A Guide to Anaesthesia of Irish Wolfhounds

By Dr. Régine Vandamme MRCVS

Dr Regine Vandamme is a Veterinary Surgeon of over 30 years' experience and has her practice in Turnhout, Belgium. She is also the breeder of the 'First Avenue' kennel of Irish Wolfhounds, which she began in 1992. She runs a general practice, but also specialises in frozen semen storage and artificial insemination.

As owner, breeder and vet I often have the question in practice of how I manage the anaesthesia of Irish Wolfhounds.

It took me years to find a protocol that was 'ready to use' with sometimes of course, an adaptation made to the specific cases that come in. However, in general I can say that the protocol I use for Irish Wolfhounds is a very safe and very usable one, with basic needs. The protocol that I use is a proven one in my practice and personally I would not use any other. This is also because after all these years I can make a much more accurate decision if needed, because I know the side effects very well.

Some of the directions and volumes I use are different from what the pharmaceutical industry will give as an average. In all cases it is much less than that which is notified and indicated. The idea behind this is that the larger the dog, the less you need per kilo of bodyweight to have the same effect as in for example, a poodle. This is because one should take the measurements of body surface and not of body weight. As this is not 'an easy tool to handle' the calculations are done for practicality on bodyweight, which makes a big difference in large dogs such as Wolfhounds.

As a matter of course, a general check-up is needed before one starts a proper anaesthesia. This includes counting heart beats and pulse (that you can feel in the hind legs). Looking at the mucosae is a very useful and easy tool that can give you as a vet, a lot of hints about the general health of your patient. In cases where liver or renal failure could be present, a complete blood count and chemistry should be done, ideally 48 hours before surgery, because it could have an impact on the volume of the anaesthesia. If possible, it is preferable that the dog has not eaten 8 hours pre surgery. I always allow dogs to drink until 4 hours before surgery. Of course in emergency cases we do not always have what we want!

I always give Carprofen or Methadone before I start anaesthesia. It is scientifically proven that you have to give a pain killer before pain occurs. Also this will have a positive influence on the anaesthesia, in that you will use much less medication to achieve the same result. Keeping the doses down is one of the points we have to keep in mind for a safe protocol.

As a matter of safety, I start by putting a catheter in the vein of one of the front legs. This will be needed following anaesthesia, but also serves as a 'first line' if something goes wrong. In Irish Wolfhounds I use an 18 gauge catheter, as this is the easiest one to use for this breed. It is long enough and stays very well in the vein if attached properly.

Everything I do next in the function of anaesthesia will be done through this catheter. It works very fast and you can introduce the products gradually if needed (not as a bolus) so that one can work by effect. This is especially important for patients with renal failure, or for bitches undergoing caesarean section. The bodyweight of pregnant bitches is of course not correct, because you have to reduce the body weight by that of the puppies.

The following anaesthesia is for an IW above 45 kg body weight. I think this is 90% of the adult Irish Wolfhounds.

1. I start with 0.5 ml Dexdomitor (dexmédétomidine chlorhydrate) intravenously. **NEVER** more. In fact this is the dose for a 25 kg dog when given it intra muscularly.

   As you see this is really a very little dose, but for Irish Wolfhounds it is enough. Just wait 3 minutes to let the product work.

   Some dogs can be very well manipulated for minor surgery like removing little skin tumours, or managing skin wounds using just this (with the addition of local anaesthesia of course).

2. After that I use Propofol, this is a very safe product if used properly. In Europe Propofol is available in two concentrations - 10% and 20%. The guideline dose is 4ml Propofol 10% for each 10 kg bodyweight (equal to 2ml Propofol 20% per each 10 kg bodyweight).

   As I have the two concentrations available, I give first 6 ml Propofol 20% (which covers the first 30 kg bodyweight) and then I use the Propofol 10% for controlling the depth of anaesthesia. This enables you to better adjust the effect (looking at the reflexes of the eyes), as you increase the volume. The amount needed can be kept under more control (think about pregnant bitches and dogs with renal/liver failure) and is a more efficient use of the anaesthesia.

   Possible side effects can be: –

   - -the dogs does a little bit of 'cycling ' with the front legs: This indicates that there is too LITTLE Propofol given, so you need to give a little bit more. I would use the Propofol 10 % here, because of the graduation possibilities.
   - an apnoea can occur (this means that the dog doesn't breathe for about 20 seconds, but will recover over the next 20 seconds.)

   Propofol is short acting anaesthesia, so will not be enough for a C-section or for neutering a dog/bitch. For longer operations, the Propofol is used to put the tracheal tube in so the gas anaesthesia can then be used thereafter.

IMPORTANT EXCEPTION: CAESARIAN SECTION.

For a C. section I will NOT give the Dexdomitor in the beginning, but will immediately start with Propofol and gradually increase this, while carefully monitoring its effects.

Propofol is a very safe product and one that doesn't find its way to the uterus.

For C-sections I use Propofol until I have opened the abdomen and I can see the uterus with puppies. At that moment, I turn on the gas anaesthesia (Isoflurane).

I will not use gas anaesthesia too early because this could harm the puppies. So you have to give Propofol as a gradual anaesthesia for a while, until you open the abdomen. Then once you can reach the puppies, it is safe to turn up the gas anaesthesia.

The result is that the puppies will be very much alive after the section and will have nearly no influence from the anaesthetic.

3. Gas anaesthesia (oxygen with Isoflurane or Sevoflurane) is used for the major surgery.
   If point 1 and 2 are properly followed this can last for several hours without any problem of keeping the dog under adequate anaesthesia – such as would be required for abdominal surgery or osteosynthesis, etc. This will result in less use and need for gas anaesthesia, which is of course always the goal of a good anaesthetist. It will also allow a very good and fast recovery.

At the end of the surgery I leave the tracheal tube in place (with deflated cuff) until the dog gives the tracheal reflex, then I take it out quickly (as the cuff is deflated, this can be done easily). It always has a good influence on general health post anaesthesia, if the dog is completely oxygenated after surgery.

After half an hour post-surgery, some dogs will walk around and be very 'clear in mind'. In the case of our large dogs this is an important issue, because if dogs panic they can easily hurt themselves and large dogs are not easy to handle if they do so. In the case of Caesarean Section it is good that the bitch should recover without panic and is very useful for accepting the new-borns.

Some people have a problem with the high volume of Propofol needed but I have to counter this, with the fact that using larger volumes means that you can easily titrate it and the chance that you will give too much is very low.

For me this is a very nice and good protocol. I can imagine that some people have other protocols which they are used to and in some cases it may be safer to use a 'known' protocol, rather than one with which you don't feel comfortable.

This protocol looks maybe a little bit 'chaotic' but if you do it as written here, it is extremely easy and has been proven as safe for the Irish Wolfhound.

I would like to say a word about the Dexdomitor (dexmedetomidine). It was the first alpha-2 agonist on the market. After that came other lookalike products but in my opinion, those do not have the same effect on dogs as the Dexdomitor.

The reason could be in the molecular structure; because the dex (right) turning form of the molecule is used. In the others a combination from right and left turning molecules are used. I have the impression in dogs that the effect from Dexdomitor is better and more productive than if you use the other molecular ones such as Domitor, Sedator, Medetor (medetomidine).

This is in my opinion and experience, only very notable in large dogs.

SUMMARY : –

- Dexdomitor (never more then 0.5ml) IV
- IV Propofol
- Gas anaesthesia

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