PERIOPERATIVE OBSTRUCTIVE SLEEP APNEA [OSA] MANAGEMENT

Policy: The Surgery Centers will activate the perioperative OSA management protocol on all patients with known or suspected OSA.

Purpose: OSA is defined by the ASA as a “syndrome characterized by periodic partial or complete obstruction of the upper airway during sleep.” OSA patients who receive sedation, analgesia, or GA are at increased risk of developing complications in the perioperative setting. These complications can include cardiovascular dysfunction, apneic events, hypoxia, airway obstruction, and respiratory arrest. Due to these risk factors, at-risk OSA patients require expanded recovery monitoring.

Indication: This policy will be enacted for patients who:
- Carry the diagnosis of OSA
- Use CPAP, BiPAP, or NIPPV in the community
- Have suspected OSA from pre-op screening – see the following

Preoperative screening for possible OSA: The patient without a sleep study should be considered to have OSA if they have positive findings in two of the following four areas:

1. A positive physical exam - the patient has two or more of the following:
   - BMI > 35
   - Neck circumference > 17” [men], 16” [women]
   - Mallampati IV

2. A positive abnormal sleep history from patient or their family - the patient has two or more of the following:
   - Loud snoring (can be heard through a closed door)
   - Apneic episodes (alarming to an observer)
   - Frequent arousals from sleep

3. A positive history of somnolence - the patient has either:
   - Excessive daytime drowsiness
   - Rapidly falls asleep during the day in a non-stimulating environment

4. History of post-operative airway obstruction with a prior surgery

Pre-Admission Testing:
- Pre-op evaluation will seek the diagnosis of OSA and screen for the possibility of undiagnosed OSA
- Patients with known or suspected OSA must have a pre-op risk assessment by an anesthesiologist – see below
- Patients with CPAP/BiPAP/NIPPV are instructed to bring their machines to TSC on the day of surgery [to be labeled with a patient sticker at that time]
- Inform the patient and family of the possibility of an extended recovery stay
**Risk Assessment:** Classification of periop risk for known or suspected OSA will be guided by the following point system delineated below. Patients with a risk score of 3 or less are at low risk and do not require extended recovery monitoring. Patients with scores of 4 or 5 will require the extended OSA recovery protocol. Patients with scores of 6 or more are at significantly higher risk, and may not be appropriate for surgery as an outpatient; this decision will be at the discretion of the anesthesiologist, who may use the additional risk factors listed below in their decision.

**OSA Severity** [as determined by a sleep study. If sleep studies are not available, assume at least a moderate severity]
- Mild.................................................................1 point
- Moderate.........................................................2 points
- Severe ..............................................................3 points
- Note - if sleep study n/a, assume that the OSA is severe if the patient has morbid obesity, narcolepsy, or CHF

**Type of Surgery**
- Procedures without sedation................................................0 points
- Procedures under MAC or sedation........................................1 point
- Peripheral, superficial, or minor procedures under GA (e.g. podiatric, hand, knee, cysto, D&C, augment, lipo, bleph, skin lesions)........2 points
- Surgery involving the airway [e.g. ENT, facelift, rhino].............3 points
- More major procedures [e.g. abdominoplasty, shoulder, laparoscopy].........................................................................................3 points

**Predicted Post-op Narcotic Requirement**
- None..................................................................................0 points
- PO narcotic to be prescribed, but IV/IM narcotic use in PACU is unlikely.................................................................1 point
- IV/IM narcotic use likely in PACU.............................................3 points

**Established Use of CPAP/ BiPAP /NIPPV** ................................ subtract 1 point
- Note – if patient has been using a device pre-op, and is willing to use it after discharge, one point may be subtracted

**Additional risk factors**
- Long surgical procedures (> 90 min)
- Advanced age (> 70)
- Significant co-existing systemic diseases  (CAD, HF, DM, CKD, CVA, COPD)
- Anatomical abnormalities of the airway
- Questionable post-discharge observation
**Anesthetic Management**

- Limit narcotic use
- Multi-modal analgesia: local, Toradol, Decadron, PO acetaminophen
- Prepare for difficult airway

**PACU:**

- Upon arrival to PACU, administer supplemental O₂ to maintain a saturation of >94%
- Oxygen may be discontinued when the patient is able to maintain a room air saturation of >94% (or if they are able to maintain their pre-op baseline)
- Patients with CPAP/BiPAP/NIPPV will have this therapy initiated if the patient is awake and the saturation falls below 92% (unless they are at their pre-op baseline)
- Whenever possible, avoid the supine position in favor of either a head-up or lateral position
- For GA, the minimum observation time in Phase I PACU is 1 hour. For MAC and IV sedation, the minimum observation time in Phase I would end 1 hour after the last medication was administered

**Extended Post-op Observation:**

- Required for OSA patients with a risk score of ≥ 4
- After Phase I recovery, patient is moved to a non-stimulating area for observation with continuous pulse oximetry. Noise, interruptions and family visitation should be kept to a minimum. Napping is encouraged
- Currently, no national standard exists for how long the observation period should last. Therefore, for the purposes of TSC, this observation period is to be planned for 3 hours.
- This 3 hour period can be decreased or increased only by an anesthesiologist, who may use the following factors in their clinical assessment:
  - Once the patient has met normal discharge criteria, if one hour then passes without any event, it is reasonable to end the observation period, especially if patient was observed while sleeping and there are no home-going narcotic prescriptions.
  - If the patient has spent 3 hours in Phase II, and there is been an event in the last hour, extending the observation time should be considered
  - Events include: desaturation < 90%, respiratory rate falling below 9/min, or a witnessed 10-second apnea.
  - If an event occurs beyond 3 hours in Phase II, overnight observation or hospital transfer should be considered. Hospital transfer may be preferred if the patient has poor pain control or if they can not use their device post-op
**Discharge:**

- Instruct the patient and family on the importance of continuing CPAP/BiPAP/NIPPV while sleeping, day or night
- Instruct the patient and family to utilize non-narcotic analgesics before utilizing narcotic analgesics
- Patients who are suspected of having OSA based on screening criteria should be encouraged to follow up with their primary care physicians to consider a sleep study

Ambulatory Anesthesia, An Issue of Anesthesiology Clinics Jeffrey Apfelbaum Elsevier Health Sciences, Sep 8, 2014

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