Original Research Article

A study on idiopathic intracranial hypertension

Veena Narisetty[1*], Kamera Sateesh Kumar[2], Changala Praveen[3]

[1]Professor and Head, [2]Assistant Professor, [3]Post Graduate
Department of Neurology, Gandhi Medical College and Hospital, Secunderabad, Hyderabad, Telangana, India
[*]Corresponding author email: **veenanarisetty@yahoo.com**

International Archives of Integrated Medicine, Vol. 5, Issue 5, May, 2018.

Available online at http://iaimjournal.com/
ISSN: 2394-0026 (P) **ISSN: 2394-0034 (O)**
Received on: 24-04-2018 **Accepted on:** 04-05-2018
Source of support: Nil **Conflict of interest:** None declared.
How to cite this article: Veena Narisetty, Kamera Sateesh Kumar, Changala Praveen. A study on idiopathic intracranial hypertension. IAIM, 2018; 5(5): 79-82.

Abstract

Background: IIH is defined as an elevated intracranial pressure but no clinical, laboratory or radiological evidence of hydrocephalus, infection, tumor or vascular abnormality.
Aim: To study the clinical and radiological profile of Idiopathic Intracranial Hypertension (IIH).
Materials and methods: Total 31 IIH cases were studied. Patients were subjected to Fundoscopy, CT/MRI brain and CSF analysis.
Results: Females were predominant and Headache was the most common presenting symptom. All patients had papilledema. Mean CSF pressure was 318.1 mm of H_2O. MRI findings included prominent subarachnoid space, vertical tortuosity of optic nerves, flattening of posterior sclera.
Conclusion: IIH predominantly affects women with headache being the most common symptom. Medical management and Life style medication is mostly useful. Surgical management is imperative in patients with impending vision loss.

Key words

Idiopathic intracranial hypertension, Headache, Fundoscopy, MRI Brain, CSF pressure.

Introduction

IIH is defined as an elevated intracranial pressure but no clinical, laboratory or radiological evidence of hydrocephalus, infection, tumor or vascular abnormality. IIH primarily affects young obese women and the estimated incidence in this population is 20 per 100,000 individuals.

Patients with IIH have a constellation of symptoms that includes headaches, transient visual obscurations, pulsatile tinnitus, diplopia,

and sustained visual loss. Headache is the most frequent symptom [1].

The modified Dandy criteria describe clinical, laboratory and radiological findings required for a diagnosis of IIH. The criteria required are (1) symptoms and signs of increased intracranial pressure (e.g., papilloedema and headache), (2) CSF pressure >250 mm H_2O in the lateral decubitus position, (3) no localizing signs with the exception of sixth nerve palsy, (4) normal CSF composition, (5) normal-to-small (slit) ventricles on imaging with no intracranial mass, (6) no unexplained symptoms or signs, (7) exclusion of other causes on specific forms of imaging in particular MRI/venography should be included to rule out intracranial venous sinus thrombosis [2].

The diagnosis of benign intracranial hypertension is in large part clinical, but radiologic and laboratory studies have a role in confirming the diagnosis [3].

Weight loss plays a significant role in IIH management. The first drug of choice in IIH management is acetazolamide, Topiramate, an antiepileptic and a migraine prophylactic, has become increasingly popular as a management option in IIH, Furosemide and other diuretics are sometimes used in IIH, either alone or in combination with acetazolamide. Types of CSF diversion include: lumboperitoneal shunts (LPS) [4] or ventriculoperitoneal shunt (VPS), optic nerve sheath fenestration (ONSF).

Materials and methods

This study was carried out in a Tertiary Care Centre Gandhi Hospital, Hyderabad. Patients presented to Neurology OPD with history of headache were screened. Detailed history and examination were conducted. CT / MRI Brain were performed.

Patients with Papilledema and without Intra cranial mass and without Ventriculomegaly were evaluated for CSF analysis in a lateral decubitus position. CSF pressure was measured along with cell count, protiens and sugars. Total of 31 cases were studied.

Inclusion criteria: Patients with CSF pressure > 250 mm H_2O and Normal CSF analysis were included in the study.

Exclusion criteria: Abnormal CSF analysis, CSF pressure <250 mmH_2O, Mass lesion or ventriculomegaly on imaging.

Results

Out of 31 cases, 5 were Males and 26 were Females (**Figure – 1**). All patients had papilledema. Mean age was 28.55 years. Most common presenting symptom was Headache and Vomiting (**Figure – 2**). Other symptoms included Diplopia and 16 patients had visual blurring. VI^{th} cranial nerve palsy was found in 8 patients.

Mean CSF pressure was 318.1 mm of H2O. Patients with visual blurring had higher mean CSF pressures of 337.8 mm of H_2O. Mean CSF pressure in patients with VI cranial nerve palsy was 357.5 mm of H_2O.

MRI findings were abnormal in 23 patients and included prominent subarachnoid space, vertical tortuosity of optic nerves, flattening of posterior sclera and empty sella.

Discussion

Benign intracranial hypertension (BIH) also known as idiopathic intracranial hypertension (IIH) or pseudotumor cerebri, is a cause of progressive visual loss in children and young adults.

IIH is a disease mostly affecting females and there is a clear female preponderance in previous studies done [5]. This study consisted of 83.8% Females in accordance with previous studies.

In our study we found Headache was most common presenting complaint. In a study on symptom and disease association in IIH in 50

patients by Giuseffi [6] also reported Headache (94%) as most common symptom. Contreras-Martin, et al. [7] found in their study that 52(85.25%) of the 61 patients with IIH presented headache. Ayush Dubey [8] study reported headache was the most common presenting complaint found in 13 (92.9%) cases, followed by blurring of vision in 11 (78.6%) cases, diplopia was found in 8 (57.1%) cases.

Figure - 1: No of males and females.

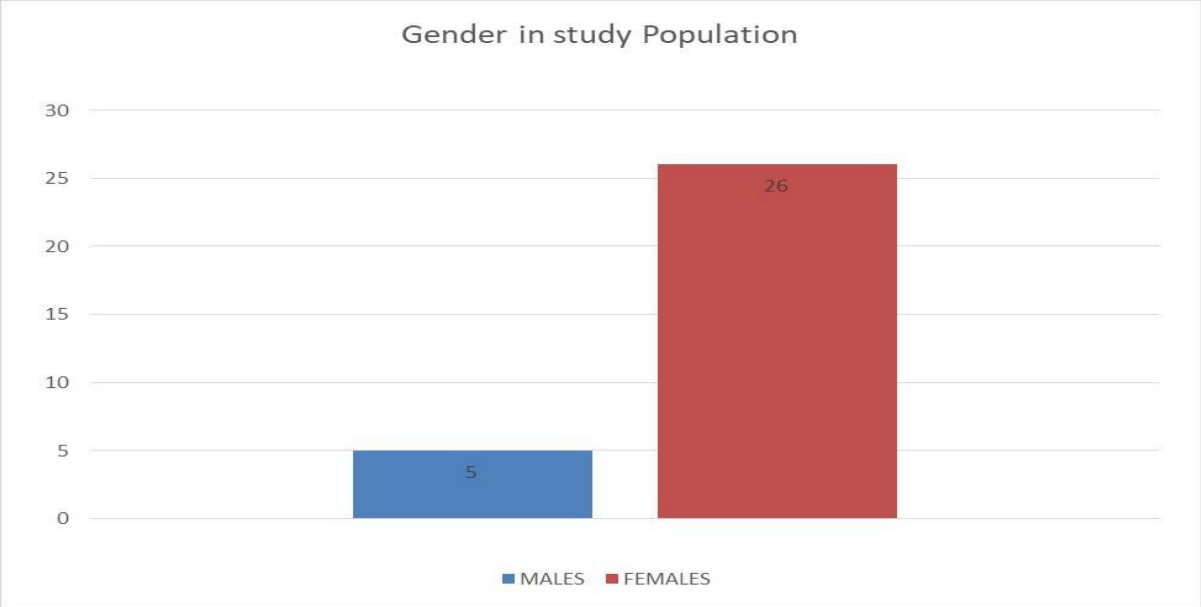
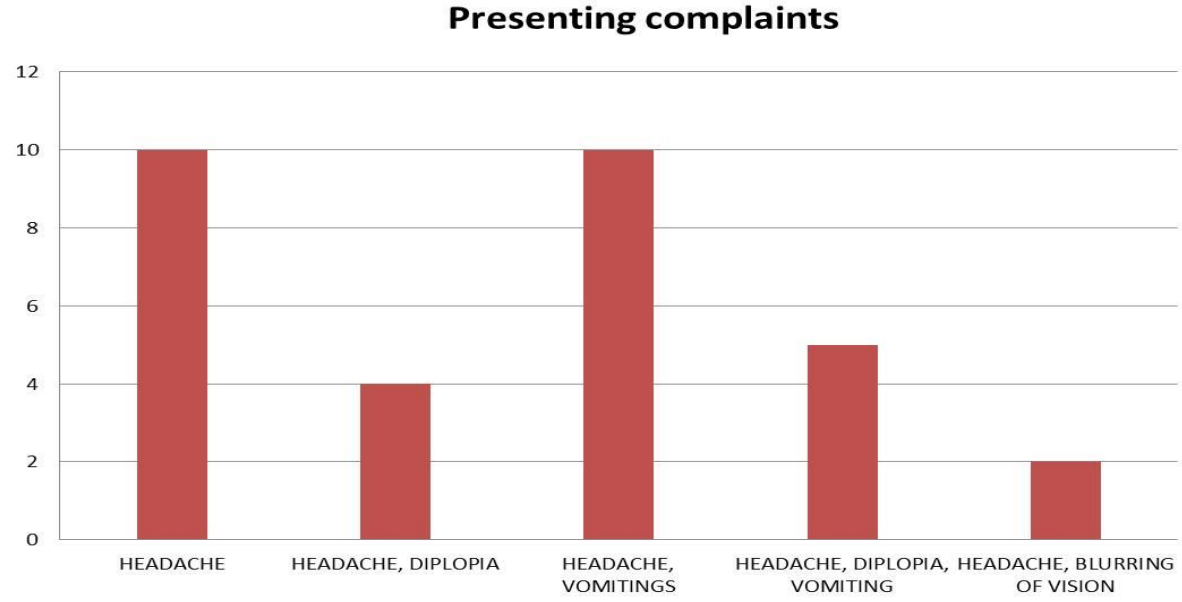


Figure - 2: Presenting complaints in the study population.



In our study we found VIth cranial nerve palsy in 8 patients (25.8%). Lateral rectus palsy was found in 6 (42.8%) cases in study by Ayush Dubey [8] on Idiopathic Intracranial Hypertension (IIH) in a tertiary referral teaching centre in Central India.

Pappiledema was present in all the cases 100%. Contreras-Martin, et al. [7] on their ophthalmological examinations found that 81.96% of the patients presented bilateral papilloedema. Pai, et al. [9] found bilateral papilloedema in 17 out of 18 patients.

In our study Mean CSF pressure was 318.1 mm of H2O measured in lateral decubitus position. In the study of Contreras-Martin, et al. [7] CSF opening pressure was measured with patients in the lateral decubitus position, and the mean pressure value was 330.5 mm H_2O.

Magnetic resonance imaging (MRI) and magnetic resonance venography (MRV) are, at present, the imaging studies of choice for detecting IIH. Ambika, et al. [10] did MRI in 42 patients out of which 25 were normal and the remaining 17 showed features of IIH in the form of periopticspace widening and empty sella. In this study 23 of 31 patients had abnormal MRI features in the form ofprominent subarachnoid space, vertical tortuosity of optic nerves, flattening of posterior sclera and empty sella. 4 patients underwent surgical management and remaining 27 patients were medically managed. Lifestyle modifications were advised to all the patients.

Conclusion

IIH most commonly occurs in Females. Most common presenting symptom is Headache. Patients with higher CSF pressure tend to have Vision loss and VI cranial nerve palsy. Surgical management is essential in patients with Vision loss or impending vision loss. Lifestyle modification is an important aspect in management.

Acknowledgments

We would like to thank our Ex Professor and HOD Dr. P. Dhairyawan, MD, DM for his continuous support and encouragement.

References

1. Gans M.S. Idiopathic Intracranial Hypertension, emedicine, medscape, overview, 2014, 02.05. Available on https://emedicine.medscape.com/article/1214410-overview.
2. Friedman DI, Jacobson DM. Diagnostic criteria for idiopathic intracranial hypertension. Neurology, 2002; 2013: 1492–5.
3. Scott IU, Siatkowski RM, Eneyni M, Brodsky MC, Lam BL. Idiopathic intracranial hypertension in children and adolescents. Am J Ophthalmol., 1997; 124: 253–254.
4. Eggenberg ER, Miller NR, Vitale S. Lumboperitoneal shunt for the treatment of pseudotumorcerebri. Neurology, 1996; 46: 1524–1529.
5. Radhakrishnan K, Thacker AK, Bohlaga NH, et al. Epidemiology of idiopathic intracranial hypertension: a prospective and case-control study. Journal of the Neurological Sciences, 2003; 116: 1828.
6. Giuseffi V, Wall M, Siegel PZ, Rojas PB.Symptoms and disease associations in idiopathic intracranial hypertension (pseudotumorcerebri): a case-control study. Neurology, 1991 Feb; 41(2(Pt 1)): 239-44.
7. Contreras-Martin, J.H. Bueno-Perdomo. Idiopathic intracranial hypertension: descriptive analysis in our setting. Neurología, 2015; 30(2): 106-110.
8. Ayush Dubey, Sunil Athale. Idiopathic Intracranial Hypertension (IIH) in a tertiary referral teaching centre in Central India. Indian Journal of Neurosciences, 2017; 3(1): 31-34.
9. Pai SG, Sharma T, Gupta R. Idiopathic intracranial hypertension: Clinical profile and outcome. J ClinOphthalmol Res., 2016; 4: 25-9.
10. S. Ambika, Deepak Arjundas, Veena Noronha, Anshuman. Clinical profile, evaluation, management and visual outcome of idiopathic intracranial hypertension in a neuro-ophthalmology clinic of a tertiary referral ophthalmic center in India. Ann Indian AcadNeurol, January-March 2010; 13(1): 37-41.