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### How Anchoring Can Sink The Ship

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# How Anchoring Can Sink The Ship

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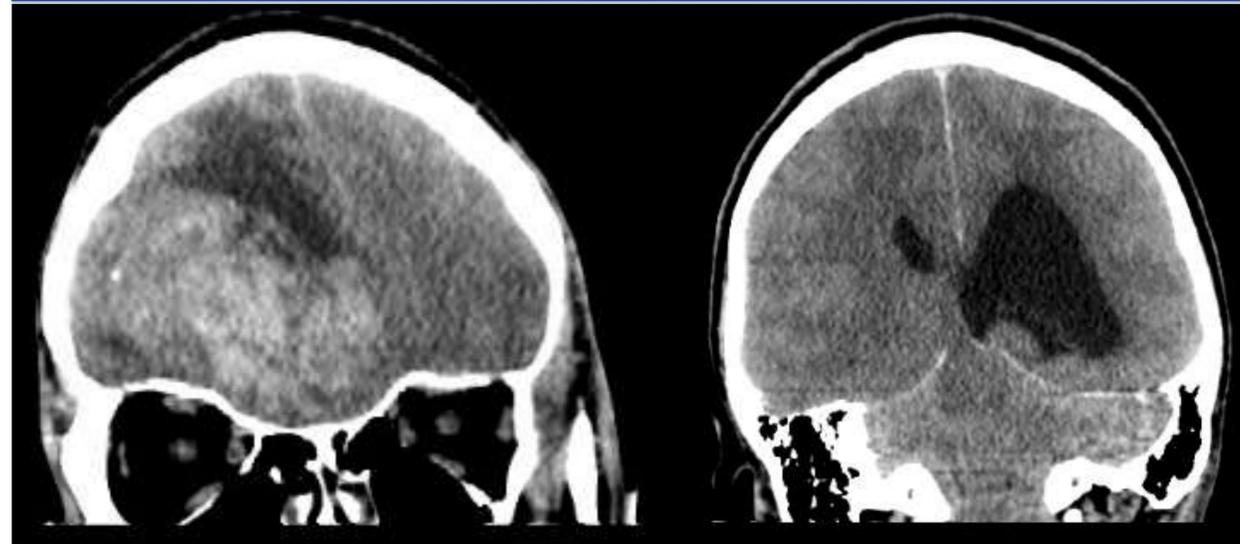
## Introduction

Anchoring bias is a type of heuristic that uses an initial source of information as an “anchor” for basis of decision making<sup>1</sup>. Then judgments and thought processes are led by this sole foundation. There are many different types of influences and bias used in medical decision making, which has prompted concerns regarding their impact on diagnostic inaccuracies<sup>2</sup>. Studies have identified “anchoring” conducted in medical literature, clinical vignettes and real life scenarios<sup>3</sup>. These cognitive bias and aversions to ambiguities can lead to medical errors, inappropriate use of resources, and harm to the patient<sup>2</sup>. We focus our case on the effects of anchoring diagnosis.

## Case Description

- We describe a case of a 29 year old male with past medical history significant of chronic headaches, who presented to the emergency department from home via police escort for suspected polysubstance overdose.
- Police were called for questionable seizure and medication overdose. They were unsure what medications the patient took.
- The patient stated taking an unknown amount of prescribed clonazepam, sumatriptan and ibuprofen. He was unable to provide the timing or amount of ingestion.
- Physical exam was positive for confusion, bradycardia and hypertension.
- Urine drug screen was positive for amphetamine, benzodiazepine and cannabinoids. A few hours later the patient continued to appear drowsy with intermittent agitation requiring soft restraints.
- On hospital day 1, he was noted to be very lethargic, unresponsive and hypoxic on room air. Code blue was called and patient was intubated and transferred to the ICU.
- Upon reexamination, the patient’s pupils were dilated and fixed.
- Subsequent CT head showed a large 10 cm hyperdense right frontal lobe mass with resultant uncal herniation and severe hydrocephalus (**Figure 1, Figure 2**) .
- After successful contact with the family and getting a history from the mother, she reported significant personality changes, increasingly odd behaviors, memory loss, worsened headaches and gait disturbances over multiple years. The mother had assumed the patient was using drugs. She also confirmed the number of pills left in the prescription bottles was accurate.
- At this point, the patient was transferred to a tertiary hospital for escalation of care and neurosurgical intervention where he ultimately died.

## Imaging

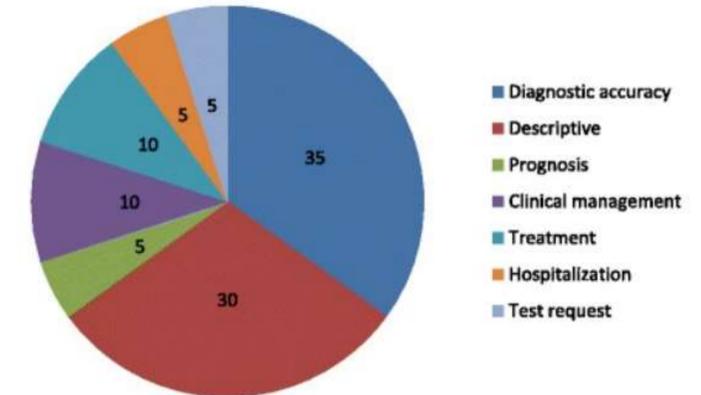


**Figure 1:** CT Head - Right frontal convexity hyperdense mass with mass effect on the right frontal lobe causing moderate to severe vasogenic edema with resultant subfalcine and uncal herniation. There are coarse calcifications within this mass.



**Figure 2:** CT head – There is moderate to severe bilateral dilation of the lateral ventricles greater on the right and asymmetrically involving the right frontal horn.

## Figure



**Figure 3:** Outcome measures of studies evaluating cognitive biases. Numbers represent percentages. Total number of studies = 20. Note 35 % target diagnostic accuracy. Only few studies evaluated medical management, treatment, hospitalization or prognosis<sup>2</sup>.

## Conclusion

- We present a unique case of acute metabolic encephalopathy impacted by anchoring diagnosis of drug overdose that later confirmed a diagnosis of brain tumor. If we had spent more time obtaining all the facts, we could have obtained a CT head and arrived at a diagnosis before the patient herniated. Inability to recognize cognitive bias, runs the risk of diagnostic inaccuracies, unnecessary prescribed medications and underestimation of testing<sup>4</sup>. More importantly, addressing anchoring allows the opportunity to decrease patient harm, guide future occurrences and tailor research towards minimizing these outcomes<sup>5</sup>.

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