology: This was an observational prospective study conducted in the department of ophthalmology, Dr. Patnam Mahender Reddy Institute of Medical Sciences, Chevella, Hyderabad, for the period of one year. We have included 60 Patients presenting with unilateral disc edema and males and females between the age of 20 -65 years.

Results: 60 patients, among them 34(56.7%) of the patients were female and 26(43.3%) of the patients were male, half of the patients were belonged to the age group of 30 – 40 years and mean age of all the patients was 38.56 with standard deviation of 6.42. The commonest cause for unilateral disc edema is non arteritic AION and the next common cause is optic neuritis. it was observed that NAION affects age group between 40 -50 years of age and that of optic neuritis affecting between 20 -30 years of age group. Most common presenting complaint was Diminution of Vision (DOV) in 47 % cases followed by headache in 50 % cases.

Conclusion: patients with unilateral disc edema, NAION and optic Neuritis should be considered as first among various diagnosis and these diagnosis are common in age group of 40-50 years of age. Differentiating NAION and optic neuritis is very essential because for each of the diagnosis treatment condition is different.

Keywords: Unilateral Disc Edema, NAION, Diminution of Vision, optic neuritis

Introduction

Optic disc edema is swelling of intraocular portion of the optic nerve. The axons of retinal ganglion cell which forms the nerve exit the eye through scleral lamina cribrosa and convey the visual signal to the occipital cortex. Disc edema is an ophthalmoscopic finding defined by unilateral or bilateral swelling of the optic disc. The compression of the fibres in the lamina cribrosa leads to tissue edema and increases intercellular matrix pressure [1]. There are several synonyms used to describe this finding including papillitis, papilledema, swollen or choked discs, and the most commonly used term – optic disc edema (ODE). Optic disc edema presents with a buldging of the optic disc seen on fundus exam and may lead to loss of

vision. Although differential diagnosis of ODE includes various diseases, determination of cause is critical because of the many possible vision- or life-threatening diseases. Generally, most cases with bilateral ODE are considered to be caused by elevated intracranial pressure and should undergo a neuro-imaging examination or seek consultation at a department of neurology or neurosurgery. On the other hand, unilateral ODE is considered to be mainly caused by ocular conditions, such as anterior ischaemic optic neuropathy (AION) or optic neuritis (ON).

Unilateral disc edema can be inflammatory, ischemic, compressive or infiltrative. It may also be an eye opener for detection of certain systemic diseases. Hence, it is very essential for an ophthalmologist to clinically evaluate and differentiate the causes of disc edema.

The presenting signs and symptoms will be different depending upon the cause of the disc edema and the work up for that also should be individualized based on the history and the examination finding. The management and prognosis depends upon the etiology of the disc edema [2]. In most cases the vision can be preserved with appropriate and prompt treatment. If the disc edema is left untreated it can lead to permanent and irreversible blindness due to optic atrophy.

Thus we have undertaken present study to know the clinical profile of Unilateral Disc Edema

Materials and Method

This was an observational prospective study conducted in the department of ophthalmology, Dr. Patnam Mahender Reddy Institute of Medical Sciences, Chevella, Hyderabad, for the period of one year. We have included 60 patients in the study after getting informed consent and institutional ethical approval from committee and following inclusion and exclusion criteria given bellow.

Inclusion Criteria

- Patients presenting with unilateral disc edema.
- Both males and females of age 20 - 65 years.

Exclusion Criteria

- Patient with bilateral presentation and papilledema.
- Age < 20 years.
- Patients who has not given consent for the study

Methodology

Patients presenting to Squint & Neuro Ophthalmology services were registered. All patients underwent a complete medical evaluation including careful history taking, ophthalmic examination, complete blood count, blood sugar, urea, creatinine, serum lipid profile, thyroid, chest x-ray in specific cases. and CSF analysis (including opening pressure). Visual acuity was measured using Snellen's acuity chart and converted to logmar for the purpose of statistical analysis. Slit lamp bio microscopy of anterior segment, fundus with +90D lens. Intraocular pressure, Direct and Indirect Ophthalmoscopy, Fields using automated perimetry, Colour vision using ishihara chart were done.

Statistical Analysis : Data were collected with the help of pre-structured questionnaire and data were entered in the Microsoft excel for further analysis. Quantitative data were expressed in the form of mean and standard deviation and qualitative data were expressed in the form of frequency and proportions.

Results:

Our study conducted in the department of Ophthalmology, in which we have included 60 patients, among them 34(56.7%) of the patients were female and 26(43.3%) of the patients were male. We have observed that half of the patients were belonged to the age group of 30 – 40 years

of age and 18.3% of the patients were belonged to the each of age group 41 – 50 years of age and more than 50 years of age. Only 8 patients were there belonged to the 20-30 years of age group. It meant that maximum patients were suffered had age more than 30 years, and mean age of the all patients was 38.56 with standard deviation of 6.42 (Table 1)

Table 1: Demographic distribution of study population

Parameters	Frequency	Percentage
Age		
20 - 30 Years	8	13.4
31 - 40 Years	30	50
41- 50 Years	11	18.3
> 50 Years	11	18.3
Gender		
Female	34	56.7
Male	26	43.3

Table 2: Distribution of diagnosis among the study population

Diagnosis	Frequency	Percentage
NAION	32	53.33
Compressive Neuropathy	6	10
Inflammatory Neuropathy	6	10
Neuroretinitis	6	10
Optic Neuritis	10	16.67

It is evident from the study, the commonest cause for unilateral disc edema is non arteritic AION and the next common cause is optic neuritis. Compressive disc edema, inflammatory disc edema and neuroretinitis were the other conditions causing unilateral disc edema.

We have observed that mean age for the patients diagnosed with non-arteritic AION was 47 years with standard deviation of 4.23 years, that of the patients diagnosed with optic neuritis was 29.42 years with standard deviation of 3.49 years, so it was observed that NAION affects age group between 40 -50 years of age and that of optic neuritis affecting between 20 -30 years of age group.

All the cases in our study had unilateral affection of the disease. There is no specificity of the eye involved. Both eyes were equally affected in the study group.

Table 3: Distribution of symptoms among the study population

Symptoms	Frequency	Percentage
DOV	28	47
DOV + Headache	7	12
DOV + Pain	1	2
Pain + Headache	2	3
DOV +Pain + Headache	2	3
Headache	21	35

Most common presenting complaint was Diminution of Vision(DOV) in 47 % cases followed by headache in 50 % cases , DOV and headache in 12% cases, each of Pain +Headache and DOV +pain + Headache in 3% cases showed in table no 3.

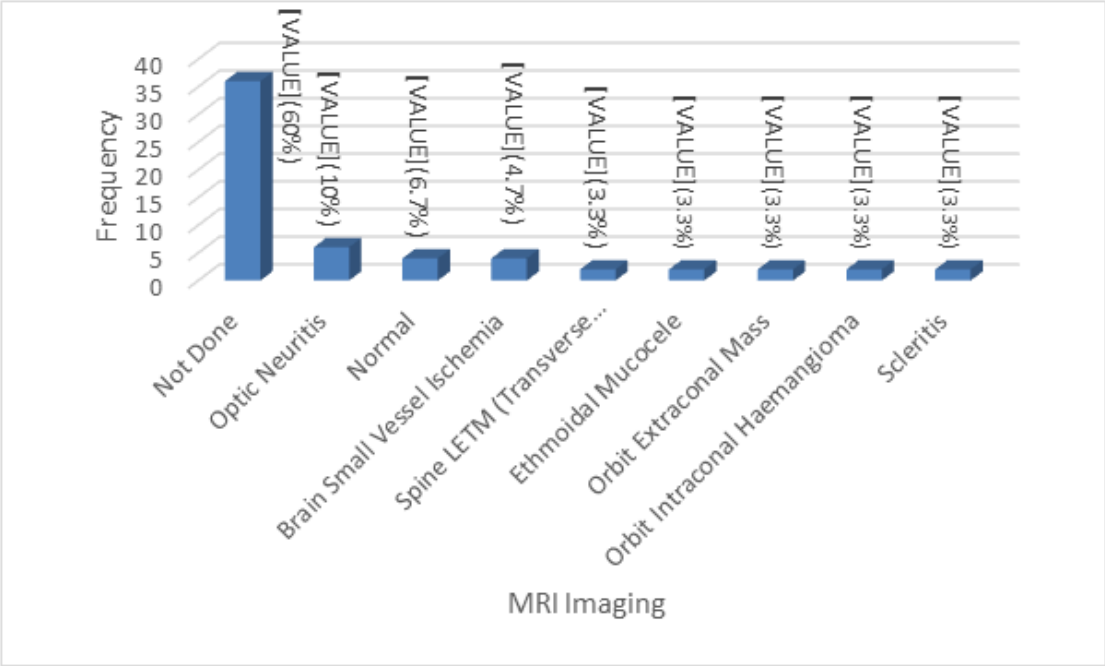

Figure 1: Distribution of MRI imaging among the study population

MRI imaging was needed only in 40 % of the patients. It was 100% useful in compressive neuropathy and also aided in diagnosing optic neuritis in some patients. It also helped in diagnosing longitudinally extensive transverse myelitis which was an important sign in diagnosing neuromyelitis Optica. MRI BRAIN in NAION showed small vessel ischemic changes in 6.67% of persons which indicates the ischemic change were also noted in brain.

Discussion:

In our study we have included total patients presenting with unilateral optic disc edema in the department of Ophthalmology of our institute for the period of one year. In our study we observed that mean age of the all the patients was 38.56 years with standard deviation of 6.42 years which supports the study conducted by Urfalioglu et al [3], study showed that females were more affected by optic disc edema compared to male, which is supported by Urfalioglu et al. and Parajuli A et al [3,4].

Our study diagnosed there were 53.33% of the patients were with non- anterior ischemic optic neuropathy(NAION), followed by optic Nuritis 16.67% and others as shown in above tables in results, Jong Jin Jung, Seung-Hee Baek and et al [2] conducted the study called Analysis of the Causes of Optic Disc Swelling and its result showed that the most common cause with optic disc edema was NA- AION and the second most common cause was ON. There was no case of arteritic AION in this study. The NA-AION was diagnosed at an older age in this study and the common type of field defect in NA-AION was an inferior altitudinal defect. Optic neuritis was associated with a better prognosis than NA-AION. The compressive optic neuropathy causing disc edema is only 6.1%, also inferior altitudinal defect is the most common field defect associated with NAION and optic neuritis has better prognosis compared to NAION. In Present study compressive disc edema was observed in 10% of the patients compared to the above study which is 6.1%.

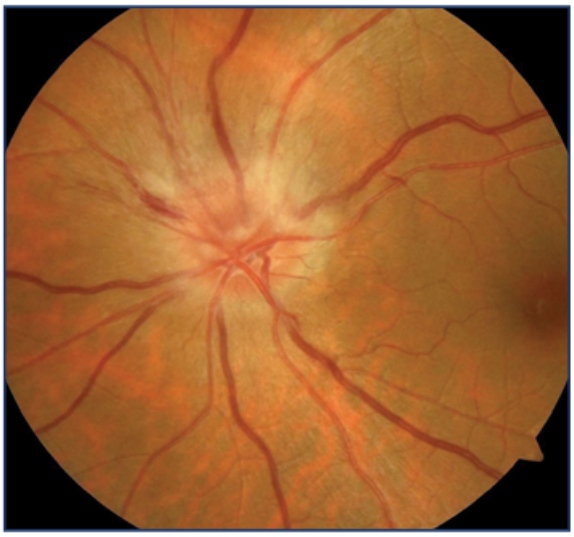

Figure: Patients of age 48 years with NAION

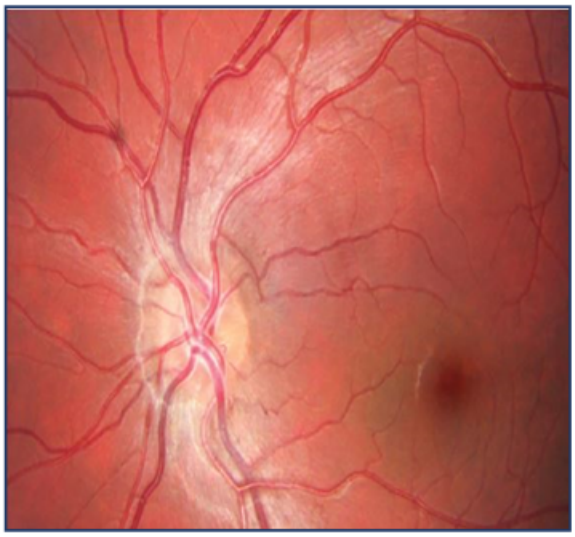

Figure: Patients of age 52 years Optic Neuritis

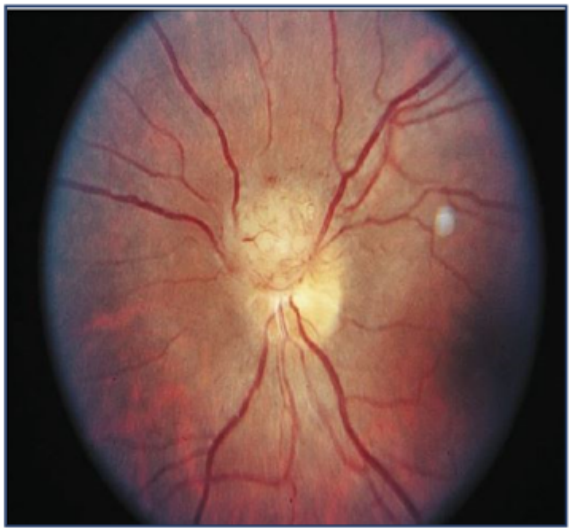

Figure: Patients of age 53 years with Inflammatory Neuropathy

Figure: Patients of age 58 years with Neuroretinitis

Our study observed that inferior altitudinal defect was seen in 30.25% of the NAION, the inferior quadrantanopia and paracentral scotoma were seen in 6.50% of NAION and also these results are supported by study conducted by Hayreh SS, Zimmerman B. [5]

Our study found that most common symptom was DOV which was 47%, followed by headache which was among 21(35%) patients, study conducted by Meena et al observed headache was most common symptoms reported in her study also study supported by other studies [6, 7, 8]. helped in diagnosing longitudinally extensive transverse myelitis which was an important sign in diagnosing neuromyelitis Optica. MRI BRAIN in NAION showed small vessel ischemic changes in 6.67% of persons which indicates the ischemic

change were also noted in brain.

Preechawat P, Bruce BB et al [9] studied the characteristics of NAION in patients younger than 50 years. They concluded that NAION in younger patients is not uncommon and it represents 23% of AION. In our study also NAION was common in age group between 40 -50 years of age. [10]

Conclusion:

After observing results and discussion with other studies this study concludes that patients with unilateral disc edema, NAION and optic Neuritis should be considered as first among various diagnosis and these diagnosis are common in age group of 40-50 years of age. Differentiating NAION and optic neuritis is very essential because for each of the diagnosis treatment condition is different. A detailed history taking, visual field, color-vision and imaging tests should be performed for each and every case of unilateral disc edema. Regular follow-up examination would be necessary for all cases to look for visual recovery and recurrence.

Acknowledgement : None

Funding : None

References :

1. Selhorst JB, Chen Y. The optic nerve. Semin Neurol. 2009 Feb;29(1):29- 35.
2. Jong Jin Jung, Seung-Hee Baek Analysis of the Causes of Optic disc swelling. 2011 Feb; 25(1): 33–36.
3. Urfalioglu S, Ozdemir G, Guler M, Duman GG. The evaluation of patients with optic disc edema: A retrospective study. North Clin Istanb 2021;8(3): 280–285.
4. Parajuli, A., Sharma, A. K., & Sitaula, S. A Clinical Study of Optic Disc Edema in a Tertiary Eye Center of Nepal. Nepalese Journal of Ophthalmology, 2019:11(2), 122–129.
5. Hayreh SS, Zimmerman B. Visual field abnormalities in nonarteritic anterior ischemic optic neuropathy: their pattern and prevalence at initial examination. Arch Ophthalmol. 2005;123:1554–1562.
6. Digre KB, Corbett JJ. Idiopathic intracranial hypertension (pseudotumorcerebri): A reappraisal. Neurologist. 2001;7:2–67.
7. Wang SJ, Silberstein SD, Patterson S, et al. Idiopathic intracranial hypertension without papilledema: A case-control study in a headache center. Neurology. 1998;51:245–249.
8. Vieira DS, Masruha MR, Goncalves AL, et al. Idiopathic intracranial hypertension with and without papilloedema in a consecutive series of patients with chronic migraine. Cephalalgia. 2008;28:609–613.
9. Preechawat, bruce et al Anterior Ischemic Optic Neuropathy in Patients Younger than 50 Years January 2008 j.ajo.2007.07.031
10. Berthelot M., Rieker A., & Correia J. C. The difficulties experienced by patients with low back pain in France: a mixed methods study. Journal of Medical Research and Health Sciences, 2022:5(6), 2039–2048.