SAWA UNIVERSITY

جامعة ساوة الاهلية
كلية التقنيات الصحية والطبية
قسم التخدير - اللجنة العلمية

POST ANESTHESIA RECOVERY

Sawa University — جامعـــــة ســـــــاوة الاهلية

College of health and medical techniques — كليـــــة التقنيـــات الصحيـة والطبيـة

Department of Anesthesia — قسم تقنيـــات التخديـــــــر

3rd Stage — المرحلـــــــــــة الثالثة.

تخدير عملي

Practical

محاضرة رقم 3

Lecture No.3

استاذ المادة : زهراء زهير

M.B.CH.B / F.I.C.M.S of Anes. And IC

(INTRODUCTION)

RECOVERY FROM anaesthesia

recover the patient to consciousness, orientation and resuming the preoperative vital state.

Recovery component

- Emergence from General Anesthesia
- Transport from the Operating Room
- Arrival into recovery room
- Management of postanesthetic problems
- Discharge

postanesthetic problems

- Airway Obstruction
- Hypotension
- Hypertension
- Agitation & Delirium
- Shivering & Hypothermia
- Nausea and Vomiting
- Pain control

POST-ANESTHESIA AIRWAY OBSTRUCTION

is a potentially life-threatening complication, most commonly caused by the tongue falling back due to residual anesthetic agents or muscle relaxation, leading to upper airway blockage.

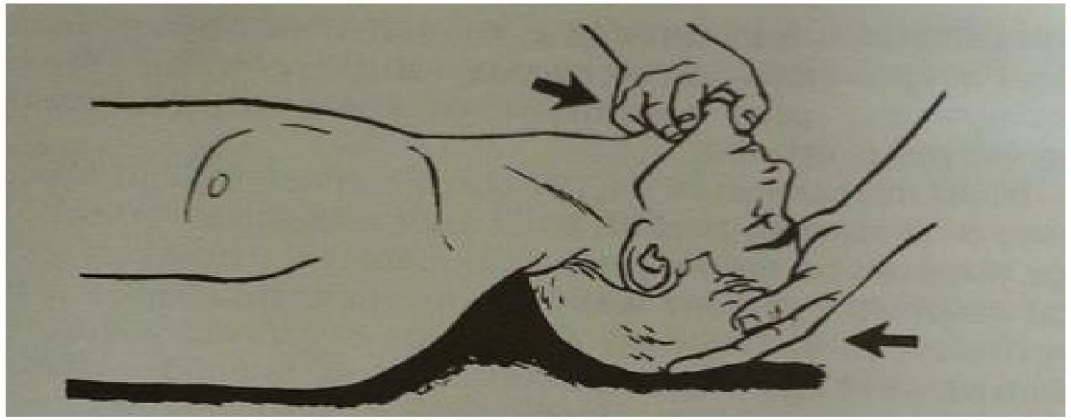
- **Pharyngeal muscle weakness:**
- Anesthetics and opioids can cause the tongue to fall backward, blocking the airway.
- **Laryngospasm:**
- Involuntary contraction of the vocal cord muscles can lead to complete airway obstruction.
- **Airway Edema:**
- Swelling of the airway tissues, which can occur after head and neck surgery.
- **Hematoma:**
- Bleeding into the neck area can cause pressure on the airway.
- **Pooled Secretions/Foreign Bodies**

Signs and Symptoms

- **Breathing difficulties:** Gasping for air, difficulty breathing.
- **Unusual noises:** Stridor (inspiratory crowing), snoring, or other sounds indicate obstruction.
- **Restlessness and agitation:** A sign of inadequate oxygenation.
- **Cyanosis:** Bluish discoloration of the skin due to low oxygen levels

IMMEDIATE TREATMENT STEPS

1. **Airway Maneuvers:**
2. The first step is to manually open the airway using the head-tilt, chin-lift, and jaw thrust techniques.
3. **Provide Oxygen:**
4. Administer supplemental oxygen to improve oxygenation.
5. **Consider temporary airway devices:**
6. If the obstruction persists, consider inserting an oral airway or nasal airway if the patient is sufficiently conscious and cooperative.
7. **Assess for deeper issues:**
8. Evaluate for underlying causes such as significant edema or a foreign body



POST-ANESTHESIA LARYNGOSPASM

sudden, involuntary closure of the vocal cords leading to airway obstruction during the recovery period after general anesthesia. It is a potentially life-threatening emergency that occurs when airway reflexes are abnormally active, often in response to noxious stimuli such as laryngeal irritation from secretions or surgical manipulation.

Causes

- **Light Anesthesia:**
- **Noxious Stimuli:**
- Irritation from saliva, secretions, or surgical manipulation can trigger the spasm.
- **Anesthetic Agents:**
- Irritant anesthetics like desflurane can increase the risk.
- **Risk Factors:**
- Children, smokers, patients with reactive airways (like asthma), and individuals undergoing laryngeal or pharyngeal surgery are at higher risk.
- **Extubation:**
- The process of removing the breathing tube can irritate the vocal cords and trigger the spasm.

Signs and Symptoms

- **Airway Obstruction:** A sudden and forceful contraction of the vocal cords that leads to partial or complete airway closure.
- **Stridor** A high-pitched, noisy sound produced during breathing, indicating a partial airway obstruction.
- **Hypoxia:** A dangerous drop in blood oxygen levels.

Treatment

1. **Remove the Stimulus:**
2. Identify and eliminate any potential irritants, such as secretions, by suctioning.
3. **Support Airway and Ventilation:**
4. Apply a firm jaw thrust to open the airway.
5. Administer positive pressure ventilation with 100% oxygen using a face mask.
6. Consider continuous positive airway pressure (CPAP).
7. **Deepen Anesthesia:**
8. Administer medications like propofol or a volatile anesthetic to relax the vocal cords.
9. **Administer Muscle Relaxants:**
10. In severe cases where mask ventilation is not possible and hypoxia is present, a muscle relaxant such as succinylcholine may be necessary.

HYPOTENSION

Common Causes

- **General Anesthesia Effects**:
- Anesthetic agents can directly cause hemodynamic instability.
- **Hypovolemia**:
- This includes blood loss during surgery or insufficient fluid intake and resuscitation.
- **venodilation**
- Some anesthetics, like spinal or epidural blocks, can cause blood vessels to widen, reducing blood pressure.
- **Sepsis**:
- A severe infection can lead to septic shock and critically low blood pressure.
- **Adverse Drug Reactions**:
- Patients on a certain blood pressure medications (ARBs) may be at higher risk for refractory hypotension.
- **Underlying Medical Conditions**:
- Pre-existing heart conditions, kidney problems, or critical illness can contribute.

MANAGEMENT

1. **ABCDE Assessment**:
2. A systematic evaluation of Airway, Breathing, Circulation, Disability, and Exposure is crucial.
3. **Stabilize the Patient**:
4. Secure the airway, provide supplemental oxygen, and establish IV access.
5. **IV Fluids and Vasopressors**:
6. Initiate fluid resuscitation and consider vasopressors (medications that tighten blood vessels) to increase blood pressure.

HYPERTENSION

POST OP HYPERTENSION IS COMMON IN FIRST 30 MINUTE AFTER SURGERY

Causes

- **Physiological Response:**
- Surgery itself triggers the body's stress response, increasing levels of hormones like catecholamines, which can raise blood pressure.
- **Anesthesia:**
- Recovery from general anesthesia and even the placement of a breathing tube can stimulate a rapid heart rate and increase blood pressure.
- **Pain and Discomfort:**
- Uncontrolled pain after surgery is a significant factor in elevated blood pressure.
- **Pre-existing Conditions:**
- Patients with a history of hypertension or those who stop taking their blood pressure medication are at higher risk.
- Treatment
- Mild hypertension _no treatment require
- Marked hypertension _B blocker(labetalol *metoprolol)

AGITATION

Causes and Risk Factors

- **Anesthetic agents:** Some anesthetics are linked to a higher incidence
- **Pain:** Uncontrolled postoperative pain is a significant factor.
- **Anxiety:** Pre-existing or surgery-related anxiety can increase risk.
- **Discomfort from medical devices:** Tubes, catheters, and intravenous lines can cause agitation.
- **Type of surgery:** ENT (ear, nose, and throat) procedures have been associated with higher rates.
- **Hypoxia:** Low oxygen levels can lead to agitation.
- **Age:** Pediatric patients are more frequently affected than adults.

SHIVERING

common complication caused primarily by the body's core temperature dropping due to cold operating rooms, anesthetic gases affecting temperature control, and the loss of body heat during surgery

Management

- **Warming the Patient:**
- The first line of treatment is to actively warm the patient, often with heated blankets
- **Medication:**
- Meperidine 30 mg intravenously

NAUSEA AND VOMITING

COMMON AFTER GA
-OPIOID
-LAPRASCOPIC SURGERY
-STRABISMUS SURGERY
-PROPOFOL DECREASE INCIDENCE

RX

METOCLOPRAMIDE0
ONDANSETRON (ZOFRAN)

Discharge Criteria

- All patients must be evaluated by an anesthesiologist prior to discharge from the PACU unless strict discharge criteria are adopted
- discharge criteria are based on Aldrete postanesthetic recovery score.
- Ideally, the patient should be discharged when the total score is 10 but a minimum of 9 is required.

Point Value	Criteria
	Oxygenation
2	SpO_2 > 92% on room air
1	SpO_2 > 90% on oxygen
0	SpO_2 < 90% on oxygen

	Respiration
2	Breathes deeply and coughs freely
1	Dyspneic, shallow or limited breathing
0	Apnea

	Circulation
2	Blood pressure ± 20 mm Hg of normal
1	Blood pressure ± 20–50 mm Hg of normal
0	Blood pressure more than ± 50 mm Hg of normal

	Consciousness
2	Fully awake
1	Arousable on calling
0	Not responsive

	Activity
2	Moves all extremities
1	Moves two extremities
0	No movement

Any questions?