

Wernicke's Encephalopathy in a Morbidly Obese Patient

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Introduction

Wernicke's encephalopathy is a neurologic disease characterized by thiamine deficiency and characteristic

PMH: Supramorbid obesity, obesity hypoventilation syndrome, chronic immobility, COPD, DMII and HTN

Social history: no history of heavy EtOH intake or alcohol abuse



neurologic deficits that may include altered mental status, ophthalmoplegias and cerebellar deficits. It has classically been associated with long-standing alcohol abuse, but it is also increasingly recognized in other various states of nutritional deficiency including bariatric surgery. If gone unrecognized, it may lead to irreversible neurologic deficits.

Case Presentation

A 69- year- old woman with supra-morbid obesity, obesity hypoventilation syndrome, and chronic immobility was admitted with abdominal pain, nausea, vomiting, diarrhea, fever, and delirium. She was diagnosed with viral gastroenteritis and improved with supportive care except for continued hypoactive delirium. **Vitals:** 37.1 C, HR 74, RR 20, BP 150/63, 99% on RA

Physical Exam: Elderly morbidly obese **(BMI 73)** woman in bed. Lungs clear, no rashes. Alert and oriented to person only. Slowed responses to questions and having active visual hallucinations. Unable to obtain gait due to immobility. No nystagmus.

Labs: CBC and CMP within normal limits. Ammonia 13, TSH 2.03, venous PCO2 50, UDS negative, UA bland, Thiamine 56 (lower limit of normal 70).

Imaging: CXR clear, CT head with chronic small vessel ischemic changes.

Hospital Course: Patient continued to have hypoactive delirium and a workup was obtained to rule out metabolic encephalopathy. Further history was obtained from a care giver who stated that patient had started an unknown crash diet 2 months prior to her hospitalization. A thiamine level was obtained, and she was started on empiric high dose thiamine replacement at discharge.

Representative image of MRI obtained in patient with Wernicke's Encephalopathy (source X). We were unable to obtain an MRI in this patient because of her BMI.







Altered mental status is too often attributed to delirium NOS, with

Teaching Points

Have a low suspicion for Wernicke's Encephalopathy in any population with poor nutritional state and AMS
Thiamine deficiency should be considered in the workup of delirium
Wernicke's Encephalopathy is reversible if caught early, but can be devastating if not recognized and treated in time.



little workup beyond ruling out infection. Establishing a diagnosis of Wernicke's early before irreversible changes take place is of great importance as demonstrated in this case. Wernicke's is becoming increasingly recognized in obvious states of nutritional deficiency such as post-bariatric surgery. However, an expanded differential and additional history may be key in diagnosing Wernicke's in a patient with altered mental status without obvious nutritional deficits or a history of alcohol abuse. The absence of ocular abnormalities or ataxia should also not remove Wernicke's from the differential

This case highlights the importance of a high index of suspicion for Wernicke's in non-alcoholic patients, recalling the words of Drs. Reuler, Girard and Cooney: "The only prerequisite for the development of Wernicke's Encephalopathy is a poor nutritional state" (NEJM 1985).

References

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