Preanesthetic Testing—It's Time to Broaden Your Coverage!

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Most veterinarians would agree that a preanesthetic evaluation is valuable. Most veterinarians offer some form of it for their patients. Some even make it mandatory. But from there, wide variations exist. For example, one practice may perform a full CBC while another practice performs only a packed cell volume! Or, one practice may perform a full chemistry panel while another may only perform a blood urea nitrogen (BUN) test.

It is time to rethink what we are offering our clients. It is time to examine it from other perspectives. For too long now, it has been driven mostly by economics rather than by best medical practices. To re-address the issue, we should consider the goals of a successful program. Prompting a safe anesthetic event is certainly at the top of the list. But there is far more to consider, as the preanesthetic evaluation becomes the first laboratory investigative event in the animal's lifetime. It may even be the first exposure to diagnostic veterinary medicine for the client.

A lot more is at stake here. Owner anxiety, staff pride, clinic reputation and even the ever-present fear of litigation are all concerns. With this in mind, shouldn't we rethink what we are providing our patients? Are we adequately screening our patients? Are we up-to-date with technology?

SHOULDN'T WE BE PROVIDING THE BEST CARE?

Too often we prejudge clients' willingness and ability to pay for a service without offering them a choice. Ironically, this is done out of concern for the client—we hesitate to "burden" them with a higher fee. We mean well, but we let the client and our profession down by not offering the best that we are trained to provide.

Technological advances have made possible an incredible inventory of in-house testing possibilities. Now, more than ever, we can quickly and accurately perform preanesthetic testing and do so at the point-of-care and at the time of service. There is no fresher data to review than a preanesthetic panel created by an in-house lab performed on the morning of the procedure. We should take advantage of in-house technology and provide the best care that it makes possible.

SHOW CONSIDERATION TO OUR CLIENTS

The owner-convenience factor should also be considered. Is it right to ask the owner to bring the pet into the clinic a day or two before the intended procedure so the doctor can save a few dollars by batching samples and sending them to an outside lab? In this author's practice, new clients commonly proclaim, "Wow, that's certainly more convenient than my previous vet clinic! I wasn't aware that these tests could be done in the clinic." Our clients are busy too and we must respect that. Providing convenience is a common thread in any successful service-related business today.

The concept of preanesthetic testing is nothing new, many progressive practitioners have been offering such testing for 10 or more years. But the client-building aspect is just now being recognized. Clients who were originally slow to warm up to the idea of the testing now actually expect it. Could this become a standard by which to gauge the quality of a practice? In fact, it has been so successful that many practices have made, or are considering making, preanesthetic testing mandatory.

If your practice is not enjoying the benefits of preanesthetic testing, or if your testing protocols have not been updated in the last 24 months, continue reading.

The goals of preanesthesia testing are well worth revisiting.

1. Provide safe anesthesia for your patients by identifying occult abnormalities. In the author's practice, 10% of the animals presented for routine elective procedures had an abnormal laboratory value. This was also found in an exhaustive study performed over several years.[1] Consider finding an elevated white blood count

(WBC) associated with inflammation on an elective declaw procedure. Is there infection present somewhere in this cat? With 10 incisions for a front declaw (2 feet each with 5 toes), it wouldn't make sense to proceed and risk infection. Rather, it would make more sense to postpone the procedure, search for the cause (e.g., respiratory infection?) and perhaps dispense antibiotics for 10 days and then retest to assess improvement before progressing with the surgery. In the author's practice, that very situation has resulted in very positive comments from clients. They recognized the care and consideration given for the well-being of their pet. From a practice manager's perspective, the client was pleased with the caring attitude displayed, the pet was better off by having the infection treated and the clinic actually made more income (with followup testing). Another win-win-win scenario.

2. Gain insight into immediate aftercare. Granted, not all abnormal values require canceling the procedure. Rather, the anesthesia protocol may simply need to be adjusted. Consider finding elevated BUN and creatinine (CREA) tests prior to a tumor removal. Instead of general anesthesia, perhaps a sedative and local anesthesia would suffice. Also, the doctor may consider adding IV fluid therapy not only preoperatively and perioperatively, but post-operatively as well. Or, consider finding a mildly hypokalemic cat during a preanesthetic test presented for a dental prophy. Dispensing potassium supplements for home administration will vastly improve recovery.

In that sense, the "pre" anesthetic test would have value even if performed after induction of anesthesia. Consider an extremely fractious cat—getting a preanesthetic sample could be near impossible and would be laden with artifacts (elevated glucose, elevated white blood count (WBC), etc.). Rather than omitting the test altogether, consider doing the test on a sample collected at the induction. In fact, the immediate post-anesthesia period is often more critical than the anesthesia period. By the time surgery is well underway or even near completion, a lab report may be most helpful in planning aftercare. An example might be the azotemic cat after dental surgery. Aftercare here is actually the most critical consideration for recovery.

3. Create baseline values. The preanesthetic test in most instances will be the first blood test that a pet will receive. This will become a reference point for future care. Elevated values will likely prompt followup lab tests, which will go even farther in creating a laboratory knowledge base for the pet.

4. Begin a lifelong trending program. Trending now becomes a possibility. Consider how this testing can jumpstart annual wellness testing for following years. Once clients have been introduced to the value of laboratory testing, they are more accepting of future testing. The real beauty here is the value of trending. Trending allows a practitioner to make valuable observations about subtle changes that would go unnoticed otherwise. There may be a pattern that will become obvious over time. An example would be finding a gradually elevating alkaline phosphatose (ALKP) over a period of three years. The ALKP values might still be within the reference interval yet reveal a trend. Followup testing would be indicated and may reveal some liver abnormality or perhaps lead to a discovery of hypothyroidism or some other endocrinopathy.

Making a discovery that originated from observing a trending phenomenon will underscore the value of annual testing to the client. Again, the client sees value in testing.

5. Build client awareness about the value of laboratory testing. Clients exposed to preanesthetic testing will become more aware of the value of laboratory testing and what impact it has on the veterinarian's thought processes. Clients begin to see how much veterinarians utilize laboratory data. The physical examination, patient history and laboratory results are three points that come together to create a Diagnostic Triangle. The Diagnostic Triangle provides an excellent medical foundation from which to make informed decisions.

Once clients become more aware of laboratory testing and how it translates into a diagnosis, they become more receptive to laboratory workups later if and when the pet develops some medical issue. In the author's practice, clients commonly are given a copy of their pets blood tests for their pet's health folders. They retrieve them and bring them in with their pets on followup visits. They frequently ask questions such as, "Doctor, should we recheck the alanine transamine (ALT)? It was a little high last year and I am concerned that it may be high again." It demonstrates their interest and appreciation of the role of laboratory testing. It is a great asset for a practice.

6. Reduce stress on doctor, staff and clients. While there is always some degree of risk during anesthesia, the knowledge gained by testing will provide some degree of comfort to the doctor and staff. There is far less likelihood that some hidden ailment could cause problems. The clients are also more comfortable and actually gain more confidence in the clinic. They perceive the testing in a more caring light. They may voice some opposition to the fees related to the testing, but this can be addressed when they receive a call post-operatively advising them that everything went well.

DEVELOPING A GOOD SCREEN

Developing a good preanesthetic screening program involves careful considerations, including the base health of the patient, pertinent history, the type of anesthesia considered, the mode of elimination of the anesthetic period, the invasiveness of the intended procedure and the costs to the clients.

See the table below for the protocols employed in the author's practice. This protocol has been and will continue to be updated over time.

DON'T FORGET A HISTORY UPDATE AND LAST-MINUTE PREANESTHETIC PHYSICAL EXAM

Create a patient history form with pertinent questions (recent well-being, appetite, other anesthetic experiences, etc.), which can be presented to the client at drop-off. Also, create a simple preanesthetic physical exam form to be completed by the surgeon prior to anesthesia.

WHY NOT MAKE IT MANDATORY?

Go one step farther. If the testing is as valuable as we have been discussing, why shouldn't we do it for all of our patients? Clients should not be given the burden of making a decision about something of which they have little understanding. Left to their own knowledge base, their only consideration will be the cost. It is our role to provide the level of service that matches our mission statement. If our mission statement is to provide the best possible care, then there is no reason to compromise on something as important as preanesthetic testing. Simply make the test mandatory.

In the author's practice, this became clinic policy approximately 10 years ago. At a clinic meeting a staff member brought up the idea, stating, "It seems inconsistent to do preanesthetic testing for one pet and not another." The 27 staff members voted unanimously to make it mandatory. Realize, they were the ones that had the task of repeatedly selling the concept. They observed the value, and wanted all clients to enjoy the benefits, yet they recognized the difficulty in getting clients to fully understand the importance. Since then, relatively no one has complained about the mandatory requirement. It just became a matter of policy.

Also, the mandatory program saves valuable staff time. Now, instead of spending time explaining the value of preanesthetic testing, they can spend more time educating clients about other health-enhancing, income-producing services such as improved dental care or better heartworm preventive compliance.

THE IN-HOUSE LAB CREATES A "VALUE OF NOW"

With in-house lab data in hand and meeting face-to-face with the doctor, the client is far more engaged and consequently far more likely to comply with recommendations. This holds true for any testing, preanesthetic, annual wellness screening and diagnostic workups.

Consider the impact. The client has made considerable effort to come to the clinic. That may involve time off from work, corralling the cat or collecting the dog, carting them to the clinic, spending time in the waiting room, seeing and listening to all the activity and discussing the data face-to-face with the doctor. This creates an attentive client! Compare this alternative to calling them back the next day, catching them busy, or worse yet, leaving a recorded message and playing phone tag. The momentum is lost…as well as efficiency!

In the author's practice, it has been proven that discussing the results of lab work has resulted in approximately twice the compliance rate compared to following up by phone. That is significant value and far outweighs any small saving gained by batching and sending out the samples.

Updating a practice's preanesthetic protocols by taking advantage of new technology can save lives, relieve stress and be a practice-builder. A doctor should be proud to make periodic updates, plus, it sends a positive and powerful message to clientele.

	Healthy, under 7	Healthy, over 7	Not healthy, all ages
All	CBC	CBC	CBC
	PAP+ALB+GLOB	GHP*	DHP
	Electrolytes	Electrolytes	Electrolytes
	UA	UA	UA
Dog	4DX	4DX	4DX
Cat	FeLV/FIV	FeLV/FIV	FeLV/FIV
		T4	T4

PAP = IDEXX Preanesthetic Panel (ALT, ALKP, BUN, CREA, GLU, TP)

GHP = IDEXX General Health Panel
(PHOS, ALB, ALT, ALKP, BUN, CHOL, CREA, Ca, GLOB, GLU, PHOS, TBIL, TPRO)
**Replace AMYL with GGT for cats*

DHP = IDEXX Diagnostic Health Panel (AMYL replaced by GGT and CHOL replaced by LIPA)

4DX = Heartworm, Anaplasma, Ehrlichia, Lyme Disease

[1]Irwin, J. Screen Pets Every Year. *Veterinary Economics*. April 2001.

CASE STUDY—POPPY

Signalment: 7-month-old female domestic shorthair cat
Presented for ovariohysterectomy (OVH) and front declaw

Preanesthetic exam and questionnaire revealed no abnormal findings.

Preanesthetic lab tests revealed normal chemistry and electrolyte panels, however there were abnormalities noted on the CBC. An elevated WBC and neutrophil count was noted. Blood film examination showed 10% bands and no other abnormalities. This supports the presence of inflammation that is further supported by the slightly increased globulin. A superimposed glucocorticiod influence is suggested with the extreme low within reference internal limits.

Summary: With elevated WBC, it was logical to delay an elective surgery such as this. The kitten was re-examined in an effort to localize the cause of the WBC elevation. There was a molar with an adjacent inflamed gingival tissue and marginally inflamed tonsillar tissue. The respiratory tract appeared normal on re-examination.

A diagnosis of localized oral infection was made and antibiotics were dispensed. The kitten returned in 7 days for re-evaluation. A brief exam showed improvement and the CBC was repeated and the values were improved.

Discussion: While the original findings were not catastrophic it made sense to delay the procedure. Considering the stressful impact of general anesthesia, abdominal surgery and declaw to such a young animal, it would be foolish to proceed. The owner was most appreciative of our postponement decision and the kitten eventually did well with the procedure.

HEMATOLOGY

	Value	Ref. Range
RBC	5.4 M/μL	5.0–10.0
HCT	30.0%	30.0–45.0
HGB	9.6 g/dL	9.0–15.1
MCV	41.0 fL	41.0–58.0
MCH	14.0 pg	12.5–17.6
MCHC	33.0 g/dL	29.0–36.0
RDW	18.1%	17.3–22.0
%RETIC	0.8%	
RETIC	52.7 K/μL	
WBC	24.58 K/μL (high)	5.50–19.50
%NEU	89.1%	
%LYM	4.0%	
%MONO	2.8%	
%EOS	3.7%	
%BASO	0.4%	
NEU	21.90 K/μL (high)	2.5–12.5
LYM	0.98 K/μL	0.90–7.0
MONO	0.70 K/μL	0.10–0.79
EOS	0.90 K/μL (high)	0.10–0.79
BASO	0.10 K/μL	0.00–0.10
PLT	442 K/μL	175–600
MPV	29.0 fL	
PDW	18.0%	
PCT	1.2%	

CHEMISTRY

	Value	Ref. Range
BUN	12.0 mg/dL	7.0–27.0
CREA	1.0 mg/dL	0.5–1.8
TP	8.0 g/dL	5.2–122
ALB	3.4 g/dL	2.7–3.8
GLOB	4.6 g/dL (high)	2.5–4.5
ALT	50 U/L	10–100
ALKP	210 U/L	23–212
GLU	98 mg/dL	77–125
Na	158 mmol/L	144–160
K	3.9 mmol/L	3.5–5.8
Cl	117 mmol/L	109–122

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