



## Shared Learning

from the Dental Patient Safety Foundation Reporting Tool

P0198

“What gets measured gets managed” is the DPSF philosophy to encourage reporting. All received information about patient safety events (unsafe conditions, near misses or adverse events) are contextually de-identified (full confidentiality is preserved), aggregated, analyzed and abstracted by selected experts from our DPSF committees. Reports are generated and disseminated as the only means to learn from our errors. The information in these peer-reviewed reports is provided for its educational value only, and does not purport to establish any legally binding standard of care. Feedback is encouraged.

### Case 2018.8A: Delayed Recovery After Sedation

**Situation:** A healthy 22 y/o female presented for removal of 4 carious teeth with sedation. PMH was unremarkable except for “supplements” dispensed by her naturopathic doctor. Blood pressure was 135/85mmHg with a resting HR of 85bpm. She was 5’5”, 195# (BMI=32.4). To help manage her anxiety, the oral surgeon prescribed 2 x 0.25mg triazolam tablets, one to be taken the night before and one to be taken on the morning of the appointment.

Surgery and sedation went well, with an initial intravenous profile of 2.5mg midazolam, 50µg fentanyl and 40mg propofol, bolused intermittently. During the 35 minute procedure, an additional 5mg midazolam and a total of 70mg of propofol were administered. After the procedure, the patient did not awaken as anticipated. She was unable to maintain an open airway independently and responded with reflex withdrawal only to a painful stimulus for another 25 minutes. In spite of stable vital signs, a decision was made to incrementally administer 0.1mg doses of flumazenil (4 total) titrated to an endpoint of normal responsiveness to verbal stimulation. After 3 more hours of observation, she was discharged home with her escort. Further recovery was uneventful.

On the follow-up visit, her delayed recovery was discussed. She admitted that she didn’t take the PM dose of triazolam as she wasn’t anxious then. Instead, she took one in the morning and felt no different so she took the second one 20 minutes before arriving at the office. In addition, her mother thought she was too anxious and gave her one of her Xanax™ pills before they arrived.

**What we learned:** Delayed awakening from anesthesia should be aggressively investigated to ensure that correctable causes are remediated, as shown on the table. Responsiveness, airway, breathing, circulation and oxygenation (**RABCO**) assume priority. In this case the patient taking additional benzodiazepines (the second dose of triazolam and the mother’s Xanax) led to an overdose requiring reversal. Once reversal agents are administered continued monitoring of the patient is necessary as re-sedation can occur once the stimulation of the surgery has concluded, or after the effect of reversal agents has terminated. Reversal agents should never be used to hasten recovery, and in fact, if used, mandate prolonged monitoring in the event of re-sedation, as the clinical effect of the reversal agent is typically much shorter than the drug being reversed.

<b>Pharmacologic</b>	Drug overdose (relative/absolute)	Monitor, wait it out, drug reversal, respiratory and cardiovascular support as needed
	Adverse drug reaction	
	Synergistic drug action	
	Idiosyncratic reaction	
	Anticholinergic reaction	
	Paradoxical disinhibition	
	Emergence delirium	
<b>Metabolic</b>	Hypoxia	Airway, breathing, suppl. O <sub>2</sub>
	Hypoglycemia	Oral sugar source / 50 ml D <sub>50</sub> IV
	Hypothermia	Cover with blanket
	Hypercarbia	Ventilation
<b>Patient</b>	Receptor #, sensitivity [plasma proteins]	Monitor / wait / reverse
	“self-medicating”	
	Hypovolemia	IV fluids
	Psychiatric challenges	See bibliography

**Recommendations** – A focused update medical history should be obtained immediately prior to sedation, with full documentation and comprehension of ALL medications recently taken.

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