DPSF | DENTAL PATIENT SAFETY FOUNDATION

Patient Safety Listed PSO Organization

P0198

Shared Learning

from the Dental Patient Safety Foundation Reporting Tool

"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 de-identified contextually (confidentiality is fully protected under federal law), 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 2024.12A: Excessive Sedation Duration for "longer" procedures

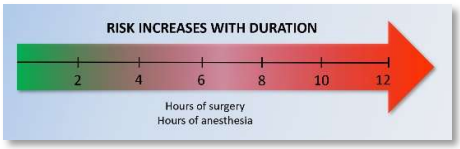
Situation: A 68 y/o female presented to a dental specialist requesting single-visit full mouth rehabilitation to include removal of all 25 teeth, reduction alveoloplasties, placement of implants and immediate load prostheses. The procedure was scheduled for 6 hours. PMH included hypertension (metoprolol), type II DM (metformin, held prior to surgery), and a 20 pack-year history of tobacco smoking, quit 6 months prior. She was 5'4", 145#, 165/90 mmHg, A1c 7.9, 82 bpm (sinus) and a room air SpO_2 94%. Pre-op fasting glucose was 168mg/dl. A separate anesthesia provider agreed with this treatment plan, intending moderate to deep open airway sedation. Several untoward events followed.

The specialist "ran into complications" which extended the anticipated duration of the case. Deeper than intended sedation became necessary for pain control, as maximal doses of local anesthetics had been given. In spite of supplemental O_2 administration, SpO_2 dropped and hovered at 90%. Cardiac rhythm disturbances became pronounced. The patient lost bladder control, and the anesthesia provider requested that the procedure be aborted after the 5th hour, unwilling to convert to general anesthesia with intubation. The patient and family were quite displeased. The patient was discharged 2.5 hours later, vowing to never return to this office.

What we learned: A noticeable uptick in both marketing and patient demand for immediate full arch implant restorations, coupled with the availability of online / weekend training courses for dentists of all skill levels, and separate, willing anesthesia providers, who may not fully appreciate the nature of these procedures and the necessity for long duration anesthesia in an office setting are all contributory to this unfortunate outcome.

Recommendations to improve patient safety and quality of care

1. Patient AND procedure selection should align optimally with practitioner proficiency, including ability to manage complications.
2. MD anesthesiologists and CRNA's may not understand the true necessity for sedation/anesthesia, and will be willing to provide such services to comply with the requesting dentist.
3. Not all patients can be adequately sedated, esp. for lengthy procedures. A backup plan should be discussed with each patient in advance.
4. Risks of sedation increase with duration, esp. with immobile, compromised patients who are spontaneously breathing. These include fluid balance; local anesthetic overdose; prolonged recovery; insidious onset of hypoventilation, atelectasis causing hypercarbia, acidosis and cardiovascular compromise; clot formation, pressure necrosis, and neuropathy, among others.
5. Although there is no standard of care at the present time, most procedures involving office-based sedation should never last beyond 4 hours, in an ASA I patient.



Practitioner Proficiency		High	Medium	Low
Procedure Risk (Invasiveness)		Low	Medium	High
ASA Physical Status	I	GO	GO	CAUTION
	II	GO	GO	CAUTION
	III	GO	CAUTION	

The DPSF encourages frequent reporting of unsafe conditions, near misses and adverse events as the only means to close the gap between knowing how to prevent these occurrences and taking the necessary action to do so. Please visit our website.

References:

Kramer, K. Do you have a Backup Plan or Exit Strategy? Anes Prog 71:107-8, 2024.

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