Intraoperative nursing management:

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Intraoperative nursing management:

Definition:

—from the time the patient is received in the operating room until admitted to the recovery room or post-anesthesia care unit (PACU)

Surgical team :

1- the circulating nurse :

- must be a registered nurse (RN), manage OR and protect patients' safety.
- Verify consent form, room condition (temp, cleaning, sterility, humidity, lightning, the function of equipment, document activities

2- the Scrub nurse:

- RN, performing surgical hand scrub; setting up sterile tables, preparing sutures, bandages, and special equipment; drains, sponges).
- Counting materials and sample labeled with circulating nurse.

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3- the surgeon :

- perform surgical procedures and head of the team .

4- registered nurse first Assistant (RNFA)

- works under supervision of surgeon , responsible for handling tissue, providing exposure at operative field, suturing, homeostasis.
- must be knowledgeable in anatomy and physiology, tissue handling, suturing and aseptic surgical technique .

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5- the anesthesiologist and anesthetist

- anesthesiologist: a physician trained in anesthesiology's art and science.
- anesthetist: a qualified health care professional who administers anesthesia (most of them are nurses).

Responsibility of the anesthesia team:

- assess patients' health status
- select anesthesia type and administer it
- intubations (ETT. Laryngeal mask airway (LAM)
- monitor pts condition (vital signs, ABGs, Oxygenation, homodynamic monitoring. Mechanical ventilator monitoring and adjusting ECG.)

Surgical environment :

- surgical suite must be behind double doors. And access is limited to authorized persons only.
- adhering to the principle of surgical asepsis, staff restrictions, sterility of rooms and equipment, scrubbing
- Must sit in a center of all supporting services (pathology, ICU, lab,).
- Has specific cleaning device for dust, fluid, ……. Etc)
- To decrease microbes. surgical area is divide into 3 area :

    a- semi-unrestricted zone: street clothes are allowed

    b- semi-restricted zone: scrub cloths and caps

    c- restricted zone: scrub cloths, shoe covers, caps, and mask are worn.

Principles of surgical asepsis :

- prevents the contamination of surgical wounds And prevents post-operative infection
- all surgical supplies must be sterile .
- surgical team prepares themself by scrubbing their hands and arms with aseptic solutions)
- OR must be a closed and sterile area.
- Environmental control including all equipment must be prepared before surgery.
- Changed room air Q 15 minutes to decrease air-born bacteria.

Types of sedation and anesthesia

The goals of anesthesia are to provide analgesia, sedation, and muscle relaxation, as well as to control the autonomic nervous system.

Sedation and anesthesia levels :

1- Minimal sedation :

- it's a drug-induced state during which the pts can respond normally to verbal commands.
- cognitive and coordination may be impaired but respiratory and cardiovascular are not affected

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2- Moderate sedation :

- its depressed level of consciousness that does not impair the patient's ability to physical stimulation.
- maybe combined with other regional, local or epidural anesthesia.

3- Deep sedation:

- a patient cannot be easily aroused but can respond purposefully after repeated stimulation

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Anesthesia is a state of narcosis (CNS depression) , and may require ventilation support .

- General anesthesia consists of four stages :

1- stage 1 (beginning anesthesia) → Induction

- pts feels warmth, dizziness, still conscious , move extremity easily .

2- stage 2 (excitement)

- struggling, shouting, laughing, crying, pupils dilated, pulse rapid , RR irregular.

- pts need to restrain during this stage .

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3- stage 3(surgical anesthesia)

- reached by continued administration of anesthesia vapor or gas.
- pts unconscious, pupils are small, RR regular, Skin flushed.

4- stage 4 (medullary depression)

- reached when too much anesthesia is induced .
- RR shallow, pulse weak, pupils dilated, cyanosis develops.
- during this stage anesthesia should D/C , and initial support for respiration and homodynamic

Methods of anesthesia administration :

1- inhalation :

2- intravenous :

- advantage: onset of anesthesia is pleasant

  there is no buzzing , dizziness,

3- regional anesthesia :

- local anesthesia in which an anesthetic agent is injected around nerves
- The effect is depend on the type of nerve involved.

PERIPHERAL NERVE BLOCKS

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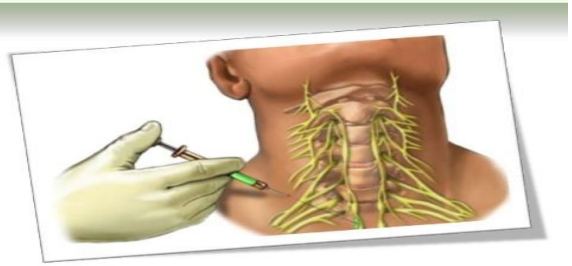

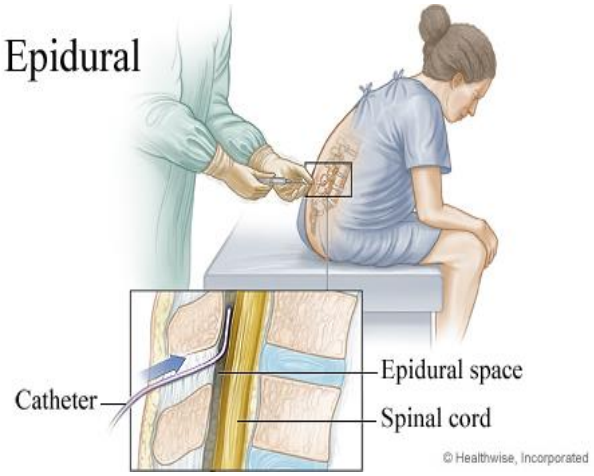

4- Spinal Anesthesia

1. injected into lumbar intrathecal space.
2. blocks conduction in spinal nerve roots and dorsal ganglia; paralysis and analgesia occur below level of injection.

5- Epidural Anesthesia

1. Achieved by injecting local anesthetic into extradural space via a lumbar puncture (around spinal cord)
2. Results similar to spinal analgesia

6- Peripheral Nerve Blocks

1. Achieved by injecting local anesthetic at a specific site to render a defined area of anesthesia

Potential Intraoperative complication

1. Hypoventilation (hypoxemia, hypercarbia)—
2. Oral trauma (broken teeth, oropharyngeal, or laryngeal trauma)—due to difficult endotracheal intubation
3. Hypotension— due to preoperative hypovolemia or reactions to anesthetic agents
4. Cardiac dysrhythmia— due to preexisting cardiovascular compromise, hypoxiemia, electrolyte imbalance, or reactions to anesthetic agents
5. Hypothermia— due to exposure to a cool OR environment and loss of normal thermoregulation capability from anesthetic agents
6. Peripheral nerve damage— due to improper positioning of the patient (eg, full weight on an arm) or restraints

7. Malignant hyperthermia

a. a rare reaction to anesthetic inhalants (halothane) and muscle relaxants (eg, succinylcholine).

b. Such drugs as theophylline, aminophylline, Adrenalin, and digoxin may also induce or intensify this reaction.

c. deadly complications occur in younger individuals with an inherited muscle disorder .

d. Malignant hyperthermia is due to excessive accumulations of Ca with resulting increased muscle contraction.

e. Clinical manifestations—tachycardia, pseudo tetany, muscle rigidity, high fever, cyanosis, heart failure, and CNS damage.

f. Treatment —dantrolene sodium (Dantrium), oxygen, dextrose 50% (with extra insulin to enhance its utilization), diuretics, antiarrhythmics, sodium bicarbonate (for severe acidosis), and hypothermic measures (eg, cooling blanket, iced IV saline solutions, or iced saline lavages of stomach, bladder, or rectum).

Nursing process

1- Assessment :

- data obtaining. vital signs, lab tests, and LOC (GCS).

2- diagnosis :

1- Anxiety

2- Risk for complications

3- Risk for injury

4- disturbed sensory perception