



Tikrit University
College of Veterinary Medicine

Lecture Title

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Subject name: **Introduction to anesthesia**

Subject year: **surgery \ 4th stage**

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Lecturers link

Term Associated with Anesthesia:-

1-Anesthesiology:- the science that studies anesthesia and anesthetics.

2-Anesthesia:- Loss of sensation, including to pain, often induced before surgery. Includes general, local, spinal and epidural anesthesia.

3-General anesthesia:- a state of total unconsciousness resulting from anesthetic drugs (as for a major surgical operation)

4-Balanced anesthesia:- Anesthesia produced by safe doses of two or more agents or methods of anesthesia, each of which contributes to the total desired effect.

5-Analgesia:- Insensibility to pain with no loss of consciousness.

6-Narcosis:-A reversible condition characterized by stupor or insensibility caused by depression of central nervous system activity.

General anesthetics produce narcosis, but not all narcotics produce general anesthesia. A narcotized patient may be nearly unconscious, but will usually be temporarily aroused by a significant stimulus.

7-Hypnosis:-A state of artificially induced (drug induced) physiologic unconsciousness (sleep) from which the patient can be easily aroused by a wide variety of stimuli.

8-Sedation:- Sedation involving the administration of anesthesia without loss of consciousness, used to minimize pain and anxiety in a patient undergoing a minor surgical or diagnostic procedure.

9-Tranquilization: - a state of behavioral change in which the patient is relaxed and unconcerned by his surrounding.

10-Local anesthesia:- It is a loss of sensation in a defined area of the body.

11-Regional analgesia:- loss of sensation in a larger but limited body area.

12-Pain:- An unpleasant feeling occurring as a result of injury or disease, usually localized in some part of the body.

Purpose of veterinary anesthesiology or indication for anesthesia:-

- 1-To relieve pain, to relax muscles, & to facilitate restraint during surgical, obstetrical, & other medical procedures.
- 2-Special diagnostic procedures (diagnosis of Lameness by nerve block).
- 3-The clinical management of patient unconscious from whatever cause (cast application).
- 4-The management of procedures in cardiac & respiratory resuscitation.
- 5-The application of specific methods of inhalation therapy.
- 6-The clinical management of fluid, electrolyte, & metabolic balance.
- 7-The administration of drugs for the restraint of domestic animals.
- 8-To capture of wild animal species.
- 9-Euthanasia.

Factors affecting General anesthesia:-

1-Age of patient:- very young and old animals are more sensitive to anesthesia in comparison to an adult animal.

2-Size & body weight of patient:-The small size animals with higher metabolic rate need large doses of anesthesia per kg body weight.

3-Sex: - Males need more anesthesia than females. However pregnant females are more susceptible due to high metabolic rate.

4-Species of animals: - There are species spasticity and variation.

5-Physical condition of the patient:-

*Fatty animal required less dosage of anesthetics because the fat is inactive tissue.

*Toxic and emaciated animal need less dosage.

*Wild, fearful and excited animal need more dosage than normal one due to increase of metabolism.

*The animal suffering from dehydration or sever hemorrhage are need low dosage.

*General anesthesia should be given with care in animals which suffer from liver, kidney and heart diseases.

6-Administration of pre-anesthetic medication.

7-Type of surgical or diagnostic procedure applied.

The component of anesthesia :-

There are 3 components of anesthesia :-

1-Analgesia (**Pain Relief**).

2-Amnesia (**Loss of memory**).

3-Immobilization.

The drugs used to achieve anesthesia usually have varying effects in each of these areas.

Note:-

*Some drugs may be used individually to achieve all component of anesthesia.

*Other have only analgesic or sedative properties & may be used individually for these purposes or in combination with other drugs to achieve full anesthesia .

*It is important to realize that anesthesia is not a simple thing .

*It has profound effects on an animal`s physiology because of the generalized central nervous system effects as well as specific effects on all other body system. Thus, while anesthesia is necessary to prevent pain or distress in research animals. It must not be ventured into lightly.

*It is important to learn about the drugs you will be using & about the physiology of the animal you will be monitoring.

****Food, Water & Electrolytes patient preparation:-***

1-Food(**Withheld for (12hr) in most non-ruminant patient, In ruminant for (24-48hr.)**).

2-Water (**In non-ruminants free access until pre-anesthetic drugs given, In ruminants from (6-12hr)**).

3-Electrolyte balance of an animal is a most important factors in determining the uncomplicated recovery (**Fluids infusion by I.V. with isotonic saline (0.09% or 5% Dextrose)**).

TYPES OF ANAESTHESIA

A-Premedication:-

- 1-In combination with local anesthesia.
- 2-As an adjunct to general anesthesia.

B-Local analgesia:-

- 1-By surface application.
- 2-By intra-and sub dermal infiltration.

C-Regional analgesia:-

- 1-Pre neural injection (nerve block).
- 2-Spinal block:-
 - I-Epidural injection
 - II-Intrathecal injection

D-General Anesthesia:-

- 1-By inhalation.
- 2-By injection of non- volatile or non-gaseous anesthetics
Intravenous (most common). Sometimes may be given by intra peritoneal, intramuscular or other routes.
- 3-By combination of injectable and inhalation with or without pre-anesthetic.