



A Rare Case of Idiopathic Intracranial Hypertension with Anemia: A Case Report

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Abstract

Idiopathic Intracranial hypertension (IIH) is a condition characterized by elevated Intra cranial pressure (ICP) due to no definite cause. It is a rare disorder and mostly occurs in females of reproductive age and obese individuals. Obesity and anemia are associated with elevated ICP, and contribute to the disease. If not managed at right time prolonged ICP can lead to papilledema and other visual abnormalities. The diagnosis is made with MRI, CT scan, lumbar puncture. The treatment focuses on reducing the elevated ICP and preserving the optic nerve function. Treatment is done with pressure reducing agents like Acetazolamide and supportive treatment may be given to reduce headache. This disease is prone to recurrence, thus management of weight and lifestyle modifications are necessary to prevent the relapse of disease.

Keywords: Idiopathic Intracranial Hypertension (IIH), Intracranial pressure (ICP), Acetazolamide, Obesity, Papilledema.

Introduction

Idiopathic Intracranial hypertension (IIH) is a condition characterized by increased Intracranial pressure (ICP) around the brain without a definite detectable cause. It is also known as pseudotumor cerebri and benign intracranial hypertension (BIH), but IIH is the most widely used term. It occurs without a known cause and is known to occur more commonly in obese females in the reproductive age (i.e. the third decade of life). However it can occur in males and females of all ages and body types. Risk factors for IIH include Hypervitaminosis A, steroid withdrawal, obesity, female gender, pregnancy.^[1] The incidence of IIH has increased since 1990, which is highly

correlated with the rise in obesity during the same period.^[2]

The primary problem is chronically elevated intracranial pressure (ICP), and the most important neurologic manifestation is papilledema, which may lead to secondary progressive optic atrophy, visual loss, and possible blindness.^[3] Anemia may also play a role in the occurrence of raised ICP and papilledema though the underlying mechanism is not exactly known.^[4] The characteristics signs and symptoms include-headache, visual loss, transient visual obscuration, diplopia, pulsatile tinnitus, radicular pain and non specific symptoms like nausea and vomitings. Diagnosis is made with the help of

neuroimaging techniques like MRI, MRV, CT scan etc. and lumbar puncture.

The goal of treatment is to manage the increased ICP and to preserve the optic nerve function. The standard treatment includes^[5] :

-Acetazolamide-It is the first line therapy in the treatment of increased ICP and IIH. Acetazolamide appears to have an acceptable safety profile at dosages up to 4 g/d in the treatment of idiopathic intracranial hypertension.^[6]

-Diuretics- Considered as second line agents in treatment of IIH.

-Headache Prophylaxis- Amitriptyline and other anti migraine agents may be required to reduce the headache.

-Corticosteroids- To increase the elevated IIH.

If there is no symptomatic improvement in patient after the treatment, surgical interventions maybe required.

Case Report

A 33 Year old female was brought to the Neurology department with the complaints of Headache since 1 year which is now increased since past 2 months. Headache is of hemi, holocranial type and episodic (2-3 times/week). It is accompanied with nausea, vomitings and phonophobia. Headache increases in recumbent position. Intermittent visual blurring also seen.

Table 1 Medication Chart

S.No:	DRUG	DOSE	ROUTE	FREQUENCY
1.	Injection Pantoprazole	40mg	Intravenous	Once a day
2.	Tablet Levosulpiride	100mg	Oral	Twice a day
3.	Tablet Naproxen+Domperidone	250mg	Oral	SOS
4.	IVF Normal Saline	30ml	Intravenous	Per hour
5.	Tablet Multivitamin	1 tablet	Oral	Once a day for 2 months
6.	Tablet Acetazolamide	250mg	Oral	Twice a day
7.	Tablet Ferrous Ascorbate + Folic acid	100mg	Oral	Once a day

Day 2 –

Patients vitals were as follows-

Temperature-Normal, BP-11/80mmHg, Pulse- 80 beats/min, Respiratory rate-20/min, GRBS- 106 mg/dl.

Patient has no new complaints. Headache is better than before. Patient is alert, no focal deficits.

The patient has no other comorbidities and no history of Stroke, Loss of consciousness and Seizures in the past. The patient has a mixed diet, normal appetite, normal bladder and bowel functions and sound sleep. On hospital admission the systemic examination showed the following- Temperature: Normal, Blood pressure: 120/80, Pulse rate: 80 beats/min, Respiratory rate:20/min, CNS: Alert, Oriented, No focal deficits.

Treatment

Anti-migraine agents- Tablet Naproxen + Domperidone – 250mg –Oral –SOS was given to reduce headache.

Pressure reducing agents- Tablet Acetazolamide-250mg –Oral-twice a day was given to reduce the elevated ICP causing IIH.

Mood elevating agent- Tablet Levosulpiride-100mg –Oral-twice a day was given to reduce patients headache and elevate mood.

Electrolyte balance – IV fluid Normal Saline was transfused intravenously at the rate of 30ml per hour.

Ulcer prophylaxis- Inj Pantoprazole – 40mg –IV was given once a day as an ulcer prophylaxis.

Multivitamins – Tablet Multivitamin was given once a day to reduce weakness in the patient.

Iron- Tablet Ferrous Ascorbate + Folic acid - 100mg –Oral –once a day was given to treat Anemia.

Day 3 –

Patient vitals were as follows-

Temperature-Normal, BP-130/70mmHg, Pulse-80 beats/min, Respiratory rate- 20/min.

Patient has a mild, intermittent headache. Patient is alert, oriented, obeying commands.

Patient was discharged on request.

Discharge medications

Tablet Acetazolamide-250mg-PO-BD

Tablet Paracetamol+Flupirtine-100mg –PO-BD x 10 days

Tablet Naproxen+Domperidone-250mg –PO –SOS

Tablet Pantoprazole-40mg –PO-OD x 5 days

Tablet Ferrous Ascorbate + Folic acid -100mg-PO-OD x 1 month

Tablet Multivitamin-PO-ODx 2 months

Patient was asked to review after 7 days in Neurology and Ophthalmology OPD's.

Table 2 Complete Blood Picture

S.No:	Laboratory Data	Day 1	Normal Value
1.	Haemoglobin	8.9 gm/dl	11-17 gm/dl
2.	Red blood cells	3.90 million/cumm	3.7-6.5million/cumm
3.	White blood cells	9,330 cells/cumm	4000-11000cells/cumm
4.	Neutrophils	65%	40-80%
5.	Lymphocytes	26%	20-40%
6.	Monocytes	5%	2-10%
7.	Eosinophils	4%	1-6%
8.	Basophils	0%	<1-2%
9.	Platelets	4.53 lakhs/cumm	1.5-4 lakhs/cumm

Table 3 Serum Electrolytes

S.No:	Laboratory Data	Day 1	Normal Values
1.	Sodium	137 mmol/L	135-145 mmol/L
2.	Potassium	4.2 mmol/L	3.5-5 mmol/L
3.	Chloride	102 mmol/L	95-105 mmol/L

Table 4 Liver Function Test

S.No:	Laboratory Data	Day 1	Normal Values
1.	Total Protein	7 gm/dl	6-7.5 gm/dl
2.	Albumin	4.4 gm/dl	3.5-5 gm/dl
3.	Total Bilirubin	0.3mg/dl	0.2-1.0 mg/dl
4.	Direct Bilirubin	0.1 mg/dl	Upto 0.2 mg/dl
5.	SGOT	15 U/l	5-45 U/l
6.	SGPT	16 U/l	5-45 U/l
7.	Alkaline Phosphatase	91 U/l	35-104 U/l

Table 5 Biochemistry

S.No:	Laboratory Data	Day 1	Normal Value
1.	Random Blood Sugar	96 mg/dl	6-150 mg/dl
2.	Serum Creatinine	0.6 m/dl	0.6-1.5 mg/dl

Discussion

Idiopathic intracranial hypertension (IIH) is a rare condition occurring usually in females of reproductive age. Though it can happen to both males and females of all ages, people with

obesity, female gender, steroid withdrawal and pregnant women are at greater predisposition. The main concern in Idiopathic intracranial hypertension is the elevated Intracranial pressure (ICP) and treating this helps in resolving of IIH. Obesity and Anemia are known to cause elevated Intracranial pressure (ICP). Although the exact underlying mechanism remains unknown, treatment of Anemia and reduction of obesity was found to reduce the ICP thereby resolving IIH. If not managed at time the elevated ICP can cause papilledema and other visual abnormalities. The standard treatment for IIH includes a pressure reducing agent like Acetazolamide, Analgesics to reduce headache, Iron supplementation if patient is anemic, Multivitamins and electrolyte replenisher to treat weakness. Recurrence of the disease is common in patients with IIH, thus it is necessary to maintain a healthy weight and Hb levels, take a healthy diet rich in fruits and vegetables, avoid fatty and processed food, exercise regularly and take periodic ophthalmological consultations.

Conclusion

The exact etiology of Idiopathic Intracranial hypertension remains unknown, but avoiding the risk factors helps in preventing the disease to a great extent. Complications like vision loss can also be avoided by timely management of the disease. Lifestyle modifications and weight management also help in management of disease and prevent its recurrence.

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