Eastern Health

MANAGEMENT OF ADULT SURGICAL CLIENTS WITH KNOWN OR SUSPECTED OBSTRUCTIVE SLEEP APNEA (OSA)	Patient Care 220-PC-015

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Overview

Obstructive Sleep Apnea (OSA) is a sleep disorder that is caused by repetitive partial or complete upper airway obstruction. OSA places the client at increased risk of post-operative apnea and desaturation related to sedation, anaesthesia, and post-operative analgesia.

Post-operative clients identified as high risk for respiratory complications will be ordered **continuous monitoring** for the immediate post-operative period. Continuous monitoring is provided by a registered nurse or respiratory therapist either directly in the same physical location or remotely via remote pulse oximetry.

POLICY

1. All elective surgical clients will be screened for symptoms of OSA preoperatively by the attending surgeon.
2. All surgical clients with known or suspected OSA will be assessed by Anaesthesia preoperatively.
3. Clients with known or suspected OSA are booked for operative procedures early in the day (when possible) to allow for the extended period of observation in the Post-Anaesthesia Care Unit (PACU).
4. All clients with known or suspected OSA will be identified on the Operating Room (O.R.) Schedule.
5. If the client uses continuous positive airway pressure (CPAP) or non-invasive ventilation (NIV) therapy at home, he/she is instructed to bring the CPAP/NIV machine and mask to the hospital on the day of surgery.
6. The level of care required post-operatively is determined through a preoperative risk assessment by the anaesthesiologist and the client's perioperative course/experience.
7. The anaesthesiologist retains ultimate discretion as to the client's immediate post-operative management in PACU.
8. If a client is ordered post-operative continuous monitoring for OSA, **the RN/RT must be in the client's room at all times.**

   EXCEPTION: Where continuous monitoring is provided by Remote Pulse Oximetry System.

Scope

Physicians, registered nurses, respiratory therapists working within Regional Surgical Services.

Purpose

To reduce the risk of adverse outcomes in surgical clients with known or suspected OSA who receive sedation, analgesia or anaesthesia.

Procedure

Preoperatively

1. The surgeon screens all clients for OSA who are to receive anaesthesia, as part of the history and physical exam.

   If OSA is suspected, the surgeon will:

   (a) Arrange sleep studies with trial of CPAP (as indicated) prior to the client's planned surgical date.

   (b) Indicate the presence/suspicion of sleep apnea on the O.R. Booking Package.

2. During the Pre-Admission Clinic (PAC) visit, all clients with known or suspected OSA will be assessed by Anaesthesia for risk to determine the appropriate level of monitoring post-operatively, *i.e.,* routine, continuous monitoring, or intensive care.

   (a) Interpretation of completed sleep studies are obtained in PAC. If no previous sleep studies have been completed, urgent preoperative sleep studies are to be arranged. If not feasible, client may be treated presumptively as having OSA.

   (b) Notification of increased level of monitoring:

   The Pre-admission Clinic nurse notifies:

   - OR booking clerk and Operating Room Patient Care Coordinator when a client with OSA is identified; and
   - Inpatient Unit Manager or Patient Care Coordinator of the accepting service.

Day of Surgery

1. Surgical Day Care (SDC) nurse notifies RT of the arrival of a client with CPAP/NIV upon checking the client in on his/her day of surgery.

2. Where possible, the RT will assess the client with known or suspected OSA prior to transfer to the OR; however patient transfer will not be delayed if the RT is not available. Use of hospital-owned CPAP/NIV is preferred, but if a hospital device is unavailable, the client's device may be used following RT device verification with Biomedical. Client owned mask interface with tubing will be visually checked by RT and used with the CPAP/NIV machine.

Post-Operatively

1. All clients with OSA are observed in PACU with continuous pulse oximetry.

2. Clients having outpatient surgery may be discharged home after **four hours** of assessment in PACU, if:
   - PACU discharge criteria are met.
   - Assessed by Anaesthesia.
   - Compliant with preoperative CPAP/NIV (if applicable).
   - No significant apnea, airway obstruction, or desaturation noted in PACU.
   - Adequate analgesia with non opioids or weak opioid analgesia, *e.g.,* acetaminophen with codeine.

3. Clients will be discharged to an inpatient unit following **four hours** of assessment in PACU, **without** continuous monitoring, if:
   - PACU discharge criteria are met.
   - Compliant with preoperative CPAP/NIV and equipment is set up and functioning.
   - No significant periods of apnea, desaturation noted in PACU.
   - Adequate analgesia.
   - Written orders for CPAP/NIV and oxygen.
   - Notify RT of admission and anticipated time of transfer to inpatient unit. RT will be responsible to relocate CPAP/BiPAP equipment to patient's room.

4. Clients will be discharged after one hour to an inpatient unit, **with** continuous monitoring, if:
   - PACU discharge criteria are met.
   - Client is able to maintain SpO_2 above 92%, and no periods of apnea noted in PACU.
   - Adequate analgesia levels.
   - Written orders for oxygen, continuous pulse oximetry, and continuous monitoring.
   - RT notified of admission and anticipated time of transfer to inpatient unit. RT will be responsible to relocate CPAP/BiPAP equipment to patient's room.

5. Clients may be consulted to the Intensive Care Unit (ICU) if:
   - Prolonged apneic periods or repeated bouts of desaturation observed in PACU.
   - Significant pre-surgical co-morbidities.

6. Clients who are discharged to an inpatient unit and require continuous monitoring post-operatively will have:
   (a) Anaesthesiologist or designate order for:
      - Continuous monitoring for a minimum of 12 hours. Monitoring must continue overnight on the day of surgery.
      - The administration of supplemental oxygen to maintain SpO_2 greater than or equal to 92%, except where pre-hospital SpO_2 is less than 92%.

   (b) Continuous pulse oximetry alarm to be set at 92, unless otherwise ordered by

anaesthesiologist.

(c) An assessment by a RT/MD if respiratory distress occurs; if client is unable to maintain O_2 saturation greater than 92%; or if the client requires greater than 5 liters of O_2 to maintain O_2 saturation greater than 92%.

(d) Document respiratory rate and oxygen saturation every hour.

(e) Vital signs, *i.e.,* blood pressure, pulse and temperature monitored a minimum of every four hours, and more frequently, as needed.

(f) Continuous monitoring for apneic periods, desaturation and ability to rouse themselves.

- Document each apneic and desaturation event and client's ability to rouse themselves.

(g) Client positioned in a lateral or semi-Fowler's position, where possible, post-operatively - avoid the supine position.

(h) Respiratory Therapy assessment every 4 hours.

EXCEPTION: In sites without 24-hour in-house RT coverage, RT assessment every 4 hours during regular hours and upon request when on standby.

7. The order for discontinuation of continuous monitoring is obtained following a review of the client's condition by:

(a) The anaesthesiologist who is responsible for care of the client while receiving Patient Controlled Analgesia or Epidural Analgesia;

(b) The surgeon (or delegate) for all other clients.

NOTE: If further guidance is required, the surgeon or delegate may consult the Anaesthesiologist or Respirologist.

Supporting Documents

- Chung, S.A., Yuan, H., & Chung, F. (2008). A systematic review of obstructive sleep apnea and its implications for anesthesiologists. *Ambulatory Anesthesiology, 107*(5), 1543-1563.
- Power-Murrin, M. (2008). Report on the perioperative management of patients with diagnosed or suspected obstructive sleep apnea.

Linkages

- Continuous Pulse Oximetry, 204(NUR)-12-100
- Management of BiPAP/CPAP Units in Acute Care, PRC-090
- Hand Hygiene Policy, IPC-150
- Personal Protective Equipment, IPC-190
- Routine Practices, IPC-200

Key Words

Sleep apnea, apnea, obstructive sleep apnea

Definitions & Acronyms

Obstructive Sleep Apnea (OSA)	Obstructive Sleep Apnea (OSA) is a sleep disorder that is caused by repetitive partial or complete upper airway obstruction. It may be treated by the use of CPAP/NIV in the community.
Continuous Monitoring	The provision of continuous oxygen saturation monitoring, either remotely or directly, by a registered nurse or a respiratory therapist.
O.R.	Operating Room
PACU	Post-Anaesthesia Care Unit
SDC	Surgical Day Care
PAC	Pre-Admission Clinic
CPAP	Continuous Positive Airway Pressure
NIV	Non-Invasive Ventilation
RN	Registered Nurse
RT	Respiratory Therapist
SPO_2	Pulse Oximeter Oxygen Saturation
O_2	Oxygen