

ORIGINAL RESEARCH

Ocular causes and clinical profile of patients presenting with Headaches in Ophthalmology Out patient department in a tertiary care center in Rajasthan

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ABSTRACT

Purpose: Headache is the most frequent presenting symptom encountered in ophthalmological practice. However, it can be an alarming indicator in many neurological disorders and be a potential sign for intervention. The study emphasizes on assessing the etiology of headaches and illustrating the ocular causes.

Methods: Our study was a cross sectional, observational study conducted at a tertiary care center over 3 months of duration. Demographic data were collected for all the patients presenting to ophthalmology OPD with primary complaint as Headache along with comprehensive history and detailed ocular examination including Visual acuity, Refraction, Intraocular pressure measurement, Slit lamp examination and fundus evaluation. Cross references from other specialties like ENT, medicine, dentistry, and neurology were taken.

Results: Out of 250 subjects in our study, 391 patients (78.2%) directly attended the ophthalmology OPD with headache. In contrast, 109 (21.8%) were referred from other (ENT, Medicine, Dental, Neurology, Surgery) specialties to ophthalmology OPD because of evaluation of headache.

Conclusions : A wide range of diseases must be kept in mind when working up patients with headaches with or without ocular pain or visual disturbances. Our study assisted in differentiating and estimating the burden of ocular and non-ocular causes of headaches. Hence, the ophthalmologist is mostly the first physician to triage these patients.

Keywords: Headache; Primary; Ophthalmic; Benign; Refractive errors; Causes

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INTRODUCTION

Headache is defined as the pain located above orbitomeatal line.^[1]The most frequent but non-specific complaint with which patients present to ophthalmic OPD all over the world in present times is Headache affecting the productivity and quality of life significantly^[2]. Primary headaches can present as ocular symptoms, while secondary headaches involve visual pathways^[3]. Because of this unique and intricate dynamics between the nervous system and eye, Headache more often than not is considered by patients as an ocular complaint and symptom.^[4]

Although it is a common complaint, it is often misdiagnosed and inadequately treated. Differential diagnosis of headache is probably one of the longest in all of the diseases. Headaches that present to an ophthalmologist include migraine, facial pain syndromes, and pain associated with cranial

neuropathies, orbital and ocular disease. The most common definable headache syndromes are those designated as migraine, with a prevalence of 5-25% and a marked female preponderance.^[5]

Many a times patients are unable to differentiate a headache from periocular pain, and it should also be kept in mind that headaches with asthenopic symptoms may be because of uncorrected refractive errors^[6]. A headache may also sometimes be life-threatening, as in a hypertensive emergency, benign intracranial hypertension, or intracranial space-occupying lesions where ophthalmic opinion aids the diagnosis and management^[3]. Benign headaches, such as migraine, keratitis, glaucoma, and sinusitis, need constant follow up and attention for diagnosis and management^[7].

Patients complaining of headaches encountered in ophthalmic practice can present directly or be referred

from other specialties like ENT and Neurology. Though ophthalmic evaluation is included in investigating the headache patient, not all are of ophthalmic origin. Thus, this study intends to explore the profile of ophthalmic causes in patients with a headache and to establish the importance and necessity of ocular examination in such patients.

Materials and Methods

Study Design: Teaching Hospital based Cross-Sectional study

Study duration: A total of 3 months from January 2020 to March 2020

Study Area: The study was conducted in tertiary care teaching hospital in Department of Ophthalmology at S.P. Medical College, Bikaner.

Study Participants: All the patients who were reporting to Ophthalmology OPD for different causes of headache

Sample Size: A total of 250 study participants were enrolled in the present study

Methodology: All the participants who were reported to Ophthalmology OPD for headache were included in the study. The participants were explained the purpose of the study. The informed consent was taken from the study participants. A pre-designed, structured questionnaire was used. A comprehensive history was taken regarding the onset, duration, location, intensity, character, diurnal variation, and any exaggerating and relieving factors. Occupation of each patient was also recorded. Refraction was tested

for every patient along with IOP, slit lamp examination and fundus evaluation.

Statistics: Data was entered and analyzed in Microsoft Excel. Data was presented with frequencies and proportions and was analyzed using IBM SPSS version-22 software. Categorical data was represented in the form of frequencies and proportions. Continuous data was expressed as mean and standard deviation.

RESULTS

Of 250 subjects in our study, 172(68.80%) were female, and 78 (31.20%) were males. 40.4% of the subjects were in the 16-30years age group, followed by 24.4% in the 5-15years age group, 17.4% in the 31-45years age group, 8.6% in the 46- 60years age group, and 9.2% in more than 60years age group. 163(65.2%) patients had ocular causes responsible for Headache as compared to 87(34.8%) who had non-ocular causes leading to headache (Figure 1). 194 (77.6%) patients directly attended the ophthalmology OPD with headaches. In contrast, 56 (22.4%) were referred from other (ENT, Medicine, Dental, Neurology, Surgery, etc.) departments to ophthalmology OPD because of the evaluation of headache (Figure 2). 68 patients (27.2%) presented with associated ocular symptoms like asthenopia, burning in the eye, ocular pain, conjunctival congestion, and colored halos along with headache. Out of the 163 patients with ocular causes of headache, 131 patients presented directly to the Ophthalmology Department while 32 were referred from other departments(Figure 2).Further headaches due to medical causes were present in 23% of the subjects, ENT was the cause in 13%, and headache due to other causes was present in 8.4%.

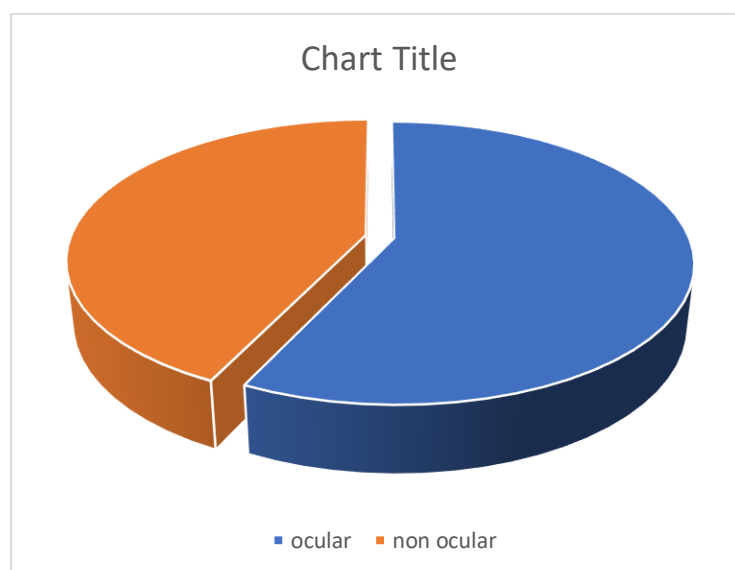


Figure 1: Pie chart showing distribution of Ocular and non-ocular Headaches

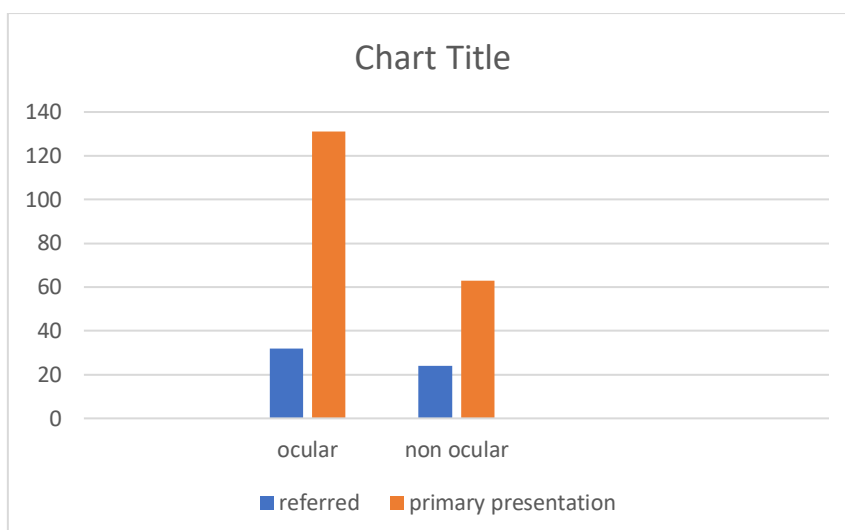


Figure 2: Division of ocular and non-ocular cases with reference to primary presentation vs referral

Table 1: Distribution according to ocular causes of Headache

Ocular causes of headache	Number (total -163)	Percentage
Refractive errors	88	53.98%
Computer vision Syndrome	32	19.63%
Glaucoma	14	8.5%
Anterior Segment Pathology	12	7.36%
Herpes Zoster Ophthalmicus	4	2.45%
Neuro-ophthalmic causes	5	3.06%
Periocular Causes	8	4.90%

On further elucidating the ocular causes for headaches, the most frequent cause of headache was found to be refractive errors in 88 patients (53.98%) closely followed by Computer vision syndrome (19.63%). Glaucoma was another major cause of headache at 8.5% followed by Anterior segment causes like keratitis, trauma, foreign body, and corneal edema in 7.36%. Other less common causes like uveitis and herpes zoster ophthalmic were seen with more ocular symptoms and less headache. The difference in the etiological factors of headache and age group was not found to be statistically significant.

DISCUSSION

Benign headaches like migraines are usually more bothersome in daily activities affecting the lifestyle significantly while headaches due to neurological causes have false localizing signs such as ocular pain or visual problems and can go unnoticed till late in course. In our study, 40.4% of the subjects were in the 16-30 years age group, followed by 24.4% in the 5-15 years age group, 17.4% in the 31-45 years age group, 8.6% in the 46-60 years age group, and 9.2% in more than 60 years age group. Age distribution quite similar to our study was reported in a prospective study by Jain S et al., where the maximum patients (47%) were 16-30 years old^[2]. Studies by Dhir^[8] and Ahmed and Zuberi^[9] found the maximum incidence of headache in the age group of 20-30 and 15-20 years, respectively. Marasini et al. reported that in the non-presbyopic adult group, headaches are as

common as being present in every six patients out of ten^[10]. The reasons could be multifold.

In our study, 68.80% of the subjects were female and 31.20% were male. Similar observations were seen in a study by Jain S et al., where female preponderance (56%) was noted, which may be attributed to females' psychological and emotional stress^[2]. In most of the studies published like by Marasini et al. and Dhir et al, females were more than males.^[10]

In our study, Headaches due to medical causes were present in 23% of the subjects, ENT was the cause in 13%, and headache due to other causes was present in 8.4%. Few studies, like Queiroz et al.^[11] found the prevalence of primary headache in the general population as 37.2%, and the rest had secondary causes. This was in contradiction to our study's observations.

In our study, among ocular causes for headache, the most frequent cause of headache was found to be refractive errors in 88 patients (53.98%) closely followed by Computer vision syndrome (19.63%). Glaucoma was another major cause of headache at 8.5% followed by Anterior segment causes like keratitis, trauma, foreign body, and corneal edema in 7.36%. Other less common causes like uveitis and herpes zoster ophthalmic were seen with more ocular symptoms and less Headache. In a study by Jain S^[2] the frequency of ophthalmic causes were refractive error, including presbyopia, was seen in 65% of cases, followed by anterior segment abnormalities in

21%, muscle imbalance in 18%, and diseases of the posterior segment in 5% of cases.

Marasini et al^[10] found the highest incidence of headache associated with refractive errors in 44% of cases; astigmatism was observed in 63.63% of subjects, hypermetropia in 27.27%, and myopia in 9.09% of cases. Kaimbo et al reported that 12% of patients with anterior segment disease, such as glaucoma and uveitis, are associated with headache^[12]. The reason is that any ocular inflammatory disease and acute rise in intraocular pressure may cause pain in and around the eye and also cause headaches^[13].

A study based on causative factors for headaches reported by Uzma Fasih et al. showed ocular cause to be 3 times more than non-ocular^[4]. There are not many published studies showing this observation. Hence, our study is one such study where this data on the frequency of ocular causes in headache patients is studied and when the patient needs an ophthalmic reference. This is intended to be a tool for guidelines on referral and management for a treating physician. This study supports the student to understand how to evaluate a case of a headache from the ophthalmological point of view.

CONCLUSION

Headaches can often be present due to ophthalmic related etiology, hence highlighting the absolutely indispensable role of the ophthalmologist in the diagnosis and planning effective management. A comprehensive history and complete ocular examination can give important clues about the cause of Headache and required management and are an essential for every case of headache. In addition, adopting a multidisciplinary approach is of paramount importance, to identify the accurate cause of Headache so that potentially life-threatening conditions that require immediate intervention that can present as headache are not missed.

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