

ANESTHESIA AND YOUR SALUKI
COMPLIMENTS OF
DR. CASEY GONDA DVM, MS, Diplomate ACVIM
AND
SALUKI CLUB OF AMERICA

While your veterinarian is generally the best source of health information about individual dogs, the Saluki Club of America would like to offer some supplemental material on the general health of, and some specific issues that affect the saluki breed. Like most dogs, salukis can live a long and healthy life if they are free from serious genetic disorders and if given proper care, food, exercise and routine veterinary attention.

Acceptance and use of the information contained in these handouts, constitutes an acknowledgment that the user hereby releases and indemnifies the Saluki Club of America, and its officers, directors, members, and agents from any and all liability and damages sustained by the user as a result of any information obtained from this committee.

ANESTHESIA AND YOUR SALUKI

Casey Gonda, DVM, MS, DiplomateACVIM
Specialty Internal Medicine
Keswick, Virginia

To enable your veterinarian to correctly and safely perform necessary medical or surgical procedures on your saluki, some form of anesthesia may be required. Many saluki owners have legitimate concerns regarding the use of anesthesia in their dogs. Unfortunately, many of these have been fueled by stories of untoward drug reactions or reports of deaths attributed to anesthesia, as told to them by other sighthound owners. Although unacceptable responses and deaths secondary to anesthesia occasionally occur in sighthounds, most can be attributed to the use of a particular group of older generation drugs and anesthetic agents.

Many dog breeds, including the saluki and other members of the sighthound group may respond inappropriately to particular drugs or combinations of drugs in a way that is not universal among the dog population in general. In healthy canines these responses are considered to be idiosyncratic and may occur sporadically among dogs of the same breed. However, there are physical and physiologic differences in the sighthounds that render them more sensitive to certain drugs and standard canine anesthetic protocols.

There are two primary features that affect the behavior of certain drugs in salukis; the first relates to the ratio of body fat to lean muscle mass and the second, to differences in hepatic (liver) metabolism.

In general, sighthounds have a very low percentage of body fat compared to other dogs, so they respond differently to certain drugs, in particular the fat or lipid soluble drugs, such as *thiopental*, *pentobarbital*, and *halothane*. Because lipid soluble drugs are preferentially absorbed by fat, their distribution and elimination is based on this behavior. Once injected intravenously or inhaled, they move

immediately from the blood to the brain and other tissues including muscle and fat. As the fat absorbs these drugs, the concentration of drug in the brain and bloodstream is decreased and eventually eliminated. Because salukis have little or no fat stores, the drug concentrations can rise rapidly and remain high in blood and brain tissue resulting in profound sedation and prolonged recovery.

As a rule, the majority of injected drugs are eliminated from the body by the liver, and in some cases, the kidneys. Though the mechanisms are not completely understood, there are differences in the liver at the cellular level as to how these drugs and by-products are metabolized among sighthounds.

Hopefully, a fundamental understanding of the types of anesthetics used today and the basis for their selection should relieve any fears you may have regarding anesthesia for your saluki.

There are several types of anesthetics used in dogs that vary in route of administration and type or length of response.

The main categories include:

1. Local or regional anesthetics
 2. Tranquilizers
 3. Sedatives and inhalant Anesthetics
-
1. Local anesthetics such as lidocaine are injected or infused into the skin at selected locations to numb the area and block the sensory pain response. These drugs are very safe and overdosing in a dog of the saluki's size is unlikely.
 2. Tranquilizers, such as acepromazine render the patient relaxed or Attranquil, but conscious. These drugs are often included in the pre-anesthetic plan, particularly in nervous, fearful or excited dogs prior to induction of general anesthesia. Quiet, relaxed patients respond better during the initial phases of anesthesia and tend to have a smoother transition during recovery. An additional benefit is that pre-medication with these drugs

reduces the amount of additional drugs required during anesthetic induction and surgery which hastens the return to consciousness and ambulation.

3. Sedatives vary in their mode of action, response and elimination by the patient, so the sedative selection is often made based on the amount of surgical pain anticipated and the dog's temperament and physical condition (eg., the presence of liver or kidney disease). These drugs are usually administered intravenously, just prior to general anesthesia. Depending on the dose and the dog, responses can vary from extremely relaxed to completely unconscious. In addition to rendering the patient unconscious, some sedatives have the added benefit of producing analgesia during, and for a limited time after painful procedures.

Most veterinarians use a combination of these drugs, depending on the type or complexity of the procedure that is to be performed. For minor procedures, such as skin biopsies, superficial tumor removal, ultrasound guided aspirates or simple wound repairs, a mild tranquilizer or sedative in combination with the injection of a local anesthetic may be all that is required. This is of course dependant on the dog's temperament and the location of the area being treated. Quiet compliant dogs are amenable to such a protocol, however, fractious or intractable pets must often be rendered unconscious so that the procedure can be safely and quickly completed.

When complete unconsciousness is required, as is the case for dental cleaning/extraction, orthopedic, thoracic or abdominal procedures, then your saluki should receive some form of general anesthesia. Although intravenous drugs can be used for general anesthesia, this protocol is usually reserved for short (< 20 min) procedures. In addition, certain drugs, such as *propofol*, can be somewhat expensive to use in large breed dogs if it is being used as a continuous infusion. Therefore, most veterinary hospitals use inhaled gas anesthetics for the majority of their surgical cases.

Inhaled anesthetic is delivered to the dog's lungs via an endotracheal tube that is inserted through the dog's mouth deep into the trachea or wind pipe. It is impossible to place this

tube in a conscious dog, so a very short acting injectable sedative must be administered to accomplish this task. The endotracheal tube not only delivers the inhalant anesthetic, but oxygen as well. In selected cases, even if anesthesia is being administered intravenously by a constant rate drug infusion, an endotracheal tube may be placed simply to deliver oxygen, especially in older, very ill or debilitated dogs.

Fortunately, we have a number of drug choices available today that have proven to be safe and predictable in salukis. Two of the most deleterious drugs used in sighthounds, *thiopental* and *pentobarbital* have been replaced by safe, short acting, injectable drugs. *Propofol* or a combination of *diazepam* and *ketamine* are excellent choices for sedation and anesthetic induction in salukis. And unlike *halothane*, an older gas anesthetic that is highly lipid soluble and metabolized by the liver, the newest generation of inhalant anesthetics, *isoflurane* and *sevoflurane* are rapidly eliminated or blown off by the lungs. In addition, the effects of some injectable drugs can be nullified by administering a reversing agent once the procedure is completed. For short, noninvasive procedures (up to 30 min), I commonly use *metdetomidine* (*Domitor*) and its reversal agent, *atipamezole* (*Antisedan*) on my salukis. Both can be given intramuscularly, reducing anxiety during administration. In my experience, metdetomidine appears to have a longer period of effect, even in healthy salukis and should never be used in those suffering from respiratory or cardiovascular disease.

To ensure that your saluki's recovery from anesthesia is uneventful, there are several things that your veterinarian may recommend and I would encourage you to consider:

1) Bloodwork

In general, any healthy dog over the age of 5 or 6 years old or any dog suffering from systemic illness or chronic disease that is to undergo a procedure necessitating general anesthesia, should have blood drawn several days prior to the surgery. A complete blood

count (CBC) and a chemistry profile may demonstrate sub clinical disease or biochemical abnormalities that may be compounded during general anesthesia.

It should also be noted that salukis, like greyhounds, may have certain measured indices that fall outside of the normal range of values. Thyroid hormone concentration, packed cell volume (PCV), white blood cell count (WBC), and selected chemistry values may be flagged as abnormal when they are, in fact, acceptable for a healthy saluki.¹

2) IV fluids

I feel that any saluki undergoing general anesthesia should receive intravenous fluids until in recovery. Fluid delivery requires the placement of an intravenous catheter and closer monitoring during surgery. Not only is there a vein and injection port immediately available in case of an emergency during surgery, but the fluids are important in maintaining critical organ function and tissue perfusion if vascular pressures change. This is an added expense for the owner, but well worth the additional cost.

3) Pain management

Question your veterinarian concerning pain management. Anesthesia can be reduced during painful surgical procedures with appropriate pain management. The addition of non-steroidal anti-inflammatory drugs (NSAIDS) or other analgesics administered before, during or after surgery can expedite recovery times and reduce your saluki's anxiety.

A precautionary note:

If your saluki is receiving any medications prior to being anesthetized, make certain that this information is clearly stated and contained in the dog's medical chart. Certain drugs, especially those affected by liver metabolism, can have a profound effect on the dog's response and recovery. Some antibiotics and anti-ulcer medications may result in

prolonged drug elimination and should be discontinued 2-3 days prior to receiving anesthesia.

Though there are many appropriate anesthetic choices available to the veterinarian that allow safe and predictable anesthetic planes and recoveries in sensitive breeds like the saluki, the cost of these products can vary considerably. Most veterinarians select drugs and combinations that are not only safe, but cost effective for the client. In addition, individual veterinarians often have a preference for particular drugs or combinations that they feel comfortable with, so don't be alarmed when a new vet uses a product you are unfamiliar with. However, when a certain combination of agents has been used on your dog successfully, make note of what was used and request that it be used in the future, if possible.

Most modern veterinary practices understand that there are inherent differences in the manner in which sighthounds respond to certain anesthetics, but it is your responsibility to be certain this is the case, prior to any procedure. This is especially true if you are forced to take your saluki to an emergency clinic unfamiliar with your dog (s). The last thing any veterinarian wants to do is harm your pet, and most are very amenable to learning a breed's idiosyncrasies, so leave the attitude at home and ask POLITELY!!! If your vet is not sure what anesthetic agents are best for your saluki, call other saluki owners that you know and ask for their veterinarian's name(s). Give the name/number to your vet and ask that a call be made. Please remember; veterinarians will generally NOT talk with lay people concerning drugs or anesthetic protocols, but they will happily speak to other colleagues. Do not request that a saluki breeder call the veterinarian with A advice!@

Fortunately, drug companies, researchers and anesthesiologists today recognize breed differences as they become known and instruct veterinarians accordingly during veterinary school and continuing education seminars.

References

1. Feeman WE. Idiosyncrasies in greyhounds that can affect their medical care. *Veterinary Medicine* 2005; 100, 8: 592-600
2. Court MH. Anesthesia of the sighthound. *Clinical techniques in small animal practice* 1999; 14: 38-43
3. McKelvey D and Hollingshead KW. *Veterinary anesthesia and analgesia*. St.Louis, MO: Mosby, 2000

While your veterinarian is generally the best source of health information about individual dogs, the Saluki Club of America would like to offer some supplemental material on the general health of, and some specific issues that affect the saluki breed. Like most dogs, salukis can live a long and healthy life if they are free from serious genetic disorders and if given proper care, food, exercise and routine veterinary attention.

Acceptance and use of the information contained in these handouts, constitutes an acknowledgment that the user hereby releases and indemnifies the Saluki Club of America, and its officers, directors, members, and agents from any and all liability and damages sustained by the user as a result of any information obtained from this committee.