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Case Report

Case Report: The Value of Vigilance and Iterative Evaluations with an Uncooperative Patient in the Emergency Department

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Abstract

A patient in the sixth decade of life presented to the Emergency Department (ED) with an apparent suicide attempt as well as with abdominal pain. The patient appeared to be inebriated. The prehospital emergency medicine service (EMS) providers suggested that the presentation may have been due to diabetic ketoacidosis. A chest x-ray finding showed possible pneumoperitoneum, but was read by radiology has having been seen on a chest x-ray from a year prior. Repeat physical examination continued to show abdominal tenderness, leading to a CT scan of the abdomen that demonstrated a large pneumo-peritoneum with a mild ileus and chronic surgical findings. The patient was transferred to a tertiary level of care for exploratory laparotomy after broad spectrum antibiotics and additional pain medication given. A bowel perforation was identified and was repaired. He had an uncomplicated clinical course and was discharged from the hospital 8 days later.

The critical thinking skill of iterative reconsideration of a diagnosis along with iterative testing can avoid the pitfalls that can attend to such biases of cognition as anchoring and premature closure of thinking.

Key words: care of psychiatric patients in the emergency department; cognitive bias; uncooperative patients in emergency department

Introduction

The tendency to to lock into a particular diagnosis has been referred to in the literature as an "anchoring bias" and can lead to a failure to investigate all aspects of the case. [1, 2] This failure to investigate further has been called "premature closure bias" and can lead to an incorrect diagnosis. [1] These cognitive issues can complicate the sometimes already difficult problem of making a medical diagnosis in a patient with a psychiatric diagnosis. [4]

Case Presentation:

A male patient in the sixth decade of life, with a history of alcohol abuse, diabetes mellitus secondary to pancreatectomy, hypertension and stroke, presented to the Emergency Department (ED) via the Emergency Medicine System (EMS) for abdominal pain and an apparent suicidal attempt. EMS was called by the patient to a local motel, where they found the room filled with empty bottles of alcohol. The patient reported to EMS that he had not eaten or taken his medication, including insulin, for 5 days, in an apparent suicidal attempt. The patient had developed severe abdominal pain, prompting the EMS call. On arrival to the ED, the patient was confused and appeared to be possibly inebriated. He was moderate distress and was very uncooperative, which made it difficult to obtain intravenous access, or to obtain a detailed medical history. He admitted to excessive daily alcohol ingestion over the prior week. He also admitted to not taking insulin; but at the time of his ED evaluation he denied that his medication noncompliance was a suicidal attempt. Physical examination showed vital signs with blood pressure 170/74, HR 111, pulse ox 98% on room air, BMI of 18.8 and an oral temp of 98.9°F. He was in acute distress with dry mucosa, tachycardia, but had clear lung fields and a diffusely tender abdomen with guarding. The rest of the physical was limited due to patient being uncooperative. The work-up was initially geared towards diabetic ketoacidosis, given the report from EMS and the patient's medical history and physical examination. A review of the patient's medical record revealed that he was seen nine months prior at a near-by hospital for a perforated bowel that was surgically repaired without complications. At the current visit, the alcohol level was 193. A

complete medical panel showed an anion gap of 22, glucose 320; venous blood gas pH 7.22 and bicarbonate of 19; lactate 7.8; urinalysis with ketones and glucose; CBC with WBC 11.5. A chest x-ray showed right basilar atelectasis and a translucent projection under the diaphragm bilaterally, suggesting pneumo-peritoneum, but was reported as being present on previous chest x-ray dated a year prior.

A CT scan of the abdomen was then ordered. The results showed a large pneumo-peritoneum with a mild ileus and chronic surgical findings. The patient was transferred to a tertiary level of care for exploratory laparotomy after broad spectrum antibiotics and additional pain medication given. A bowel perforation was identified and was repaired. He had an uncomplicated clinical course and was discharged from the hospital 8 days later.

Discussion:

A Flexible and Vigilant Approach:

The initial presenting information from EMS could have led to anchoring bias on the preliminary diagnosis of DKA. A flexible approach led to new information which led to interative testing.

The tendency to to lock into a particular diagnosis has been referred to in the literature as an "anchoring bias" and can lead to a failure to investigate all aspects of the case. [1, 2] This failure to investigate further has been called "premature closure bias" and can lead to an incorrect diagnosis. [1]

Iterative physical examination:

There are cases, as seen in this case report, where the physical examination unreliable or even impossible. Iterative evaluations led to a chest x-ray being done, which ultimately led to the abdominal CT. This process of considering a new possible diagnosis has been called the "promotion of critical thinking" and is a way to overcome the cognitive bias of anchoring and premature closure. [1,2]

Iterative testing:

In the case presented, the radiologist reported the translucent projection under the diaphragm as being present on a CXR

seen a year ago; however, given the patient's clinical presentation, further imaging studies were necessary as a pneumoperitoneum is an acute process. The iterative testing stopped the bias of "search satisfaction error" where a particular positive finding cuts of further thinking and is related to anchoring and premature closure. [3] Additionally, free air after surgery or abdominal procedure is common and can be seen in 60% of laparotomies and 25% of laparoscopic procedures. Usually after two days, two-thirds of cases are resolved and within 5 days, 97% of cases are resolved. [7]

Forms of cognitive bias:

In addition to anchoring bias, premature closure bias and search satisfaction error, other forms of cognitive bias can exist. A clinician may have recently had an unusual diagnosis and may assume that this unusual diagnosis will not recur for some time ("Gambler's bias") or may have had a number of benign and common diagnosis of a similar type (such as viral infections in consecutive pediatric patients) and may fail to consider a new diagnosis, such as sepsis. This is called "posterior probability bias". [1]

Ways to prevent cognitive bias:

Checklists can help to prevent cognitive bias, as can built-in reminders in a computerized system to consider such things as allergic interactions prior to proceeding (forcing functions). [1]

Cognitive bias and psychiatric patients in the emergency department:

Identifying medical issues in psychiatric patients in the emergency department setting can be difficult. This can be because the patient may be obtunded or uncooperative. [4,5] In fact, the challenge of the entire process of medical evaluation of a psychiatric patient has led to controversy surrounding the term "medical clearance". [6]

Conclusion:

This case illustrates how critical thinking skill of iterative reconsideration of a the diagnosis along with iterative testing avoiding the pitfalls that can attend to such biases of cognition as anchoring and premature closure of thinking. These cognitive issues can complicate the sometimes already difficult problem of making a medical diagnosis in a patient with a psychiatric diagnosis.

Conflicts of Interest:

The authors declare that they have no conflicts of interest.

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