Case Report

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Partial Empty Sella Syndrome Presenting to Emergency as a Case of Recurrent Hyponatremia: A Rare Presentation

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Abstract

Electrolyte disturbance is a common finding in elderly individuals presenting to emergency with disturbed level of consciousness and hyponatremia is one of the commonest cause associated with lots of other clinical disorders . Most of these cases managed conservatively with sodium replacement and got discharged after correction of dyselectrolytaemia. Hyponatremia as the presenting manifestation of Empty sella syndrome (ESS) is rare. There is little clinical experience in the management and diagnosis of this problem and patient tends to present repeatedly to emergency due to electrolyte disturbances. We hereby report a case of 51 year old female with past history of CAD undergone coronary intervention presenting to emergency with diffuse pain abdomen , unable to pass flatus and vomiting mimicking symptoms of subacute intestinal obstruction found to have Recurrent hyponatremia during her hospital stay due to Partial Empty sella syndrome (ESS) .

Keywords: Hyponatremia; Glucocorticoids; Empty Sella Syndrome (ESS) Coronary Artery Disease-Triple Vessel Disease (CAD-TVD), Cerebro Spinal Fluid (CSF). Intra Cranial Haemorrhage (ICH).

Introduction

Empty sella syndrome is a disorder of pituitary gland leading to shrinkage of the gland and the gland gets flattened. Sella tursica is a bony structure at the base of the brain that surrounds and protects the pituitary gland. When the pituitary gland shrinks or becomes flattened it is difficult to make out in an MRI scan which looks like an empty sella. This is called as empty sella syndrome. If the pituitary gland is visible partially on the MRI scan it is called Partial empty sella syndrome. Gland disorder is divided into Primary and Secondary. Primary ESS happens when a small anatomical defect above the pituitary gland increases pressure in the sella tursica and causes the gland to flatten out along the interior walls of the sella tursica cavity. It allows the cerebrospinal fluid (CSF) in, which presses on the pituitary. The disorder can be a sign of idiopathic intracranial hypertension. Secondary empty sella syndrome occurs when the pituitary gland is damaged by a tumor, surgery or radiation therapy. Individuals with secondary ESS due to destruction of the pituitary gland have symptoms that reflect the loss of pituitary functions, such as the ceasing of menstrual periods, infertility, fatigue, and intolerance to stress and infection.

Case Report

51- year old female was brought to emergency with C/O diffuse pain abdomen associated with multiple episodes of vomiting since 2 days and not able to pass flatus since one day. She had a history of CAD-TVD and undergone cardiac intervention (POST PTCA – stent to PX AND DX RCA). She was appears to be lethargic, responding to verbal commends. As per her attendant she was undergone burrhole craniotomy for ICH at past but no documents available during her emergency visit. She had also H/o spine surgery 6 years back and LSCS was performed once 25 Years back. She denied any complication after these mentioned surgeries. She was non diabetic and non-hypertensive, denied any h/o liver disease and

alcohol intake. She had no complain of headache , visual disturbances and any focal neurological deficit. There is no history of recent infection, fever, head trauma, chest pain, seizure disorder or any other neurological issues. Patient had achieved menopause 5 years back.

On Examination

Airway Assessment : Patent

Breathing Assessment

Respiration(RR / min) :20 / Min

Laboured :No

SpO2 :98% on Room Air

Circulation

Pulse :68 / Min

BP :160 / 100 MM HG

Peripheral Pulses :Yes

Temperature :98 F

Cardiac Monitor : Sinus rhythm

GRBS : 83mg / dl

Systemetic Examination:

HEENT : No Pallor / Icterus / Cyanosis / Dehydration.

CHEST : B / L AE+

CVS : S1S2 Heard

ABD : Soft , diffuse tenderness + , BS sluggish

EXT : Warm , No Pedal Edema

Neuro : Conscious , oriented , no focal neurological deficit

Reflexes were normal

Plantars : B / L downgoing

Ample History:

Allergies : No Known Drug Allergy

Medications : Post PTCA —on following medication

TAB ECOSPRIN 75 MG

TAB CLAVIX 75 MG

TAB NICORANDIL 5 MG

TAB ROSUVAS 40 MG

Past History : CAD-TVD –Stent to PX and DX RCA

H / O LSCS 25 years back

H / O Spinal surgery 6 Years back

H / O burrhole craniotomy for ICH

(no documents available)

Provisional Diagnosis was made as SAIO with Dyselectrolytemia , Idiopathic Intracranial Hypertension

She was evaluated in emergency and investigated for her symptoms. Her blood gas report shows severe hyponatremia for which She was put on 3% normal saline (Serum Na^+ 108). She was admitted in ICU for further management and care . During her ICU stay she repeatedly developed Hyponatremia. Her serum was analyzed for hormonal profile and serum cortisol level was found to be low. She was planned for MRI Brain which s / o Partial Empty Sella Syndrome .

On the above findings and clinical complaints a diagnosis of Partial Empty sella syndrome was made. Case was referred to Endocrinologist, Neurologist and Gastroenterologist. She was put on Prednisolone (TAB. OMNACORTIL 20 MG) and subsequently her hyponatremia was improved on steroids.

Lab Reports:

Blood Gas Report :

PH : 7.36, PO2 : 86.0, PCO2 : 32.7, HCO3 :24

Na^+ : 108, K^+ : 3.7, CL : 108, GLU : 110, LAC :0.8

Complete blood counts:

WBC – 3.6 , RBC – 6.1 , Hb – 11 , Plt-2.68 L , Hct-44

Differential counts : N-47 M-6 L-46 E-1

Electrolytes :

Na^+ – 109 , K^+ – 3.6.

OSMOLALITY, URINE

289 mOsm / kgH2O 200.0-1192.0

FREE THYROXINE(FT4)

0.75 ng / mL 0.58-1.64

TSH

1.78 uIL / mL 0.34-5.6

FREE TRIIODOTHYRONINE(FT3)

2.43 L pg / mL 2.6-4.2

SODIUM

118 L mmol/L 136.0-146.0

CORTISOL (MS) 8AM

0.95 L ug/dL 6.7-22.6

ACTH

10 pg/ml 10-50

Urinary Examination

VOLUME, TOTAL 2000 ML

UR SODIUM 24HR 220 mmol/24hr 40.0-220.0

Renal and Liver function tests are within normal limits.

CXR-WNL

Abdomen ERC/Supine – WNL

ECHO- EF 35-40%.

MRI Brain Contrast S/O - mild generalized age related atrophy with early chronic ischemic changes. Sellar findings are concerning for partial empty sella.

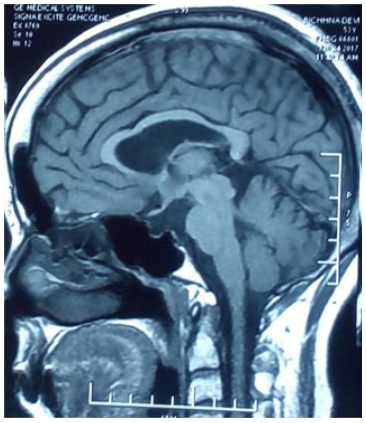

Fig. 1: Magnetic resonance imaging of the brain revealing partial empty sella

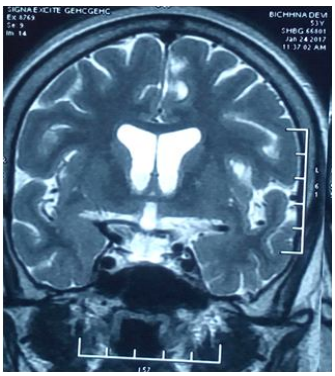

Fig. 2: Magnetic resonance imaging of the brain T2-weighted image taken in the coronal plane showing hyperintensity over the sella

Management Advised

Inj Emeset 4 mg IV Stat.

Inj pantoprazole 40 mg IV Stat.

Inj Drotin 1 amp iv stat

Inj 3% normal saline 15 ml/hr iv infusion

TAB. OMNACORTIL 20 MG

Her previous cardiac medications (Tab. Ecospirin, Tab Atorva. etc.) continued during the hospital stay as advised by attending cardiologist.

Discussion

We have reported a case of Partial ESS in the setting of recurrent hyponatremia. Patient presented to emergency with diffuse non-specific pain abdomen and recurrent vomiting which initially thought to be the cause of hyponatremia. Pt was admitted and dully followed during the hospital stay. On subsequent investigations in ICU patient was found to have recurrent episodes of Hyponatremia. Patients biochemical profile, Hormonal study and MRI was done and in the basis of lab reports and radiological evidence it was diagnosed as a case of Partial Empty Sella Syndrome. Hossain MS et al. previously documented a case of primary ESS in a lady presenting with headache and gradual visual disturbances. There is high incidence of pituitary dysfunction mainly panhypopituitarism, secondary hypogonadism, hyperprolactinemia, isolated ACTH deficiency and diabetes insipidus (DI) was documented in patients with the primary empty sella syndrome. Hyponatremia as the presenting manifestation of Partial Empty sella syndrome (ESS) is rare. Emergency Physician should have a differential in their mind regarding pituitary disorders in the setting of recurrent Hyponatremia. In our case report Patient was previously undergone Craniotomy for neurological intervention which was thought to be the cause of Partial Empty Sella syndrome.

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