May 4th, 12:00 AM

Chronic Headache Leading to the Diagnosis of Empty Sella

Melissa Itidiare Locke
Rowan University

Rachel Burke
Jefferson Health New Jersey

Chronic Headache Leading to the Diagnosis of Empty Sella

Melissa Itidiare Locke DO , Rachel Burke DO

Department of Emergency Medicine and EM Residency Program , Jefferson Health NJ

Abstract :

Headaches are one of the most common chief complaints presenting to the Emergency Department. The differential is broad. The workup is tailored to the patient's history. Here we present the case of a young female who developed headaches over the past year. After numerous imaging studies of her brain, the most recent revealed an Empty Sella diagnosis.

Case Presentation:

The patient is a 27 year old female who presented to the ED for the evaluation of headache. Pt stated that she has had intermittent headaches for the past 5 years. She states that over the past week she developed a severe headache that she rated an 8/10. She went to an ED 4 days ago and received a CT head without contrast that didn't report any significant findings. She was given a medications for headache and was discharged. The patient returned to the ED department a few days later due to worsening headaches. The headache was mostly located on the right side of her head and she endorsed nausea. She did not have any vision changes. She reported feeling dizzy, as in a room that was spinning . The headache was noted not to be worse on exertion. There was no vomiting, neck pain, fevers, cough, numbness/weakness, or tingling in the upper and lower extremity.

The past medical history included occipital migraines, and obesity.

Initial vitals signs were as follows: BP 121/65, heart rate 60, temperature 98F, respiratory rate 18, oxygen sat 100% on RA.

The physical exam revealed an alert, well-appearing obese female in no acute distress. The physical exam was within normal limits, including a normal neuro exam and normal eye grounds.

Labs showed a TSH 5.67 (increase from 3.3 two months prior),NA 132, Potassium 3.8 , Glucose 93, WBC 7.0 , PLT 271, Hgb 12.9, neg POCT Hcg.

The chart review revealed that the patient had been previously evaluated by a neurologist had been diagnosed with occipital migraines. Her previous MRI of the brain 6 months didn't reveal any abnormalities (fig A)

Repeat CT of head did not reveal any abnormalities in the axial view.

CTA head neck showed that patient now has an empty sella.

Neurology was consulted and recommended that pt get a lumbar puncture but pt refused at this time.

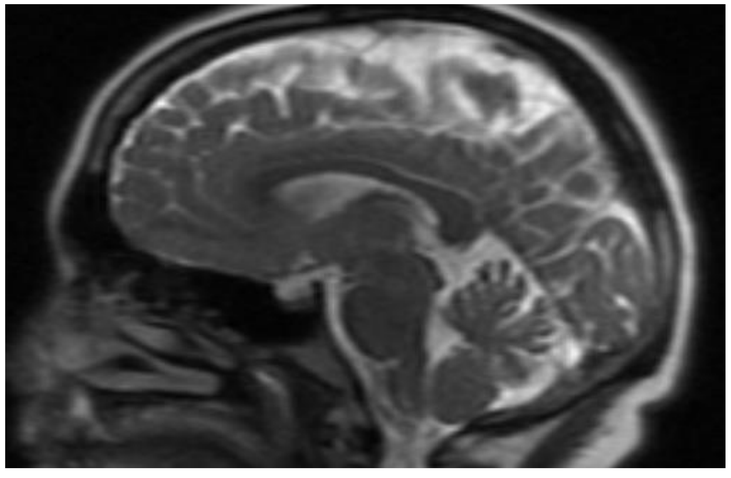

Figure 1. Previous MRI without Empty Sella Diagnosis

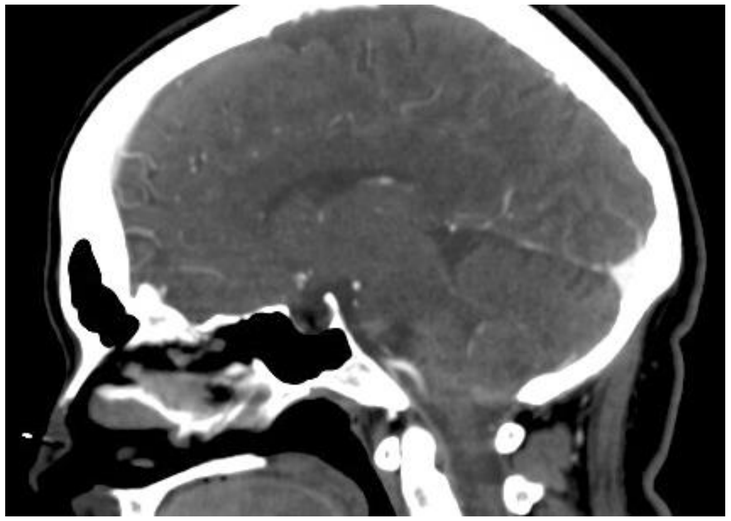

Figure 2. Empty Sella visualized on CT scan

Discussion:

Empty Sella is a radiological finding of a flattened pituitary gland when there is herniation of subarachnoid space into the sella turcica. (1) It can be seen on either CT or MRI. Primary Empty Sella can be caused by intracranial hypertension and/or insufficiency of the sellar diaphragm. The patient has a risk factor of obesity and recent pregnancy a couple of months ago that resulted in a miscarriage. Idiopathic Intracranial Hypertension or "pseudo-tumor cerebri" is a rare condition affecting 1 in 100,000 people (2) The prevalence of Primary Empty Sella is very high in pts with Intracranial Hypertension ranging from 70-94% (3). The patient had previous fundoscopic exams with evidence of papilledema and also refused a lumbar puncture to definitely rule out Intracranial hypertension. Primary Empty Sella is associated with female sex, obesity, and multiple pregnancies with a classic presentation of headache and obesity. (4) Headache occurs in approximately 80% and can have visual changes as well. (5) Treatment for Empty Sella depends on what syndromes that pt is experiencing. For pts with Idiopathic Intracranial Hypertension, osmotic diuretics have proved to be beneficial. Weight loss can be helpful. Neurosurgical techniques have been performed for patients experiencing visual deficits. (5)

Conclusions:

Empty Sella diagnosis is usually discovered in patients being worked up for headaches or various endocrine, or neurologic pathologies. Some patients affected by PES can go on to have various endocrinologic abnormalities . Our patient had several risk factors and exhibited very common symptoms of Primary Empty Sella. Even though patient's previous CT scan and recent MRI without mention of Primary Empty Sella, the diagnosis remains high in our patient. Further imaging, Lumbar puncture, and blood work is warranted to definitively rule in/out Primary Empty Sella Syndrome.

References:

1) Browne JD, Kohut RI. Headache and the Primary Empty Sella Syndrome. *Arch Otolaryngol Head Neck Surg.* 1986;112(8):883–885. doi:10.1001/archotol.1986.03780080083019

2) Friedman DI, Jacobson DM. Diagnostic criteria for idiopathic intracranial hypertension. Neurology. 2002;59:1492–1495.

3) Chiloiro S, Giampietro A., Bianchi A, Tartaglione T, Capobianco A, Anile C, De Marinis L. Primary empty sella: a comprehensive review. European Journal of Endocrinology. 2017;177(6):R275–R285.

4) Morici, Bobbie MSPAS, PA-C Diagnosis and management of acute pulmonary embolism, JAAPA: April 2014 - Volume 27 - Issue 4 - p 18-22

doi: 10.1097/01.JAA.0000444729.09046.09

5) Miljic D, Pekic S, Popovic V. Empty Sella. [Updated 2021 Aug 1]. In: Feingold KR, Anawalt B, Blackman MR, et al., editors. Endotext [Internet]. South Dartmouth (MA): MDText.com, Inc.; 2000-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK532084/