The ins and out of surgical admission - what more can we do?

Dr Merrilyn Fitzgerald  BVSc ( Hons)
Pacific Vetcare, TAFE North Coast Institute and Open Colleges

When a client brings their animal in for surgery, they are not present at the time of the procedure to observe the skill of the surgeon or the proficiency of the veterinary nurse monitoring the anaesthetic. Their opinion of the surgical procedure is based on the animal's survival and the surgical outcome but is also heavily influenced by the interactions they have with the veterinary nursing staff at the time of surgical admission and discharge.

A veterinary nurse's input to a surgical case can be broken down into three main areas:

- **Technical skill** – Performing physical examinations animals preoperatively, inducing and monitoring anaesthetic, clipping and aseptic surgical skin preparation and occasionally scrubbed surgical assistance.
- **Knowledge** - Understanding of the range surgical procedures being performed, anaesthetic risk and the drugs being administered pre and post operatively. Nurses must also understand and be able to explain to clients the reasons for performing pre anaesthetic blood tests and for putting animals on intraoperative intravenous fluids.
- **Empathy** – Appreciating that owners are often anxious about their animals being anaesthetised and concerned about their animals condition. Nurses need to be able to answer questions and console owners so they feel more comfortable with the procedure that is being performed on their animal.

When an animal is being admitted for surgery or discharged there are things nurses can do in these three areas that will alleviate client worries and improve the surgical and anaesthetic outcomes for their pets.

**Surgical admission**

- If time permits, schedule an admission consultation so you have time to go through consent forms, answer questions, and perform a preoperative health check. This is a much better system in a busy vet practice than trying to answer phones and deal with other clients while admitting a surgery. If an animal is coming in for a major procedure the vet may choose to do the admission but nurses will save the vet a lot of time by doing the majority of the admissions.
- Look what surgeries are coming in for the day – ideally print out a list. Know the name, species and sex of the animals coming in for each procedure.
- Fill out the consent forms with the client and make sure they understand what is going to be performed – always get a correct contact phone number for the day.
Don’t leave clients just to tick boxes such as IV fluids and additional pain relief without explaining those things to them.

- Have an estimate of the procedure for the client – you may need to ask the vet if one has not already been provided. Remember it is an estimate – a range of what the fees may be, not an exact quote.
- Make sure you have adequate detail on the surgical admission form – owners will remember the tiny skin tag that was forgotten not the life saving mast cell tumour removal. Make sure you note down all the extras such as an ear clean, nail clip and expressing anal glands. Make sure these get done.
- Label any items that are coming into hospital with the animal.
- Perform a thorough physical examination. Pay special attention to:
  - heart murmurs and arrhythmias – make sure you can identify and ideally grade heart murmurs
  - Pale gums as well as other alterations in mucous membrane colour
  - Body temperature both elevated and decreased
  - extra lumps and bumps
  - level of dehydration
  - other factors such as breed and age that may affect the anaesthetic (ie brachycephalic, site hound)

- Young animals being admitted for desexing may not have had a recent veterinary check so make sure you check the following
  - the sex (for cats – some owners get it wrong)
  - presence of umbilical and perineal hernias
  - retained deciduous teeth
  - Hind dew claws

All these things can be addressed at the time of desexing and it is better to pick them up at admission rather than having to ring the client once the animal is anaesthetised. The owner can also be notified of the possible change to the estimate they have been given for the desexing.

**Pre anaesthetic blood test**

Different clinics will perform a different range of blood tests as a pre anaesthetic profile. The profile should not necessarily have to be the same for each animal.

Suggested Preanesthetic Testing Guidelines put out by IDDEXX are as follows:

**Healthy Juvenile** (1 year or younger) Complete blood count (CBC),
- ALB, ALB/GLOB, ALKP, ALT, BUN, BUN/CREA, CREA, GLOB, GLU, TP
  - Na+, K+, Cl

**Healthy Adult** (1–7 years) Complete blood count (CBC)
- ALB, ALB/GLOB, ALKP, AMYL†, ALT, BUN, BUN/CREA, Ca+, CHOL, CREA, GGT, GLOB, GLU, LIPA†, PHOS, TBIL, TP

**Healthy Senior (7+ years) or Sick All Ages**- Complete blood count (CBC)
The indications and advantages of performing pre anaesthetic profiles need to be clearly explained to owners. A pre anaesthetic profile is useful because:

- It helps assess the animal’s ability to tolerate anaesthesia by giving the vet an idea of organ function. The liver and kidneys are involved with metabolism of anaesthetic agents.
- It can identify underlying or unknown illness. These illnesses may be exacerbated by anaesthesia or may not have been identified by the client.
- It gives the clinic as baseline to identify illness in the future but comparing blood results to those taken now.

There are also advantages of performing a complete blood count instead of just a PCV. These include being able to identify the following conditions:

- Leucocytosis which may be associated with inflammation, infection or stress.
- Thrombocytopenia which is the most common bleeding disorder in veterinary medicine, the consequences of low platelet numbers can be life threatening in surgical or dental procedures.
- Leucopenia and neutropenia. The presence of either of these conditions in patients may indicate serious underlying disease or immunodeficiency. These animals could therefore have complications in the post surgical period.

There are some great handouts that IDDEXX have online that you can print out for your clients. They fully and clearly explain the benefits of the pre anaesthetic profile.

**Intravenous fluids during surgery**

Intravenous fluids are considered by most vets and nurses as being essential for long and difficult surgical procedures but they are probably of benefit to any animal undergoing anaesthesia.

The benefits of peri operative fluid therapy are as follows:

- Access to an IV line so the vet is able to administer drugs easily if there is anaesthetic emergency.
- IV fluids help to maintain a steady blood pressure which protects the liver and kidneys from damage due to poor perfusion. One study demonstrated that approximately 22% of dogs and 33% of cats had at least one episode of hypotension during surgery (defined as systolic blood pressure less than 90 mmHg).
- IV fluids can be valuable in replacing fluids lost during surgery due to haemorrhage or loss of abdominal fluid.
- Patients on IV fluids tend to recover faster from anaesthesia and if they are well hydrated post op they are more likely to return to normal eating and drinking patterns quicker.
The standard fluid rate which can be administered with minimal risk of fluid overload is 10ml / kg / hr. The normal fluid would be lactated ringers or hartmanns. An economical way of delivery IV fluids is to have a 5L bag of hartmanns set up with a dial up giving set and just use an 18g needle to put into the IV catheter bung – then all you have to do is replace the needle every surgery. Ideally, every animal under general anaesthetic should be receiving intravenous fluids.

**Anaesthetic Risk**

It is common for clients to be a little nervous about their animal having a general anaesthetic.

Studies have shown that the incidences of complications of dogs and cats undergoing general anaesthetic were 2.1% and 1.3%, respectively. Death occurred in 0.11% and 0.1% of cases, respectively.

This means the chance of anaesthetic death is generally very low. One way you could phrase a response to a question about anaesthetic safety would be “There is always some degree of risk with anaesthetic but we take all the necessary steps to reduce that risk by using modern gaseous anaesthetic machines and advanced monitoring systems similar to what are used in human hospitals. We can further reduce the anaesthetic risk by performing pre anaesthetic blood test and by putting the animal on intravenous fluids during surgery.”

Client can also be made aware that the anaesthetic is being performed by highly trained and experienced staff.

**Additional Post operative pain relief**

The need for additional pain relief is probably best made by the veterinarian. They will base their decision on the surgical procedure being performed, the analgesic given as part of the premedication and the animals pain score on recovery. Some vets will routinely give NSAIDs at the end of a surgical procedure and not consider this as additional chargeable pain relief where as other clinics will charge an extra fee for this.

One factor to consider is the duration of common analgesic drugs used as premedicants. The following are the duration of action of some common analgesics used in veterinary premedications or as induction agents:

- Methone 4-6 hrs
- Butorphanol - analgesia wears off after 1-2 hrs even though sedation lasts for 4 hrs
- Ketamine - 4-6 hrs
- Buprenorphine (temgesic) 6-12 hrs

Animals that receive shorts acting opioids as part of their pre medication may require more post operative analgesia than those receiving longer lasting drugs.

Non steroidal drug such as meloxicam and carprofen are commonly used post operatively. NSAIDs should be given once the patient is a not at risk of decreased kidney perfusion. Most veterinarians will give these medications once the animal is recovered from general
anaesthestia. Animals that have undergone anything more than a minor surgical procedure would probably benefit from some form of ongoing analgesia in the post operative period.

**Post-surgical discharge**

Most surgical discharges for minor or routine procedures will take place late on the day of the surgery. It may be your practice policy that you have already rung the client after the surgical procedure or once the animal had recovered from anaesthesia, to let them know how the animal was going.

The following procedures should be part of a surgical discharge:

- Ideally make an appointment for discharge so owners are not left waiting to pick up their pets
- Animals that have had major or non routine surgery should probably have a discharge appointment with the vet who performed the surgery.
- Go through any post operative instructions and payment before getting the animal
- Find out and be able to explain what was done during the procedure. Explain the procedure in simple terminology and show them where the stitches are what they look like.
- Explain the post operative medication – revise your basic pharmacology so you can explain what each of the medications are for. For example why the animal may be on two different antibiotics.
- Explain and break down the bill for the client – go through item by item so they can see exactly what they are paying for. Make sure you know how you would explain items such as theatre fee, injection fee and disposables.
- Make the post operative check up appointments at the time of discharge if possible.
- Make sure the animal is clean and smells nice
- Return all the animals items- blankets, toys, leads, collars etc
- Make a follow up phone call the next day to see how the animal is recovering.

Surgeries are a vital part of the way veterinary clinics make an income so small improvements in your technical skill, knowledge and empathy can have a positive impact on your veterinary practice.