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Atypical Case of Painless Pancreatitis with Hypothermia, Hypoglycemia and Hyponatremia: A Case Report

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Abstract

Timely recognition and treatment of pancreatitis is necessary to mitigate the risk of serious complications in the acutely ill patient. Although chronic pancreatitis can be painless, it is rare for patients with acute presentations to lack both abdominal pain and tenderness on exam. The authors present the case of an 84-year-old man who presented to the emergency department with altered mental status, profound hypoglycemia, hypothermia and electrolyte abnormalities caused by acute pancreatitis, despite not having any abdominal symptoms. To the best of our knowledge, this is the first reported case of painless pancreatitis manifesting as altered mental status with electrolyte derangements and hypoglycemia in the absence of any past medical history of relevant underlying disease process. With the wide range of systemic symptoms pancreatitis can cause, emergency physicians should remain vigilant for pancreatitis when classic symptoms of abdominal pain and hyperglycemia are absent in critically ill patients.

Keywords: Pancreatitis; hypoglycemia; hyponatremia; hypothermia

Introduction

Increasing in the past 15 years, acute pancreatitis is a common condition in the emergency department (ED), most commonly caused by cholelithiasis, alcohol, and hypertriglyceridemia in North America.[1] The clinical severity of pancreatitis ranges from mild to life threatening, with mortality rates as high as >20% in high risk patients.[2,3] Due to the pancreas' ability to release a number of vasoactive peptides, hormones and enzymes, damage to the cells of the pancreas can turn localized intra-abdominal inflammation into a systemic disease.[4] Critically ill patients can develop systemic and metabolic derangements.[5–8] We present a rare case of painless, acute pancreatitis in an elderly patient with no history of cholelithiasis, alcohol or pancreatic disease preceded by a respiratory infection that presented to the ED with hypothermia, hypoglycemia and hyponatremia.

Clinical Presentation

An 84-year-old male with a past medical history of hypertension, hypothyroidism, chronic kidney disease (CKD), and a pacemaker was brought in via ambulance for altered mental status. His wife reported that he was normal the night prior to presentation, but was difficult to arouse prior to arrival in the ED. He had no history of diabetes mellitus, but paramedics reported an initial blood glucose of 30 mg/dL for which he received 25 grams of 50% dextrose solution with additional oral supplementation.

Initial vital signs in the ED were a heart rate of 65 beats per minute, a blood pressure of 120/60 mmHg, respiratory rate of 16 breaths per minute, oxygen saturation of 100% on room air, and a rectal temperature of 31.4 degrees Celsius. His initial blood glucose was 122mg/dL, which nadired to 50 mg/dL while he was in the ED. He denied taking any of his wife's diabtetes medications. The patient was noted to be confused and slow to respond initially. However, he was able to follow commands and had no focal neurologic deficits. Physical exam was notable for some scattered rhonchi present in the anterior lung fields, and his skin was cool. No abdominal tenderness or guarding was appreciated on exam.

Laboratory results were notable for lactate of 4.6 mmol/L, venous blood gas pH 7.25, bicarbonate of 12.2mmol/L,

PCO2 of 15mmHg, sodium of 115meq/L, creatinine of 2.68mg/dL, and chloride of 80.4meq/L. Free T4 was within normal limits at 1.31ng/dL and troponin was less than 0.01ng/mL. Portable chest radiograph demonstrated increased parenchymal opacity in the left lower lobe with lower lobe bronchial thickening and his initial polymerase chain reaction rapid SARS-CoV2 test was negative.

The patient was rewarmed with a Bair Hugger Forced-Air. He became hypotensive to 86/44 mmHg, prompting administration of one-liter intravenous (IV) bolus of lactate ringers. He was given 100 mg of intravenous hydrocortisone for presumed adrenal deficiency as well as broad spectrum antibiotics to include 1 g of Vancomycin and 2 g of Cefepime. A non-contrast computed tomography (CT) of the chest, abdomen, and pelvis was ordered to evaluate for other potential causes. The CT demonstrated acute pancreatitis as well as right lower lobe ground-glass opacities (Figure 1 and Figure 2). A lipase level was > 600U/L. The patient was admitted to the medical intensive care unit, where repeat sodium was 117meq/L and a normal random cortisol.

Figure 1. CT Abdomen demonstrating pancreatic fat stranding (white arrow)

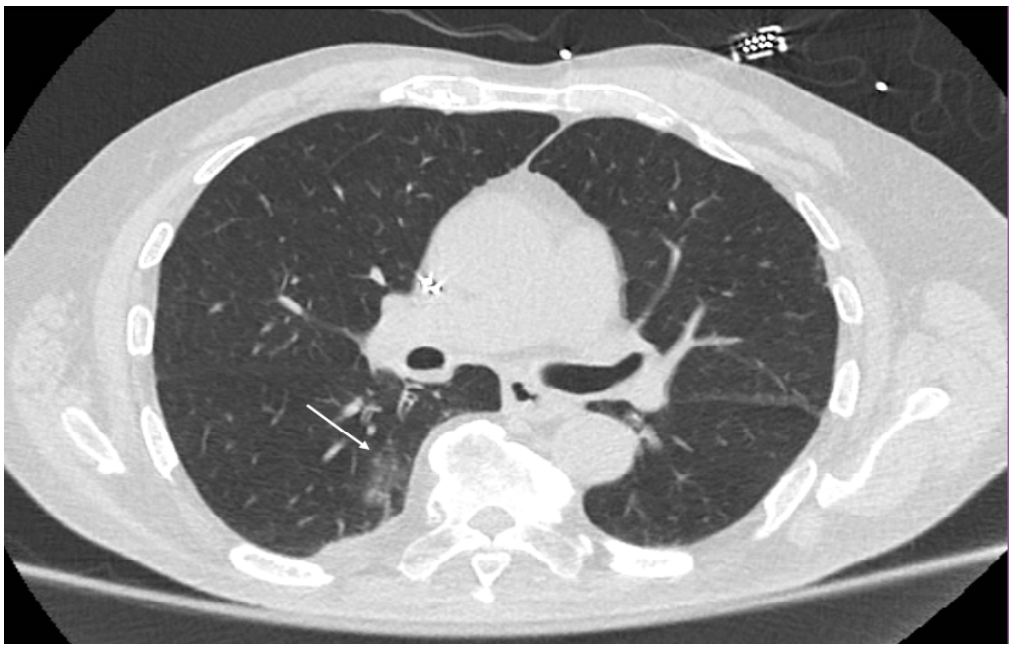

Figure 2. CT Chest demonstrating right lower lobe ground glass opacity (white arrow)

He was downgraded to the medical floor on day 3 with serial negative SARS-CoV2 tests and eventually discharged home on hospital day 7.

Discussion

Painless acute pancreatitis is rare presentation.[9,10] It can occur from shock associated with myocardial infarct, diabetic coma, or cerebrovascular accident.[9] Cases have also been reported from implantation of a biventricular assist device, methimazole usage, and leptospirosis.[11–13] In a case series of boys less than three years old, upper respiratory infection preceded painless pancreatitis, all of which were fatal.[14] Acute pancreatitis most commonly causes hyperglycemia rather than hypoglycemia, due to pancreatic cell damage leading to a decreased ability to secrete insulin.[15] However, a few cases of hypoglycemia due to acute pancreatitis have been documented.[14]

Acute pancreatitis can also cause respiratory disease and complications such as arterial hypoxia, atelectasis, pneumonia, pleural effusion, mediastinal abscess, pulmonary infarction, and acute respiratory distress syndrome (ARDS). These derangements can damage pulmonary vasculature, increasing endothelial permeability and destroying surfactant[16]. In the setting of hyponatremia, hypoglycemia, and hypothermia, the emergency physician must consider other endocrine etiologies such as decompensated hypothyroidism and adrenal insufficiency. While laboratory values aid in these diagnoses, they are clinical in nature and thus a high index of suspicion should be maintained for these great masqueraders[17,18].

Conclusion

Pancreatitis is a common disease ranging from very mild to life threatening. Although pancreatitis most commonly presents with abdominal pain, it can present with atypical symptoms, manifesting as neurologic changes, electrolyte abnormalities, and hemodynamic instability. Emergency physicians should maintain a high index of suspicion for pancreatitis when treating patients that have severe systemic symptoms of sepsis, endocrine malfunction, or altered mental status.

Disclaimer

The opinions and assertions expressed herein are those of the author(s) and do not necessarily reflect the official policy or position of Brooke Army Medical Center, the military, or the Department of Defense.

References

1. Garg SK, Sarvepalli S, Campbell JP, et al. Incidence, Admission Rates, and Predictors, and Economic Burden of Adult Emergency Visits for Acute Pancreatitis: Data from the National Emergency Department Sample, 2006 to 2012. *J Clin Gastroenterol*. 2019;53(3):220-225. doi:10.1097/MCG.0000000000001030
2. Wu BU, Johannes RS, Sun X, Tabak Y, Conwell DL, Banks PA. The early prediction of mortality in acute pancreatitis: A large population-based study. *Gut*. 2008;57(12):1698- 1703. doi:10.1136/gut.2008.152702
3. Nesvaderani M, Eslick GD, Vagg D, Faraj S, Cox MR. Epidemiology, aetiology and outcomes of acute pancreatitis: A retrospective cohort study. *Int J Surg*. 2015;23:68-74. doi:10.1016/j.ijsu.2015.07.701
4. Banks PA. Complications of Acute Pancreatitis. In: *Pancreatitis*. Springer US; 1979:131-170. doi:10.1007/978-1-4613-2907-7_9
5. M. Bhatia. Novel Therapeutic Targets for Acute Pancreatitis and Associated Multiple Organ Dysfunction Syndrome. *Curr Drug Target -Inflammation Allergy*. 2005;1(4):343- 351. doi:10.2174/1568010023344517
6. Foulis AK. Morphological study of the relation between accidental hypothermia and acute pancreatitis. *J Clin Pathol*. 1982;35(11):1244-1248. doi:10.1136/jcp.35.11.1244 7.
7. Stiff RE, Morris-Stiff GJ, Torkington J. Hypothermia and acute pancreatitis: Myth or reality? *J R Soc Med*. 2003;96(5):228-229. doi:10.1258/jrsm.96.5.228
8. Abu Omar Y, Paranji N, Ijeli A, et al. The Diagnostic and Prognostic Value of Hyponatremia in Acute Pancreatitis. *Am J Gastroenterol*. 2018;113(Supplement):S36- S37. doi:10.14309/00000434-201810001-00060
9. TOFFLER AH, SPIRO HM. Shock or coma as the predominant manifestation of painless acute pancreatitis. *Ann Intern Med*. 1962;57:655-659. doi:10.7326/0003-4819-57-4-655 10.
10. Lankisch PG, Mahlke R, Graf D, Becher R, Riesner K. Painless acute pancreatitis mimicking pancreatic carcinoma. *Pancreas*. 1995;10(4):413-414. doi:10.1097/00006676- 199505000-00015
11. Kikuchi I, Miyata N, Yoshimura Y, Miyamoto K, Tachikawa N. Methimazole-induced acute pancreatitis:

a case report. *Clin J Gastroenterol*. 2019;12(3):239-242. doi:10.1007/s12328-018-0926-5

12. Swanson KE, Ward EM, Wolfsen HC. Painless pancreatitis after implantation of a biventricular assistive device. *Transplant Proc*. 2003;35(4):1546-1548. doi:10.1016/S0041-1345(03)00443-3
13. Schattner A, Dubin I, Glick Y, Nissim E. Acute painless pancreatitis as an unusual presentation of leptospirosis in a low-incidence country. *BMJ Case Rep*. 2020;13(8):e234988. doi:10.1136/bcr-2020-234988
14. Laraya-Cuasay LR, Wolfe R, Hughes WT. Acute Pancreatitis and Hypoglycemia. *Clin Pediatr (Phila)*. 1968;7(9):525-528. doi:10.1177/000992286800700906
15. Zhao X. Relation of Glucose and Acute Pancreatitis - Full Text View - ClinicalTrials.gov. Accessed September 2, 2020. https://clinicaltrials.gov/ct2/show/NCT01470885
16. Tonelli F. Respiratory Complications in Acute Pancreatitis. *Pancreat Disord Ther*. 2017;07(02). doi:10.4172/2165-7092.1000e149
17. Tews MC, Shah SM, Gossain V V. Hypothyroidism: Mimicker of common complaints. *Emerg Med Clin North Am*. 2005;23(3 SPEC. ISS.):649-667. doi:10.1016/j.emc.2005.03.013
18. Arlt W, Allolio B. Adrenal insufficiency. In: *Lancet*. Vol 361. Elsevier Limited; 2003:1881-1893. doi:10.1016/S0140-6736(03)13492-7

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