ON ARRIVAL TO THE PACU, THE PATIENT IS ATTACHED TO MONITORING AND O₂, THE PACU NURSE RECEIVES CLINICAL HANDOVER FROM THE ANAESTHETIC TEAM & THEN Completes THE INITIAL ASSESSMENT.

**INITIAL ASSESSMENT**

- **AIRWAY**
  - CONSCIOUSNESS, AIRWAY ADJUNCTS INSITU, PATENCY, MASK FOGGING, BREATH SOUNDS, CYANOSIS

- **BREATHING**
  - SEDATION SCORE, DEPTH, RATE, RHYTHYM, SYMMETRY, NOISE, EFFORT OF RESPIRATION, SUPPORTED BY O₂ SATURATIONS

- **CIRCULATION**
  - SKIN COLOUR, TEMPERATURE, FEEL PULSE, VASOCONSTRICTION, CARDIAC HX, SUPPORTED BY ECG, BP, PULSE RATE & RHYTHYM

- **DRUGS, DRIPS, DRESSINGS, DRAINS**
  - HEAD TO TOE, BASELINE IVT, DRESSINGS, DRAINS, PAIN, PONV
FUNCTIONS

* Removes CO₂ from blood
* Transfers O₂ to blood
* Protection of lungs (gag reflex, cough)
* Passageway for air
* Warms air on entry
* Filter
* Humidifier
* Speech
AIRWAY EMERGENCIES

• HYPOVENTILATION/ APNOEA
• UPPER AIRWAY OBSTRUCTION
• LARYNGOSPASM
• LARYNGEAL OEDEMA
• BRONCHOSPASM
• ASTHMA
• ASPIRATION/ PNEUMONITIS
• ATELECTASIS
• PULMONARY EMBOLISM
HYPOVENTILATION/ APNOEA

CAUSES: Anaesthetic agents, pain, narcotics, obesity, inadequate reversal of muscle relaxants, intrapulmonary shunts, pre-existing pulmonary disease can cause respiratory depression, increased CO₂, & respiratory acidosis.

SIGNS: Inadequate ventilation resp rate <10, absence of breath, shallow infrequent breaths, hyperaemia, drowsiness, and cyanosis (late sign).

NURSING MANAGEMENT: O₂ therapy, stimulating pt to take breaths, semi- high fowlers, treating pain, jaw thrust.
UPPER AIRWAY OBSTRUCTION

CAUSES: Reduced muscle tone, sedation, opioids cause soft tissues of the oropharynx to occlude the airway

SIGNS: Snoring (partial), apnoea (complete), use of accessory muscles, tracheal tug, paradoxical chest movement

NURSING MANAGEMENT: Stimulate pt, increase O2, jaw support, insertion of nasopharyngeal or oropharyngeal airway
LARYNGOSPASM

CAUSES: Irritants (secretions, vomitus, blood, foreign body) in the pharynx, sensory stimulation (superior laryngeal nerve), pain, coughing, artificial airway placement can cause a forceful involuntary muscular contraction causing partial or complete spasm of the chords

SIGNS: Crowing sound, stridor, croupy cough, or aphonia, no air movement, use of accessory muscles, paradoxical chest movement, restlessness, desaturation

NURSING MANAGEMENT: Increase O2, suction, jaw support, PEEP, contact anaesthetic team and prepare for emergency intubation
LARYNGEAL OEDEMA

CAUSES: Irritation, traumatic intubation, surgical manipulation, excessive coughing, post ET intubation (paeds), trauma to the neck, surgical emphysema

SIGNS: Hoarse cough, inspiratory wheeze, distress, excessive use accessory muscles, dyspnoea, gradual desaturation

NURSING MANAGEMENT: High fowlers, administer warm humidified O₂, nebulized racemic epinephrine, dexamethasone by inhaler or IV, +/- nebulised adrenaline
BRONCHOSPASM

Difficulty breathing caused by sudden constriction of the muscles the walls of the bronchioles. The constriction and inflammation cause a narrowing of the airways & the increase in mucous production reduce available O2.

CAUSES: Aspiration, tracheal suctioning, ET intubation, histamine release, Hx of asthma, Hx of COPD

SIGNS: Breathlessness, coughing, hypoxia, dyspnoea, audible wheeze, increased res rate & effort, distress, desaturation

NURSING MANAGEMENT: Increase O2, remove the cause, high fowlers, contact anaesthetic team, nebulised ventolin, treat anaphylaxis if applicable, humidified O2, organise chest Xray
ASTHMA

CAUSES: Environmental stimulant/ allergen, cold air, exercise, emotional stress, viral illness (paeds) causes airways to constrict, become inflamed and lined with excessive mucous

SIGNS: Wheezing, SOB, chest tightness, coughing

NURSING MANAGEMENT: High fowlers, reassurance, high flow O₂, nebulized ventolin, nebulized atrovent, IV hydrocortisone

* Volatile anaesthetic agents are bronchodilators so asthma is rarely a problem in PACU
ASPIRATION

CAUSES: Usually occurs during emergence phase due to anaesthetic agents and narcotics depressing the gastrooesophageal and pharyngoesophageal sphincters, pregnant pts, obese pts, intra-abdominal pressure, or intestinal obstruction greatest risk. Vomitus, gastric contents, blood, foreign body entering the respiratory tract

SIGNS: Desaturation, discomfort, distress, may be signs of vomit

NURSING MANAGEMENT: Suction airway, recover in lateral position, high flow O2, contact anaesthetic team, organise chest Xray, antibiotics
ATELECTASIS

CAUSES: General anaesthetic, opioids, sedatives, abdominal & thoracic pain can decrease inspiratory pause and can lead to alveolar collapse (atelectasis).

SIGNS: Pain on affected side, dyspnoea, cyanosis, hypotension, tachycardia, fever and shock, +/- seer hacking cough.

NURSING MANAGEMENT: Semi- High fowlers, deep breathing and coughing, O2, organise chest physio, if severe - CXR, ICU, CPAP.
PULMONARY OEDEMA

Accumulation of extravascular fluid in lung tissue pushed through pulmonary capillaries and into the alveoli and enters the bronchioles and bronchi

CAUSES: Fluid overload, CHF, lung disease, POPD, post-pneumonectomy, malignancy (poor lymphatic drainage)

SIGNS: Tachypnoea, labored shallow resps, increased BP & HR, wheeze, cough, pink frothy sputum, fine crackles and quiet bases on stethoscope

NURSING MANAGEMENT: High fowlers, deep breathing, high flow O₂, ECG, call anaesthetic team, CXR, IV Morphine (reduces central venous congestion), diuretic therapy
PULMONARY EMBOLISM

CAUSES: Clot dislodges and travels through venous circulation and right heart and lodges in lungs causing obstruction, pulmonary collapse, pulmonary infarct, oedema

SIGNS: Desaturation, ECG changes, dyspnoea, pleuritic chest pain, tachycardia, hypotension, wheeze, confusion, cough, rales, leg pain & swelling

NURSING MANAGEMENT: Monitor vitals, ECG, O₂, anticoagulation therapy, thrombolytic therapy, ICU
AIRWAY MANAGEMENT SKILLS

• HEAD TILT/ JAW THRUST
• BAG MASK VENTILATION
• INSERTION OF OROPHARYNGEAL AIRWAY
• INSERTION OF NASOPHARYNGEAL AIRWAY
HEAD TILT / JAW THRUST

OCCLUDED AIRWAY: COMPLETE UPPER AIRWAY OBSTRUCTION

HEAD TILT
Using one hand on the forehead and two fingers on the jawline to tilt head into sniffing position

JAW THRUST
Bilaterally propel the jaw forward using your fingers on the angles of the jaw
BAG MASK VENTILATION

• Select a mask that extends from the bridge of the nose to the cleft of the chin.
• Place over mouth & nose.
• Using Laerdal bag connected to mask and max flow of wall O₂, gently and evenly squeeze half of bag volume into lungs while maintaining sniffing position for adults.
• Check for adequate ventilation using look, listen & feel.
• Sized by placing airway next to the patient’s face with the flange at the level of the teeth, the tip should reach the angle of the jaw
• Insert the guedels airway with the curve ‘upside-down’ before rotating 180 degrees over the tongue
• Jaw thrust may be necessary to insert the guedel fully, the flange should sit at the lips when fully inserted
• Indicated for the unconscious patient
NASOPHARYNGEAL AIRWAYS

- Select a NP airway that has a diameter slightly smaller than the diameter of the patient’s nares.
- The length should be the distance from the nares to the tragus of the ear.
- Indicated for conscious patient’s that cannot maintain patent airway because it does not stimulate the gag reflex.
REFERENCES

