Strategies to Mitigate the Risk of Sleep Apnea

Airway obstruction and respiratory depression with sedatives and opioids

- Avoid or minimize sedative premedication.
- Use titrated infusion rather than bolus dosing of sedatives to decrease episodic respiratory depression.
- Consider sedatives without respiratory depressant effects (eg, dexmedetomidine).
- Use continuous oximetry and ventilation monitoring (eg, capnography) when sedatives are given.
- Use PAP device, hypoglossal nerve stimulator, or oral appliance for patients accustomed to these devices, if sedatives are administered.
- Administer supplemental oxygen to avoid hypoxemia during monitored anesthesia care.

Gastroesophageal reflux disease and pulmonary aspiration

- Premedicate with prophylactic agents (proton pump inhibitors, H2-receptor antagonists, or non-particulate antacids).
- Consider cricoid pressure and rapid sequence induction and intubation.
- Difficult airway (mask ventilation, supraglottic airway ventilation, laryngoscopy, and intubation).
- Assure availability of airway adjuncts and personnel for assistance.
- Position with head elevated (reverse Trendelenburg) for preoxygenation and laryngoscopy.
- Use maximally effective preoxygenation (tight-fitting mask, >3 minutes, consider PAP, end-tidal oxygen fraction of 0.87 to 0.9).
- Use two-person mask ventilation if mask ventilation is difficult.
- Use apneic oxygenation with nasal oxygen insufflation or if available, transnasal humidified high-flow oxygen (up to 70 liters/minute–1) via purpose-made nasal cannula, to prolong apnea time.
- Follow difficult airway guidelines and algorithms.
- Consider sugammadex for reversal of rocuronium or vecuronium in the cannot-intubate-cannot-oxygenate difficult airway scenario.

Atelectasis and lung injury

- Positive end expiratory pressure and lung recruitment maneuvers.
- Protective ventilation (low tidal volumes, low driving pressures, and low plateau pressures).

Rostral fluid shift leading to airway narrowing

- Administer fluid judiciously.
- Avoid fluid with high salt content.
- Position head up when feasible.

Prolonged postoperative effects of anesthetic agents (airway obstruction and respiratory depression)

- Consider short-acting general anesthetic agents, including intravenous and insoluble volatile agents (eg, desflurane, remifentanil, propofol).
- Minimize opioids by using regional anesthesia or multimodal analgesia techniques as appropriate (eg, nonsteroidal anti-inflammatory drugs, COX-2 inhibitors, acetaminophen, tramadol, ketamine, dexmedetomidine, dexamethasone).

Post-extubation airway obstruction

- Verify full reversal of neuromuscular blockade.
- Consider use of sugammadex for reversal of rocuronium (or vecuronium).
- Extubate with patient awake (fully conscious and cooperative; airway reflexes intact).
- Extubate and recover in a non-supine position (head-up or lateral).
- Apply PAP early for patients using it preoperatively, or to treat hypoxemia or obstruction.
- Resume use of oral appliance or hypoglossal nerve stimulation therapy in patients using them preoperatively.