

GENERAL ANESTHESIA V

ANESTHESIA DEVICES

Modern anesthesia devices, which appear to be complicated, consist of the following elements:

- high pressure oxygen and anesthetic gas cylinders /generators
- pressure reducing valves,
- flowmeters,
- vaporizers,
- CO2 absorption system,
- inspiration and expiration valve,
- reservoir balloon,
- breathing hoses
- automatic breathing ventilator (optional)

Intubation and general anesthesia:

1- Anesthesiologist does general control of the device, reviews the functioning of each part. In particular, checks whether the content of the soda-lime canister is new and whether the amount of anesthetic fluid is sufficient.

2- An endotracheal tube is chosen according to the diameter of the patient's trachea.

3- Anesthetic induction is provided by administering volatile anesthetic with a short-acting iv anesthetic agent or mask.

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4- Patient is laid on sternum, mouth is opened when the head is in the extension position and tongue is pulled out. Endotracheal tube is placed by directly seeing or using laryngoscope and the cuff is inflated.

5- The connector on the outer end of the endotracheal tube is connected to the patient circuit (breathing tube) of the anesthesia device.

6- Sufficient O₂ is introduced into the system (this amount must be sufficient to fill 2/3 of the balloon where the expiration air is collected).

7- The O₂ flow is adjusted to meet the physiological needs of the patient (in ml per minute). If mechanical ventilation is to be performed, tidal volume is adjusted to 15 ml / kg in dogs and 7 ml / kg BW in cats.

8- Anesthesia is started by turning vaporizer on.

9- When an adequate depth of surgical anesthesia is reached, anesthetic level is reduced. Patient is monitored and anesthesia is deepened as necessary.

10- If thoracic cavity is incised; anesthesiologist squeezes the reservoir balloon to be synchronized by respiration movements 8-12 times per minute.

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11- If anesthesia is very deep, the expiratory valve is opened and the system is cleaned, expiratory air balloon (reservoir balloon) swells with pure O₂. This condition continues until the patient becomes normal. If respiration has stopped; anesthesiologist should give artificial respiration by squeezing the balloon at a certain rhythm or running an automatic ventilator.

12- When anesthesia is finished, expired air is removed and O₂ is given to the system.

13- When patient shows signs of recovery, part of the endotracheal tube attached to the anesthesia device is removed.

RECOMMENDATIONS FOR USE OF ANESTHESIA DEVICE

1- Before induction of anesthesia, fill reservoir balloon with O₂, close breathing circuit outlet with finger tip and tighten balloon to check for leaks.

2- Avoid contact of tubes, valves, gauges and connections with oil grease or a flammable substances.

3- Do not lubricate valves, gauges or regulators.

4- Open valves of the tubes slowly.

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- 5- Always use O₂ supplied from the tube/regulator by means of a pressure regulator (O₂ manometer).
- 6- Avoid the use of flammable and explosive anesthetics.
- 7- Periodically calibrate anesthesia devices.