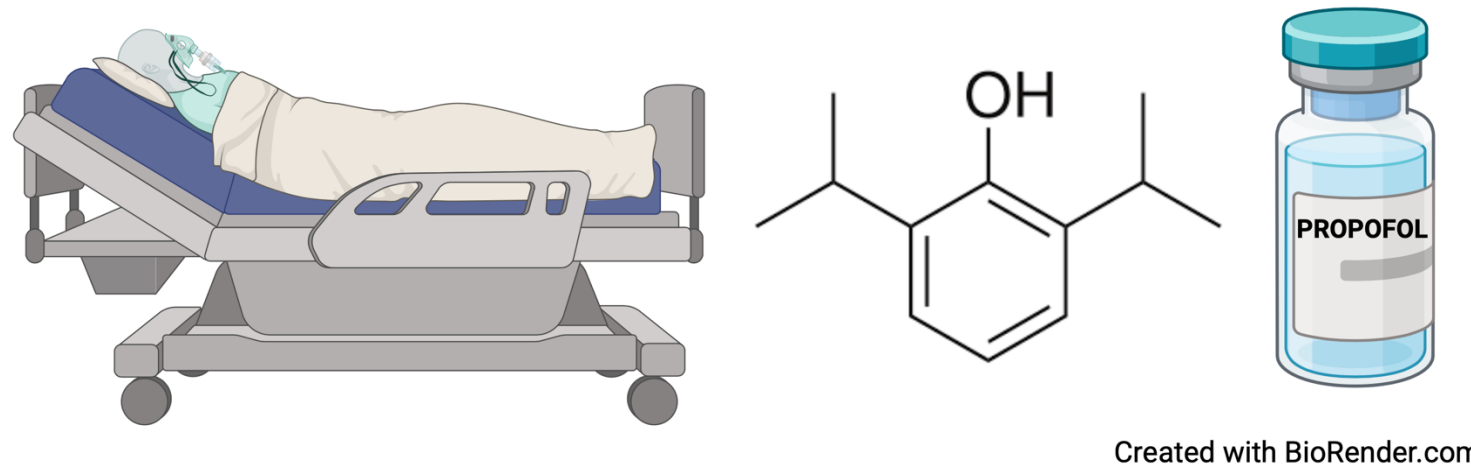


INTRODUCTION

- Propofol is a short-acting IV anesthetic used for induction and maintenance due to its rapid onset, smooth recovery, and low complication rate.
- Rarely, patients develop neuro-excitatory reactions (e.g., myoclonus, seizure-like activity, or delayed recovery), highlighting a gap in understanding their underlying mechanisms.
- This case presents a delayed, reproducible episode of unresponsiveness with myoclonic movements and stable vitals, distinguishing it from known propofol-related complications.
- Awareness of this atypical reaction may help avoid misdiagnosis and guide safer anesthetic use.



FINDINGS AND DISCUSSION

Initially stable and alert, patient became unresponsive within minutes, exhibiting irregular myoclonic movements. Labs showed mild CK elevation (670 U/L) and prolactin (36.5 ng/mL). Neurological function returned to baseline within 5 hours, and patient was discharged the next day.

The absence of hyperthermia, acidosis, or epileptiform activity excluded malignant hyperthermia, propofol infusion syndrome, and seizure, supporting an idiosyncratic, propofol-related neuromuscular reaction possibly linked to mitochondrial or glycine receptor dysfunction.

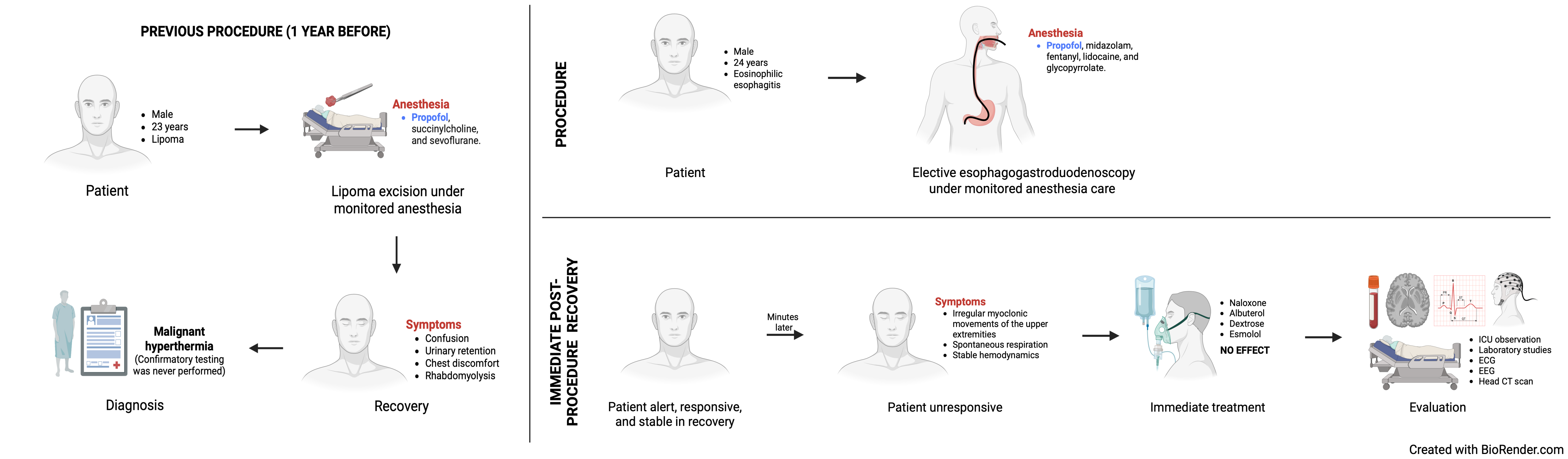
Table 1. Differential Evaluation of Possible Etiologies for Post-Propofol Event

Conditions	Features	Present or Absent
Malignant Hyperthermia	Hypercarbia, rigidity, fever, and acidosis.	✗
Propofol Infusion Syndrome	Prolonged high-dose use, acidosis, and collapse	✗
Seizure	EEG changes and tonic-clonic movements	✗
Allergic Reaction	Rash, bronchospasm, and hypotension	✗
Idiosyncratic Propofol Reaction	Myoclonus, delayed unresponsiveness, and stable vitals	✓

Table 2. Proposed Mechanisms Underlying the Idiosyncratic Propofol Reaction

Hypothesized mechanisms	Description	Outcome
Mitochondrial Dysfunction	Transient impairment of oxidative phosphorylation and energy deficit.	↓ ATP, ↑ ROS → oxidative stress
Glycine Receptor Antagonism	Inhibitory neurotransmission blockade leading to cortical hyperexcitability.	↑ Neuronal hyperexcitability → myoclonic movements

CASE DESCRIPTION



CONCLUSIONS

- This case underscores the importance of considering idiosyncratic propofol reactions in patients with unexplained delayed emergence, particularly when standard causes have been excluded.
- The reproducibility of this reaction emphasizes the need for further research into a potential patient-specific vulnerability, possibly related to mitochondrial or receptor level variations.
- Ongoing documentation of similar cases to common anesthetics can help reveal underrecognized anesthetic phenomena across institutions and inform safer anesthetic practices.
- Integrating case base discussions like this into anesthesia education can help enhance confidence in recognizing atypical adverse reactions.

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