STUDY OF THE MORPHOLOGICAL BASIS IMPLICATED IN INHALATORY ANAESTHESIA AT DOGS: A PERSONAL RESEARCH

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INTRODUCTION

The study is about narcosis, frequently used today in veterinary medicine, in order to make some surgical procedures, with therapeutical, economical or estethical purpose. The substance that we have studied is an anaesthetic with selective or general effects over different structures of the central nervous system, which produces similar results with others anaesthetic in the same class.

Materials and methods: Have been observed anesthesical effects of Sevofluranului administrated through mask induction and mentaining through endotraheal bore, at 5 dogs from different tales and rases) in a private clinique At every case have been made recordings of hematological and biochemical values and also the evaluations of vital constants: cardiac frecqency, electrocardiograma, respiratory frequency, temperature.

To apreciate the presence or absence of hurt sensibility it's reffered observation of member retraction reflex, interdigital reflexul and nociceptive sensibility reasearch of animal, through sting.

Results: after the inhalatory administration of Sevoflurane, we've noticed a slight increase of enzymatic activity for aspartataminotranspherase (GOT/AST), alaninaminotranspherase (GPT/ALT), gammaglutamiltranspherase (GGT), total amylase and also an increase of glycemia, comparing with the initial moment. There was no significant difference between before and after anaesthesia. The stages of anaesthesia were defined by a short time (5-10 minutes) of induction, with no significant respiratory complications (apnoea, larynx spasm, or cough) and an average time for getting out of anaesthesia of about 10-20 minutes.

Conclusions: using inhaled Sevoflurane as an anaesthetic agent, we didn't noticed any side effects, such as vomiting, convulsions or restlessness and the temperature, the heart rate, the respiratory rate and the oxygenation of

the peripheral tissues were in normal ranges. Aneshesia reprents an medical procedure to diminuate or suprimate, completed or partial of body sensibility, at pains realised through fizical and chemical agents. Anesthesia is using in surgical procedures to permit pacients to support surgical intervention with minimal hurting effects. Anesthesia is manifesting through: absence or dispppearing one of many kind of sensibility and reversible abolish of she, caused through utilisation of anesthesic agents. General anesthesia consists in reversal loss of conscience. General anesthesia is realised in three kind of actions: narcosis (represented by conscience loss or deep sleep), is owed administration of one anesthesic agent, or inhalation (Sevoflurane, Izoflurane, Halotane) or intervenous side; analgesia (means pain disappearing) which is obtained with analgezics; curing (inhibiting substances), who permits muscle relaxing for a good surgical intervetion need. Morphological base implicated in inhalatory anesthesia is represented by respiratory system with intra and extrapulmonary sides, integrity of those contributing in very much measure for good evolvingof all narcosis steps but also of wake up.

MATERIALS AND METHODS

Have been observed anesthesical effects of Sevofluranului administrated through mask induction and mentaining through endotraheal bore, at 5 dogs from different tales and rases (which age between 3 and 6 years old, 3 females and 2 males, 2 rase european rases, 1 rotweiller, 1 caniche, 1 cocker) in a private clinique. Surgical interventions was not very hard to be realised and don't have been more than 60 minutes, and have received the same pre medication.At every case have been made recordings of hematological and biochemical values and also the evaluations of vital constants: cardiac frecqency, electrocardiograma, respiratory frequency, temperature, oxygen saturation of periferical tissues, induction time, wakeing up time, metabolisation and secundary products removment. Have been monitorised the effects above cardiovascular, respiratory, neuromuscular and renal systems and also on liver.Anesthesic circuit used is cclosed kind types which includes a tubes system which assure oxygen need and removing of carbon dyoxide through his absorbtion by sodata calce,in this mode can be realised artificial ventilation. In closed circuit it's producing total reinhalation of gase mix assuring adecquate oxygen need.

The method used present the advantaje of a small consum of volatile anesthesic, for making a deep narcosis with dirijable time and posibillity of controlling pulmonar ventilation.
I've been made endotraheal intubation in the follow mode:
-opening mouth cavity
-viewing through larinx opening and tongue exteriosation, laringoscope apllying at her base;
- head fixing ina an ortopneic position to reduce much the orotraheal angle, and then the well have been introduced on the trachea till the third anterior level. This well also can be viewed the the help of RX imagistics.
-air is introducing in well ballon with help of syring and then the termination is closing - exterior head of tube
-for well verify if it's correctly intratracheal positioned i've been executed pulmonary hearing with stetoscope after insuflation with ballon. Vezicular murmur and the pulmon distension once with air insuflation have confirmed the correct localisation of well.
-the swell is ataching at anesthesic circuit and continue the narcosis
- the well is fixing on animal maxila for not permitting any moves intratracheal and don't produces injuries.

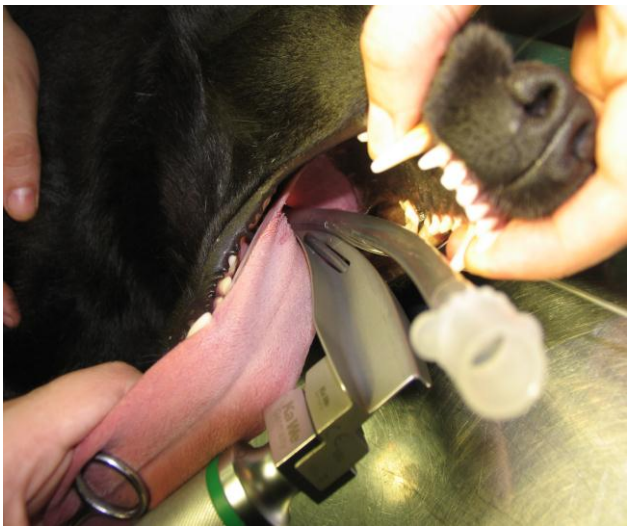

Fig.1 Installing endotracheal well

I've used facial masl only for induction, she can be used also for mentaining but it can be risk as a gas part to enter in stomach and the gastric regurgitate to be aspired, causing dangerous pulmonar complications. Also it have been

determined at anesthesia mentaining only from mask appears many anestehesic quantities lost.

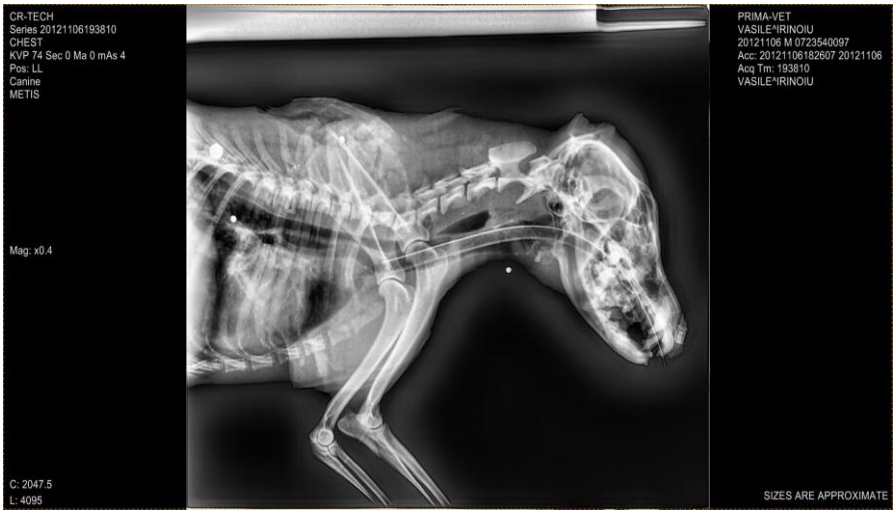

Fig.2 RX view of endotracheal well.

Fig.3 Pacient monitoring

RESULTS AND DISCUSSIONS

After inhalatory administration of Sevoflurane have observed: easly grow of enzimatic activities for aspartat aminotranferase (GOT/AST), alaninaminotranferase (GPT/ALT), gama glutamil transferase (GGT), of total

amilase, glicemia, creatininemia and ureea near by initial moment, seeing that aren't major differences between initial moment and after anesthesia. Steps of anesthesia have described through anesthesia induction for a short time (5-10 minutes), without any notable respiratory complications (apnea, larynx spasm and cough) ending of anesthesia have produced in 10-20 minutes. Minimal alveolar concentration (MAC) of Sevoflurane is aproximative 2,5% during waist and the age of animal, she beeing the most deducted at old pacients at a high concentration of anesthesia at a long time, producing respiratory depresia quick then an young body. Deep anesthesia permits endotraheal intubation without miorelaxing using. The odor, iniritating has permitted induction through mask with a small frecquency a respiratory tricky (apnea, larynx spasm, stop breathing and cough). The odor dont't affects negatively the induction. Rapidly growing of inspirated alveolar concentration with Sevoflurane is translating into an quickly anesthesia induction. Salivation frecqency, apnea, larynx spasm, stop breathing, are more reduced than Halotan and aren't controlable. Anesthesia induction can be realised throurgh growing inspirated concentration of Sevoflurane in progresive steps.Using mask induction of general anesthesia with Sevoflurane, induction time was shorted without growing of tricky frecquency (cardio-respiratory), using by a high concentration, circuit tehnique prepared (amorsed) comparing with conventional method of progressive induction.

Through practical tests have been demonstrated that the substance easily enter in the system, when she is administrated through inhalation, and after the ending of administration in blood the concentration of anestheic quickly decreased.

Also I've demostrated the nefrotoxicity and hepatotoxocity of Sevoflurane. Concording phisico and chemical dates in organism biotransforming of Sevoflutane is limitated (5%) producing hexafluoroizopropanol (HFIP), with realising by anorganic fluorure (F) and carbon dioxide. Once formed HFIP is rapidly conjugate with glucuronic acid, and after that is rapidly removed as an urinary methabolit. At dogs, metabolised quantity represents less than 2,5 % from anesthesic absorbtion and methabolits excretion is finished in 48 hors.

As point of view of nefrotoxicity and hepatotoxocity biochemical tests pre and postsurgical have demonstrated non alterating of renal and hepatic functions at dogs.

As another inhalatories anesthesies, Sevoflurane in high blood concentrations cause respiratory depresia and growing of arterial partial presure of CO_2.

CONCLUSIONS

No adversal reactions have been seeing at administration with Sevoflurane (vomit, convulsions or agitation) and the temperature, cardiac and respiratory frecvqency, peripherical tissues in oxygen saturation was in normal parameters.

Inhalatory anesthesia don't modified major bood constants post-surgical.

Removing inhalating anesthesic on respiratory side (over 95% in case of Sevoflurane) permits anesthesia control and quickly restore in case of an complication.
The odor permit induction trhourgh mask and intubation without using miorelaxing.
I've noticed that negative efects above organs and systems are minimal.

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