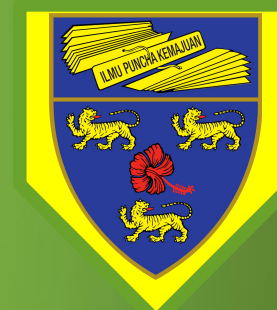


# UNUSUAL STROKE MIMIC SUSPECTED METHANOL POISONING IN A COVID-19 PATIENT



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## 1 INTRODUCTION

Methanol poisoning from fraudulent adulterated alcoholic beverages is an important differential in a patient with stroke-like symptoms. This presentation is frequently overlooked by physicians leading to inadequate or delayed therapeutic interventions. This condition is exacerbated by the patient's concomitant COVID-19 infection, and failure to recognise this crucial diagnosis can prove to be fatal.



**Figure 1:** The selling of counterfeit alcoholic beverages is rampant in this country.

Methanol ingestion can be accidental or the consequence of a suicide attempt. Mortality rates from methanol intoxication have been reported to range from 8-36% with another 20-40% of those who survive the acute injury suffering permanent neurological sequelae.

## 2 CASE REPORT

### PATIENT'S HISTORY

A 64-year old, gentleman with underlying diabetes mellitus, hypertension, and chronic alcoholism presented with slurring of speech, blurring of vision, unilateral limb weakness, altered mentation, and cough. History revealed, he had consumed three bottles of whiskey that was locally brewed prior to presentation.

**Figure 2:** Locally brewed whiskey that patient consumed



### CLINICAL EXAMINATION

Upon arrival, his vitals were blood pressure 121/81 mmHg, heart rate 140 beats/min, and temperature of 37 C. His GCS was E4,V3,M5 and pupil 3/3 mm bilaterally reactive. His neurological examination revealed power 3/5, hyperreflexia, and positive Babinski's sign over left sided of body.

### INVESTIGATIONS

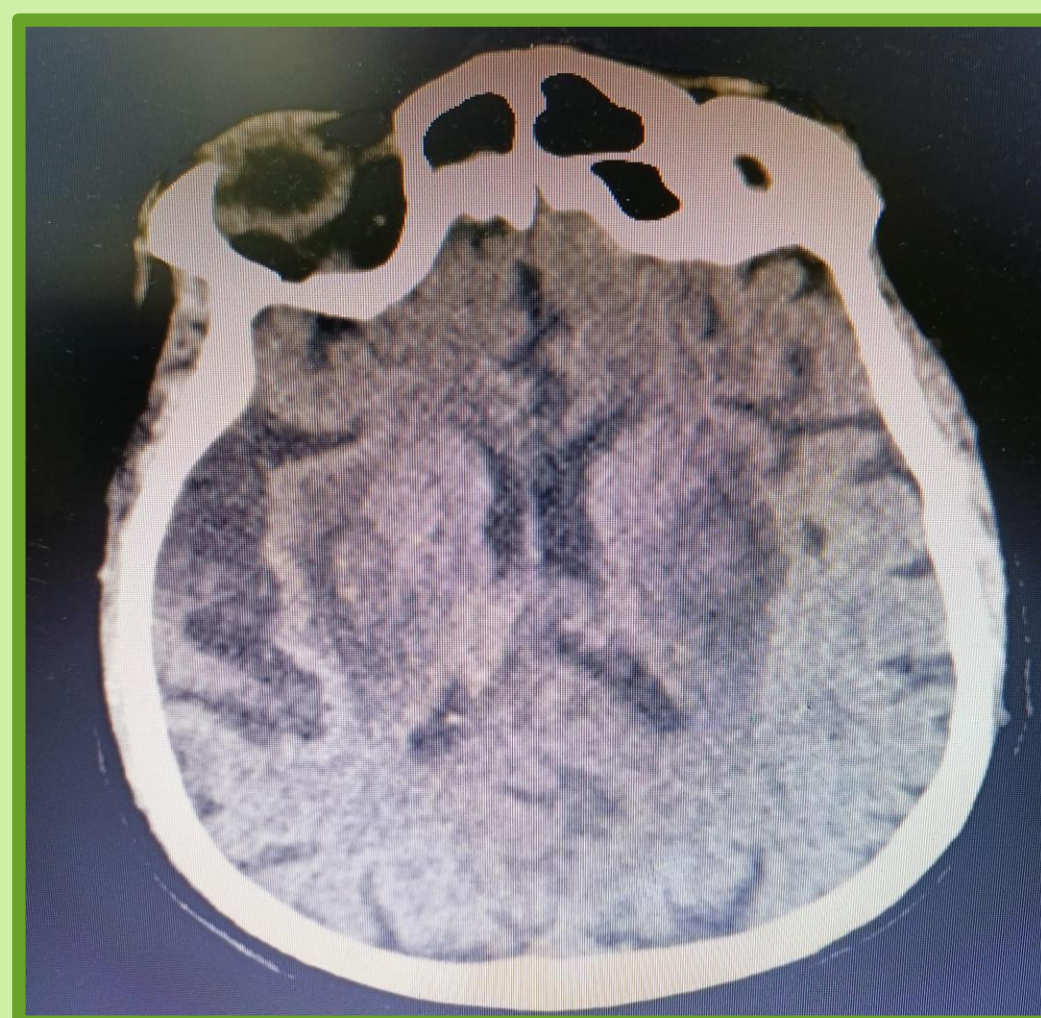
A computed tomography (CT) of the brain showed hypodense lesions over both lentiform nuclei, and a well-defined hypodensity at the right cerebellar peduncle. A diagnosis of stroke was made. His blood tests, however, revealed significant metabolic acidosis with a high anion gap (HAGMA). His observed osmolality was 386 mmol/kg, but his calculated serum osmolality was 294 mmol/kg which indicated a high osmolal gap. COVID-19 RT-PCR was also positive. The diagnosis was revised as methanol toxicity.

### MANAGEMENT

The patient was isolated and mechanically ventilated. He was admitted to Intensive Care Unit. Haemodialysis commenced, and 20% oral ethanol was administered via a naso-gastric tube.

### PROGRESS

Throughout his hospitalization, the patient deteriorated and developed a hospital-acquired infection and multi-organ dysfunction. Due to prolonged ventilation, he required a tracheostomy. His neurological function remained unchanged throughout treatment. The patient's EEG exhibited diffuse polymorphic delta slowing that was unresponsive to external stimuli, indicating significant diffuse cortical dysfunction. The patient ultimately had a cardiac arrest with subsequent fixed and dilated pupils.



**Figure 3:** CT Brain demonstrates bilateral hypodensity lesions over lentiform nuclei

## 3 DISCUSSION / CONCLUSION

### DISCUSSION

Altered mental state, blurred vision, HAGMA, and a high osmolal gap are all classic symptoms of methanol poisoning. Stroke-like presentations are reported infrequently. Owolabi et al reported two occurrences of methanol-induced stroke in patients after consuming illicit alcohol beverages. Both patients complained of vomiting, headaches, and an alteration in mental state. The first patient became quadriplegic and died two months later, while the second patient made only minor improvements in his levels of consciousness.

The CT and MR findings of bilateral putaminal necrosis with or without haemorrhage, as well as subcortical white matter lesions, are unique, and a high index of suspicion for methanol poisoning should be considered.

Several mechanisms have been proposed including vascular drainage pattern of the lenticular nucleus, direct toxic effects, and relative ischemia caused by the high metabolic rates of basal ganglia and optic nerves.

### CONCLUSION

Even before the HAGMA emerges, a poor correlation of clinical and CT findings, notably infarct or haemorrhage of bilateral lentiform nuclei, should raise suspicion of additional differentials in stroke mimics such as methanol poisoning.

## 4 DISCLOSURE

### ACKNOWLEDGEMENT

We would like to thank the Director General of Health, Malaysia for the publication of this poster.

### CONFLICT OF INTEREST FOR ALL AUTHORS

None declared.

## 5 REFERENCES

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