



ORIGINAL ARTICLE

Ocular morbidity on headache ruled out of systemic causes—A prevalence study carried out at a community based hospital in Nepal

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KEYWORDS

Binocular vision anomalies;
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Abstract

Purpose: The association between ophthalmic anomalies and headache still needs to be investigated largely. We aimed to look for it in the context of a rural community hospital of Nepal. **Methods:** Hundred patients with headache were investigated for ophthalmic anomalies after the probable systemic association was ruled out. All the patients were first examined by general physician, otorhinolaryngologist and psychiatrist. Ocular evaluation consisted of detailed refractive, binocularity assessment and anterior and posterior segment examination. Data were analyzed using *t*-test, chi-square test, multiple logistic regression, odds ratio as well as frequency and percentages.

Results: Female above the age of 17 suffered more ($p < 0.05$). Frontal headache was more common than occipital ($p > 0.05$). In students and housewives frontal headache was more common (OR 3.467, 0.848–14.174; 95% CI and 1.167, 0.303–4.499; 95% CI). Refractive error was associated with frontal headache (OR, 1.429, 1.130–0.806, 95% CI). On presentation, 88% had visual acuity 6/9 or better. Forty-four percent had refractive error among whom astigmatism was more frequent (63.63%) followed by hyperopia (27.27%) and myopia (9.09%). Known eye problems were significantly associated with refractive error and binocular vision anomalies ($p < 0.001$). Convergence insufficiency (16.25%) and fusional vergence (11.25%) deficiencies were common among unstable binocularity.

Conclusion: Ocular anomalies co-exist with headache complains very frequently. Refractive and binocular vision anomalies need to be largely investigated in all headache patients. It is important to get a good headache history so that patients can be referred to the appropriate specialist.

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PALABRAS CLAVE

Anomalías de visión binocular;
 Insuficiencia de convergencia;
 Cefalea;
 Errores de refracción

Morbilidad ocular sobre cefalea descartada entre las causas sistémicas: estudio de prevalencia llevado a cabo en un hospital de una comunidad en Nepal
Resumen

Objetivo: La asociación entre anomalías oftálmicas y cefalea todavía debe investigarse a fondo. Nuestro objetivo fue examinarlo en el contexto de un hospital de una comunidad rural de Nepal.

Métodos: Se examinaron cien pacientes con cefalea en busca de anomalías oftálmicas una vez descartada una posible asociación sistémica. Todos los pacientes fueron explorados por un médico general, un otorrinolaringólogo y un psiquiatra. La evaluación ocular consistió en un examen detallado refractivo de la binocularidad y un examen del segmento anterior y posterior. Los datos se analizaron utilizando la prueba de la t , la prueba de la χ^2 al cuadrado, regresión logística múltiple, razón de probabilidades, así como frecuencia y porcentajes.

Resultados: Las mujeres mayores de 17 años sufrieron más ($p < 0,05$). La cefalea frontal fue más frecuente que la occipital ($p > 0,05$). En estudiantes y amas de casa fue más frecuente la cefalea frontal (OR 3,467, 0,848 - 14,174; IC del 95% y 1,167, 0,303 - 4,499; IC del 95%). El error de refracción se asoció con cefalea frontal (OR, 1,429, 1,130-0,806, IC del 95%). En la presentación, el 88% tenían una agudeza visual de 6/9 o mejor. Un 40% presentaron errores de refracción, entre los cuales el más frecuente fue astigmatismo (63,63%), hipermetropía (27,27%) y miopía (9,09%). Los problemas oculares conocidos se asociaron de manera significativa con error de refracción y anomalías de visión binocular ($p < 0,001$). La insuficiencia de convergencia (16,25%) y los déficits de vergencia fusional (11,25%) fueron frecuentes en la visión binocular inestable.

Conclusión: Las anomalías oculares coexisten muy frecuentemente con casos de cefalea. Las anomalías de refracción y de visión binocular deben investigarse a fondo en todos los pacientes con cefalea. Es importante obtener buenos antecedentes de cefalea para poder remitir a los pacientes al especialista adecuado.

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Introduction

Headache has been defined as the pain located above orbito-meatal line.¹ It is one of the frequent reasons to seek a consultation with health care practitioners.² It is a difficult condition to establish the actual cause. Diagnosis and treatment is often an impossible task without the correct views of etiology.³

Primary headache (headache without underlying disorders) prevalence varies with age, 9–11% in school children.⁴ The preponderance of headache is higher in female. In more than 80% patients, headache starts before age 40 with a lower prevalence rate at an advanced age (>50 years).⁵ Similarly, highly conflicting prevalence has been observed in different countries as 21.2% in the US,⁶ 96% in Denmark,⁷ and past-year prevalence ranges from 13.4% in the US,⁶ to 87.3% in Canada.⁸

The evidence in the literature for a strong association between oculo-visual problems and headache is weak.² Still patients who believe that appropriate ocular examination and treatment help to lessen their headache visit optometrists' and ophthalmologists' very frequently.^{8,9} Headache being one of the most common neurological symptoms has often been associated with Parkinson's disease, multiple sclerosis and myasthenia gravis. Nishimoto et al. revealed that in headache associated with myasthenia gravis, mild ocular symptoms are associated which range from slight degree of diplopia or ptosis which fluctuates dynamically and might lead to the worsening of headache.¹⁰

Harle and Evans report that in migraine headache often binocular vision anomalies in the form of decompensated heterophoria and reduced stereopsis might be present in subtle form.²

Ophthalmological studies on headache have reported the role of different ocular diseases like acute glaucoma, uveitis, optic neuritis¹¹ and visual anomalies like refractive errors and accommodative and vergence deficiencies.¹² The uncorrected refractive errors are often believed to be associated with frontal and/or occipital headache.¹³ Eye strain as a direct cause of headache has long been debated.^{14,15} Very frequently a careful eye examination and a possible correction of the defect has been observed to reduce headache symptoms.¹ Thomas et al. noted that 21% of people with headache consult an eye care practitioner which is almost similar to those (27%) who seek a consultation with a general medical practitioner.⁹ Whittington reported that among more than 1400 consecutive patients attending for refraction, 45% complained of headache.¹⁶

Patients who fail Sheard's criterion (Prism Fusional Vergence less than twice the near phoria) are expected to suffer from headache symptoms.¹⁷ In 1966, Gordon et al.¹⁸ claimed that minor refractive error (RE) often caused more headache and symptoms of eyestrain than major RE. Ciliary muscle strain has also been suggested as possible source of headache.¹⁹ To the authors' knowledge, there has not been any reports on exploring the ophthalmic share of headache symptoms among the Nepalese people who present to a general hospital.

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