

Editorial

A matter of passion.

Vets are family. Wherever they live, wherever they come from they have many things in common. They are scientific, skilled, committed, hardworking, busy, compassionate, down to earth or dreaming but most of all, they are passionate about their job or should I say mad? When you think about it, you must lack a few brain cells to study many years in order to spend your life in blood, pus, urine and stools, risk to be bitten or scratched, be woken up in the middle of the night to attend an animal whose owner might not even pay you for the job! You surely don't embrace that career for the love of comfort and money (otherwise you'd be a dentist or a lawyer!). Having stated all this, it's a great pleasure to make you discover the first issue of Vets today. We hope you'll enjoy reading it and hopefully will find it useful for your daily practice. We certainly created it with passion, so enjoy and let us know how you like it!

Dr Fabienne Dethioux, MRCVS

A few drops that tell you lots !

or how to make the most of urinalysis.

From "uromancy" to PCR.

People have examined urine from the dawn of civilisation. In ancient Sanskrit literature, the observation of ants and insects accumulating selectively where individuals with diabetes mellitus had urinated led to the description of "honey urine". During the middle ages, uromancy (the art of reading the urine) was very popular, not only to define disease but also to predict the future (Bolodeoku & Donaldson, 1999). Recently sophisticated techniques, such as PCR of urinary sediment for the diagnosis of uro-epithelial cancers, have been developed. However, if you know what to look for, avoid the pitfalls in sampling and reading and use the right technique and material, the simple tests that can be performed "in house" give plenty of invaluable information.

► In practice, urinalysis is indicated in many circumstances.

Useful information can be gained not only about the urinary tract (from kidneys to urethra) but also about other organ systems (Table 1). A thorough evaluation of the urine is necessary. The specific gravity will allow the clinician to assess the levels of urea and creatinine in serum as well as the protein and bilirubin in the urine. The level of specific substances in urine can also be measured as an indicator of oxidative stress, for example

15F2t isoprostane which is considered as an accurate marker of the ROS (reactive oxygen species) activity in vivo (McMichael et al, 2006).

► The procedure can be grossly divided in 3 components.

1. A gross inspection (mainly visual but smell can be indicative of specific conditions too!)
2. Specific chemical testing, usually with a test strip
3. Microscopic examination of the sediment

► INDICATION FOR URINALYSIS (from Wamsley & Alleman, 2007)

Interpretation of serum levels of urea and creatinine

Pre-anaesthetic and geriatric screening

Diseases:

URINARY TRACT DISEASES

OTHERS:

- Endocrine (glycosuria, urinary tract infection)
- Hepatic (bilirubinuria, presence of ammonium biurate crystals)
- Haematological (haemoglobinuria indicating haemolysis)
- Neurological (bacteriuria in case of discospondylitis)

Follow up:

RENAL DISEASE

RESPONSE TO TREATMENT

POTENTIALLY NEPHROTOXIC DRUGS

Uroliths: Don't waste time!

NEW!

17 DAYS ONLY



URINARY S/O
HIGH DILUTION



A new addition to the Urinary S/O range

- 17 days only to dissolve struvite uroliths*
- Maximum efficacy against recurrent struvite or oxalate urolithiasis**
- Low struvite and calcium oxalate RSS

* Tourlier et al. The dissolution kinetic of feline struvite stones in urine in vitro depends on the urine struvite relative supersaturation ESVCN, Leipzig. 7- 31 November 2007.

** Among the Royal Canin range (dry food).

VETERINARY



ROYAL CANIN
VETERINARY DIET

Getting the precious fluid



What you need for cystocentesis © Dethioux

What might seem a very straightforward procedure in human medicine can turn into a challenging exercise when dealing with dogs or cats (and their owners!)

Depending on what you wish to measure, several methods can be used. Cats are different from dogs of course. You must aim to get at least 6 ml of urine. Urine that has been in the bladder overnight is good for assessing the kidneys' ability to concentrate, but the viability of some fragile bacteria might be reduced which will lead to false negative bacterial cultures.

The time elapsed between collection and the last meal must also be known because of the post-prandial alkaline wave (which can last up to 1 hour after a meal). The gold standard, particularly for urine bacterial culture, is cystocentesis or "supra-pubic puncture" which allows the veterinarian to obtain an uncontaminated sample. The procedure might appear a bit frightening to start with but dogs and cats tolerate it very well. The main difficulty is to have them lying down and staying still. Unless you are very skilled it's better not to perform this procedure in the presence of the owner. People tend to imagine what it feels like and they might be frightened. When you think

about it, you will usually do your blood sampling with a nurse instead of the owner holding the dog or cat and this should be no different.

Cystocentesis has very few contraindications or side effects. The practitioner must be careful if the bladder is over distended, for example in the case of urethral obstruction. The bladder wall might be damaged and unable to heal because of poor vascularisation. The risk of intra-peritoneal leakage is minimal and only really of practical concern with very fractious patients.

Obese or very large pets can be a bit challenging since it's more difficult to palpate and immobilise the bladder. It is not necessary to clip and surgically prepare the site.

If you suspect a bladder tumour (the most common being canine transitional cell carcinoma, because feline urinary neoplasia is very rare), cystocentesis is not the ideal test. First of all those tumours might seed along the needle path but also, often, the urine sediment might not contain diagnostic tumoral cells, giving a false negative results. A saline flush of the bladder will be a more reliable test, preferably combined with abdominal ultrasonography. (Wilson et al, 2007)

Cystocentesis

Cat : Remember that the cat's bladder is very mobile, has a long neck and when full can be located quite far cranially in the abdomen. The cat can be in lateral or dorsal recumbency. The main thing is to get them comfortable. You don't need to "grab" the bladder but simply hold it gently through the abdominal wall, pushing it caudally. Needless to say, the bladder must contain urine.

Tip: practise your bladder palpating and stabilising skills when you have a cat anaesthetised for neutering.

You can now, puncture the skin and the bladder wall right beneath it using a 22 (or 25) gauge, 2.5cm needle. That means you don't have to insert the full length of the needle. Once you think that you are in the bladder, apply a light suction on the syringe. Urine should flow. If not, do not fiddle around with your needle because you are likely to lacerate other structures, rather pull right out and start again with a fresh needle or use a different collection method.

Dog: Cystocentesis can be performed with the dog standing or in lateral or dorsal recumbency. For male, the puncture point is right under the prepuce (which you have to pull laterally) and for female, it's between the last two mammary glands. A good palpation should allow you to palpate and immobilise the bladder. Then the procedure is similar to cat's. Use a 22 gauge, 2.5 cm needle, unless the dog is really tiny.

Other methods

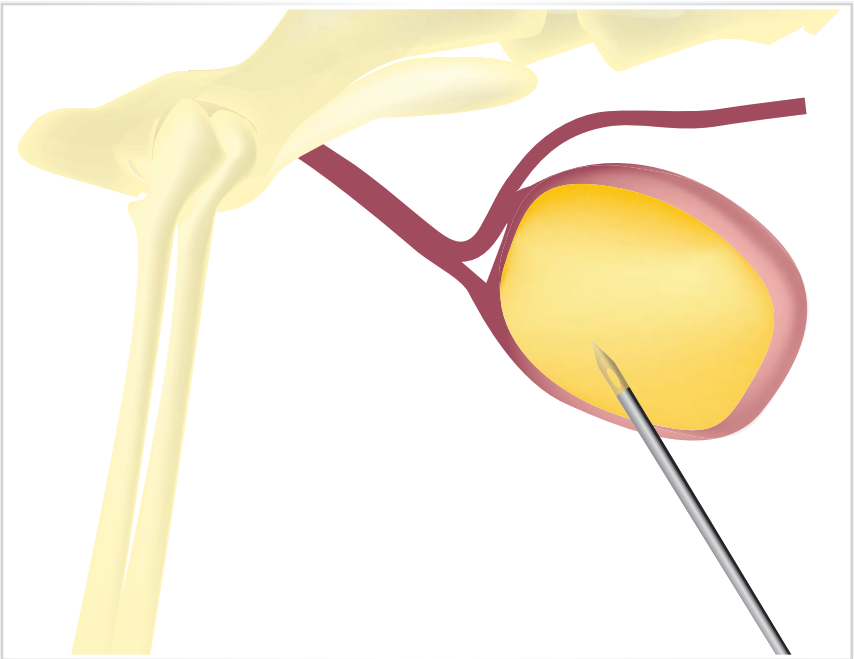
Naturally voided samples are a very good option. The mid-stream urine is best. A long-handled dish is very useful for dogs. Cats are usually willing to use a litter tray. You can line it with special non-absorbent litter (plastic granular Katkor® or fish-tank gravel) or simply a sheet of kitchen towel (no newspaper because the ink might tint the sample). Catheterisation is another option but extra care must be taken with fractious animals since urethral perforations can occur (Whittemore & Zucca, 2003).

Samples must be analysed immediately and always within 60 minutes after collection. Storage will lead to crystalluria in cats (Sturgess et al, 2001) and dogs, especially if the samples have been refrigerated.

That means that if crystalluria is found on a sample which has been refrigerated, the test must be repeated on fresh urine. On the other hand, refrigeration will minimize in vitro proliferation of bacteria but storage time and temperature don't seem to have a significant effect on pH and SG (Albasan and al, 2003).

If the samples are to be refrigerated, it's better to let them warm to room temperature before analysing them because a cold sample may inhibit the reaction of the dipsticks, leading to false negative results.

Keeping the urine in an airtight, sterile, opaque (and labelled!) container will prevent other artefacts.



Dog cystocentesis

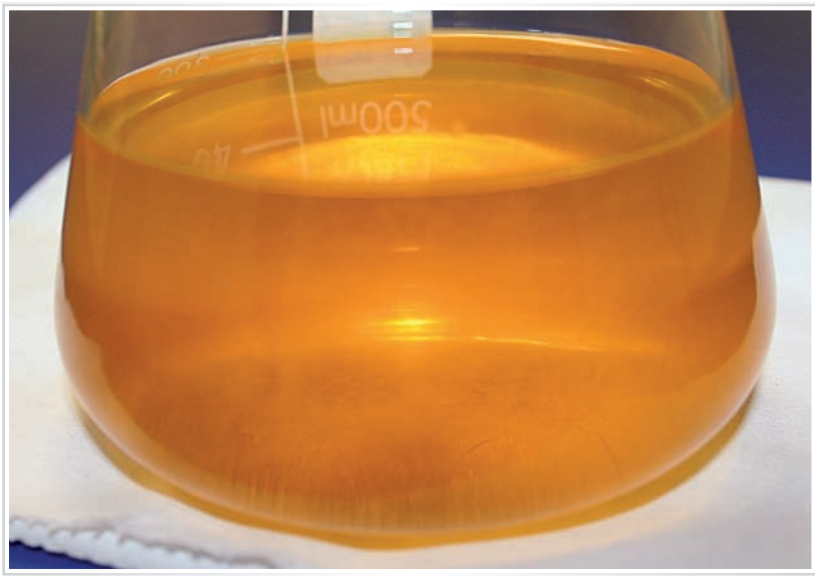
What is normal?

There are many physiological variations in urine.

In puppies younger than 4 week old, urine is more diluted (mean USG 1.018). Dogs from 1 month of age have USG values and other qualitative parameters similar to healthy adults. (Faulks & Lane, 2003).

Normal urinary output (per kg per day) of an adult dog and cat:
Dog = 25-60mls/kg/24 hours.
Cat = 10-20mls/kg/24 hours

What does urine tell you?



Turbidity of urine can be assessed at a glance. © Dethioux

Visual inspection



Special plastic gravel for cat litter. © Kaykor

Quantity: if possible, this is easier when the animal is hospitalised. It can be monitored for cats using a litter tray. Special plastic reusable gravel are available but one can also use non-absorbent fish-tank gravel.

Colour: concentrated urine will appear dark but a change in colour from orange to red or brown is usually indicative of haemoglobinuria or bilirubinuria. Coloured urine might influence the reading of test strips.

Turbidity: urine is normally clear but several compounds such as mucus, pigments, crystals, blood, pus or lipids can increase the turbidity. Once centrifuged, the supernatant usually becomes transparent and can then be used for dipstick analysis and measuring of the SG.

Odour: urine has a more or less pungent ammonia smell, which is directly proportional to the concentration. Male cats have very pungent urine. Conditions such as bacterial infection, especially if the bacteria produce urease or ketoacidotic diabetes will modify the odour.

Specific testing

Specific gravity: Test strip values are not reliable, thus specific gravity (SG) must be measured with a refractometer. The scale must be calibrated for cat urine which is more refractive than canine or human urine. If using a human refractometer, the following conversion formula must be used: Feline SG = (0.846 x Human SG) + 0.154. Remember also to zero the refractometer before each reading.



Refractometer. © Dethioux

NORMAL VALUES
(from Wamsley & Alleman, 2007)
Dog: >1.030 & Cat > 1.035: appropriately concentrated
Dog: 1.013 to 1.029 & Cat 1.013 to 1.034: minimal concentration (possible renal failure)
Dog & Cat: 1.008 to 1.012: isosthenuria (normal in the case of recent fluid administration or drinking, possible renal failure)
Dog & Cat: < 1.008: hyposthenuria

Proteinuria:

24 h protein excretion
< 20 mg/kg/day: normal
90 mg/kg/day: nephrotic syndrome (could also occur with haematuria or acute inflammation of the urinary tract)
200+ mg/kg/day: amyloidosis

The presence of protein in the urine is rapidly evaluated by the results on dipstick (1 to 4) in relation with the USG. When protein is present in the urine, your first step should be to examine the urine sediment. In case of lower urinary tract disease, it will be inflammatory (leucocytes, or red blood cells).

A mild proteinuria can be physiological in case of extreme heat or cold, hypertension, pyrexia or strenuous exercise (dogs). A heavy proteinuria is usually indicative of glomerular damage but haemoglobinuria and pyelonephritis must be considered too. Serum urea and creatinine will help assess the renal function.

NB: Urine Protein to Creatinine Ratio (UP:C)

UP:C < 1: normal
1 < UP:C < 2 : uncertain, perform other tests
UP:C > 2: abnormal

In dogs with chronic renal failure, a UP:C > 1 carries a negative prognosis compared to individuals with values < 1 at the time of diagnosis. Regular measures of the proteinuria must be performed to monitor the progression of the disease or the response to treatment with angiotensin-converting enzyme inhibitors (enalapril) (Jacob et al, 2005).

Bilirubinuria: The presence of bilirubin in urine is always significant in cats and is indicative of jaundice. Clinically normal dogs, especially intact males can have bilirubin in their urine. The SG must be examined. Concentrated urine will have a higher amount of bilirubin i.e.: a male dog with 2+ bilirubin and 1.040 SG is very unlikely to suffer from an icteric disease.

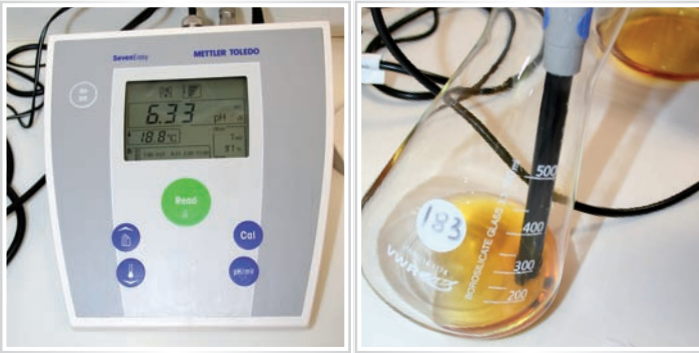
Glycosuria: The presence of glucose in the urine can have several causes but the most common is diabetes mellitus (or stress in cats). If the glycosuria persists, the patient will be predisposed to urinary infection and urine culture must be performed.

Haematuria: Rule out iatrogenic haematuria from traumatic collection and vaginal diapedesis in pro-oestrus. A few erythrocytes (<5 per high power field) is considered normal in urine. When the haem reaction is positive on dipstick further test should be performed such as sediment examination and blood workup.

Ketones: Ketones should not be detected in the urine of healthy dogs and cats. Ketonuria is usually indicative of unstable diabetes mellitus. Remember that ketonuria is diuretic leading to urine dilution.

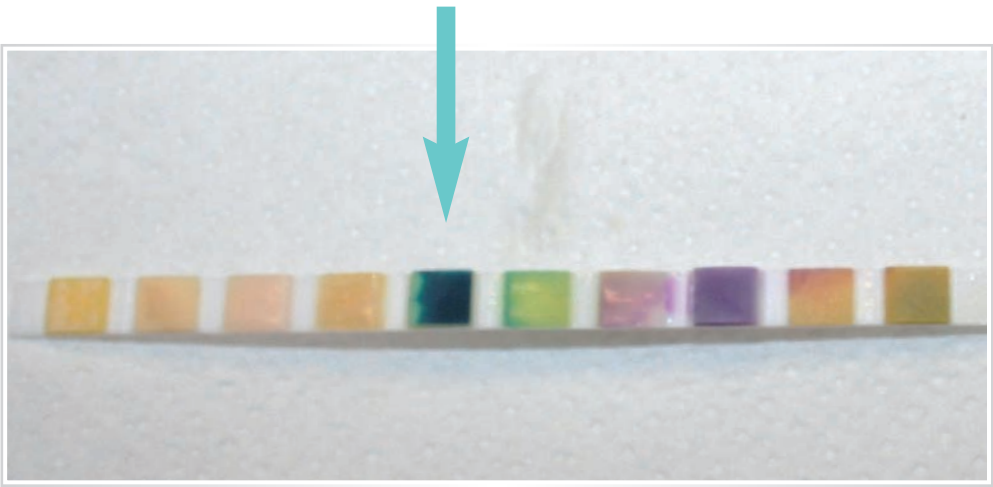


Buffers are used to calibrate the pH meter. © Dethioux



pH meter. © Dethioux

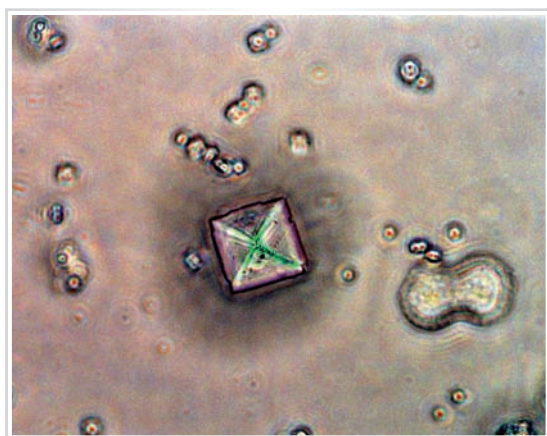
pH : Ideally this should be measured with a pH meter since the dipstick estimation varies up to 1 pH unit. Very few clinics have a pH meter because of the maintenance and calibration constraints. Urine samples can be sent to external laboratories for precise measurement (reading within 24h).



Dipstrip is useful and fast. This example shows glycosuria. © Dethioux

Microscopic examination of the sediment

Microscopic examination of the sediment after centrifugation is the best way to detect cells, casts, microorganisms and crystals bearing in mind the fact that cats fed dry or wet and dry food will naturally exhibit crystalluria (Sturgess et al, 2001).

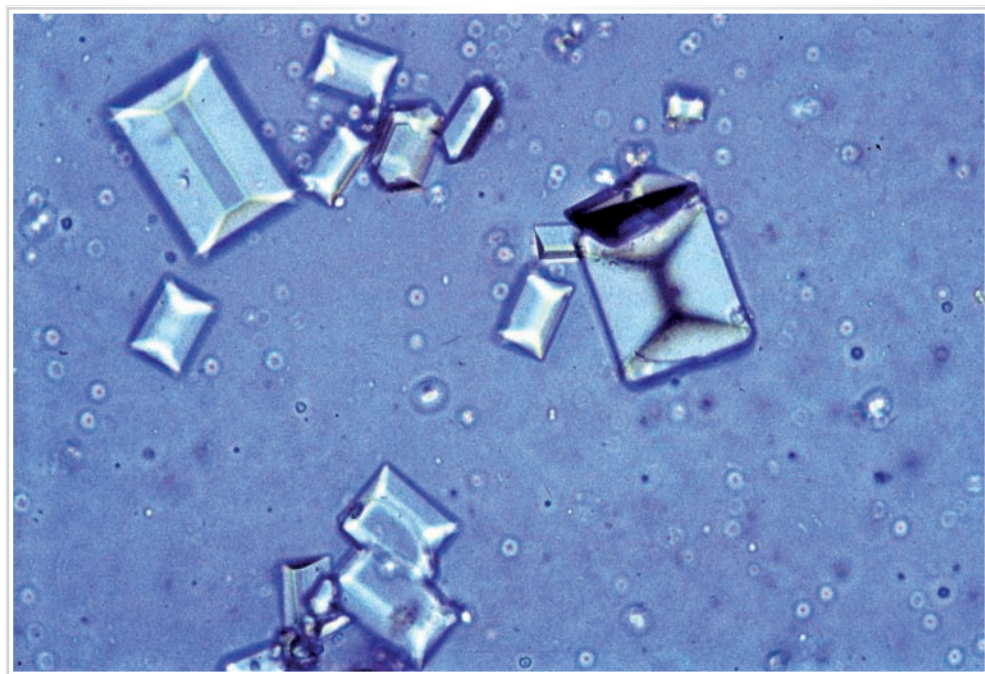


Calcium oxalate crystals. © WCPN

Learn to recognise the foreign elements often found in sediment such as sperm, talcum powder, plants, fibres... especially if the sample has been voided.

Sometimes amorphous elements mimicking bacteria ("pseudobacteria") can

lead to a false diagnosis of bacteriuria. Staining the sediment will eliminate this confounding factor, Wright's stain (methylene blue and eosin in methanol) has been shown to be a reliable method for detecting bacteria (Swenson et al, 2004)



Struvite crystals. © Waltham Centre for Pet Nutrition

Did you know?

Dogs receiving long term glucocorticoid treatment are predisposed to UTI, even if the drug is given at a low dose and on an "every other day" pattern. Even in the absence of clinical signs of urinary tract infection, it is recommended to check the urine and perform a bacterial culture on the urine sample at least once a year (Torres et al, 2005)

Previous treatment with cephalexin and enrofloxacin may lead to false-positive or false-negative glycosuria results. This must be taken into account when suspecting or monitoring diabetes mellitus in dogs (Rees & Boothe, 2004)

The urine composition varies between breeds, even if the dogs are fed the same diet. This must be taken into account when managing urolithiasis. For example, healthy miniature Schnauzers have significantly higher urinary calcium concentrations than Labrador Retrievers. (Stevenson & Markwell, 2001)



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Dr Fabienne Dethioux, MRCVS

Terbinafine: a possible pulse therapy for dermatophytosis.

Dermatophytosis is the most common contagious skin disease in cats.

Because of the potential zoonotic complications, the treatment is always very challenging because of the persistence of infectious material in the environment. The situation can be extremely difficult to handle in a cattery, not to mention charity shelters where financial constraints and human resource shortage are added difficulties.



Dermatophytosis is very frequent in Persian cats © Lancet

Recent in vitro studies have shown that terbinafine was effective against *Microsporum canis*, *Trichophyton mentagrophytes* and *Microsporum gypseum* with a MIC₉₀ = 0.03 µg/mL.

MIC = Minimum Inhibitory Concentration

A study was conducted on 10 healthy cats in order to assess the persistence of the chemical in hair. The amount of chemical was measured using a HPLC method (high pressure liquid chromatography). The cats received a daily dose of terbinafine (34-45.7 mg/kg) for 14 days and the terbinafine remained at a detectable level for at least 8 weeks. This is similar to findings in human studies where terbinafine was detected in serum, stratum corneum (for 48 days) and nail clippings (up to 90 days). Adverse effects were limited to vomiting and skin reaction (facial pruritus and macular/papular skin reaction after the discontinuation of the drug). This study opens up a new possibility for the treatment of ringworm in cats.

✉ Foust AL, Marsella R, Akeuwich LH et al – Evaluation of persistence of terbinafine in the hair of normal cats after 14 days of daily therapy. *Veterinary Dermatology* 2007; 18(4): 246-247.

Easy measures to prevent nosocomial infections.

Nosocomial infections are quite common in human medicine. The definition of a nosocomial infection is : an infection that is caused by staying in a hospital. In human medicine the statistical

figures estimate 2.3% of hospitalised humans can contract a nosocomial infection but this figure can reach 11% in the case of “risky” procedures.

In veterinary medicine, the proportion is estimated to be 5.5% on average. In addition to health and safety issues for staff, these unwanted complications have obvious financial consequences, not to mention possible lawsuits!

A recent trial conducted on 35,000 human patients has lead to a 27% reduction in nosocomial infections. To allow the best possible chance of minimising nosocomial infections, standard aseptic routine should be used, surgical procedures should be kept as short as possible and the following simple measures must be implemented in the veterinary hospital.

Keep them warm! Even a mild hypothermia will lead to a reduction of the oxygen concentration in the tissue, interfering negatively with the normal neutrophil and macrophage's functions. Avoid cold surfaces, cold perfusions (as the liquid cools in the tube), draught, dampness... The use of a heating pad is recommended as well as bubble wrap or warm blankets.

The interactions between infection and hyperglycaemia are not clearly understood but it is well known that hyperglycaemic diabetic patients have a higher risk of infections.

Any patient presenting with a hyperglycaemia (> 2g/L) either before or after the operation must receive insulin in order to return to a “normo-glycaemic” status. Oxidation is the best way to destroy pathogens. Hyper-oxygenation (>80 %) should be maintained during surgery and for two hours after the procedure. This is indicated mostly for intestinal and parietal surgeries.

Perfusion with crystalloid solutions should be routinely administered at 10 to 20 ml/kg/hour during any surgery. In veterinary surgery, antibiotics are often indicated, the chosen drug will be injected half an hour before the operation, at double dosage. If the procedure lasts more than an hour, the treatment must be repeated.

✉ Pierre Meheust, Neurology and Surgery Referral, based on a lecture given at the AFVAC Congress, Bordeaux, France, December 2006.



© Dethioux

Guidelines for the vaccination of dogs and cats

compiled by the vaccination guidelines group (VGG) of the World Small Animal Veterinary Association (WSAVA).

A few years ago controversy developed regarding the need for annual booster vaccinations. This controversy originated in developed countries (especially the USA and UK). In response to this a task force was set up to provide guidelines which could be used worldwide. Below is a brief summary of the conclusions of the panel of experts. The guidelines are based on the recommendations of the American Animal Hospital Association and the American Association of Feline Practitioners. In developed countries it is estimated that only 30 – 50 % of the pet animal population is vaccinated.

The concept of “herd immunity” is extremely important and is well known in human preventative medicine. If the majority of a population is vaccinated, the disease won't be able to reach catastrophic proportions. The best example is the eradication of smallpox. We should aim to vaccinate every animal in order to protect the whole population. The VGG has defined the core vaccines which all dogs and cats should receive.

Dog: canine distemper, canine adenovirus, canine parvovirus. Cat: feline parvovirus (pan-leukopenia), feline calicivirus and feline herpesvirus. Of course, according to the specific situation in each country, rabies will be added to the list as well as other contagious diseases (*Leptospira*, *Borrelia*, *Bordetella* or *Chlamydia*). Since the maternal derived antibody levels vary significantly between litters, it is recommended that if the animal can only be given a single dose the vaccination should occur after 16 weeks of age.

Where possible, puppies and kittens should receive 3 consecutive injections with the final one given after 16 weeks of age. After 12 months, all dogs should receive a booster vaccination. This protocol should ensure a solid immunity maintained by

an injection every 3 years. Serological testing is a good way of monitoring the immunological response to canine vaccines. Dogs should be tested at least 2 weeks after the last injection was given.

Vaccination might fail for several reasons which can be classified as follow:

- Neutralisation by the maternal derived antibodies
- Poorly immunogenic vaccine
- Animal genetically a poor responder (i.e. non-responder phenotype in some UK and German Rottweilers)

The duration of immunity can also be evaluated through serological testing. Cost effective tests are currently under development. In cats, the feline herpesvirus and feline calicivirus vaccines provide a limited protection since there are multiple strains of caliciviruses and the herpesvirus will be activated by stress. That means that a “vaccinated” cat can still develop signs of the diseases. The vaccination against panleukopenia is very effective.

After using the recommended primo-vaccination schedule similar to dogs, a first booster should be administered after 12 months and subsequent injections every 3 years. There is limited availability of serological tests in cats. In a shelter environment it is important to achieve a balance between financial constraints and the need to keep the premises as disease-free as possible. It is recommended to vaccinate dogs and cats on admission, repeating the injections on puppies and kittens if possible. Even if vaccinations are not needed every year because the dog/cat has a good immunity, annual health checks are really important and strongly supported by the VGG. Medical records should be kept in accordance to the country laws and adverse events must be reported whether their link with the vaccination is proven or not.

✉ The entire document is available on the WSAVA website: <http://www.wsava.org>

Management of Canine Atopic Dermatitis : the control of secondary infections is paramount.

One of the therapeutic options for the management of CAD is Allergen Specific Immunotherapy (ASIT). Antipruritic, antibacterial and antifungal

drugs are frequently administered simultaneously with immunotherapy protocols.

Twenty seven atopic dogs were enrolled in a study comparing a low dose with a standard dose of ASIT. These dogs were also followed for 9 months in order to evaluate the occurrence of secondary bacterial and yeast infections, otitis externa and the need for antipruritic therapy. Adverse effect to ASIT was also recorded.

There were no statistically significant differences between the effectiveness of the standard and low doses of ASIT (Colombo et al, 2005). Secondary infections were frequent and antibiotics and antifungal treatments were necessary.

74% of the dogs had pyoderma and 66.6% *Malassezia* infections and 44.4% had a combination of these. Regular bath with a therapeutic shampoo (2% miconazole and 2% chlorhexidine, Malaseb®) once or twice a week and ear cleaning solution were required to keep the dogs comfortable. Only 29.6 % of the dogs needed glucocorticoids (oral prednisolone) during the first 6 months of the study to control the pruritus. The effectiveness of the ASIT doesn't seem to be reduced by the administration of the glucocorticoids, bearing in mind that the glucocorticoids were given at the lowest possible dosage (0.5 to 0.75 mg/kg SID tapering EOD*). Adverse reactions to ASIT have been reported: increased pruritus, urticaria, angioedema and more rarely anaphylaxis. In this study, only 18.5 % (5 dogs) developed adverse reactions easily controlled with antihistamine (anti H1). This study is the first “evidence-based” paper demonstrating the need for additional therapy during the induction phase of ASIT.



Cheilitis is one of the clinical signs of canine atopic dermatitis © Dethioux

✉ Colombo S, Hill PB, Shaw DJ, Thoday KL – Requirement for dogs with atopic dermatitis undergoing allergen-specific immunotherapy, *Veterinary Record* 2007, 160, 861-864.

*SID = once a day and EOD = Every Other Day

Zylexis® (Pfizer Animal Health)

a possible adjunctive therapy for calicivirus infection in cats.

Zylexis® (killed parapox ovis virus D 1701) is an injectable immunomodulator originally intended for use in horses as an aid in reducing upper respiratory diseases caused by equine herpes virus type 1 and 4. Zylexis® has been used on 16-17 week old cats experi-

mentally infected with FCV (oro-nasal challenge). The product had no effect on FCV shedding and antibody response but there was a statistically significant reduction in the percentage of days these cats showed signs of ulcers. Zylexis® is considered effec-

tive therapeutically and prophylactically against FCV and can be used concurrently with antibiotics.

Dose: 1 ml/cat SC, the injection can be repeated 3 times at 48 hour intervals.

❑ Source: Raue R et al, Zylexis® - an efficacious treatment for calicivirus infection in cats Poster – Voorjaarsdagen 2007.

Petmap® a long awaited “user friendly” device for the measurement of blood pressure in dogs and cats.

The arterial blood pressure is now recognised as an important parameter in any medical or surgical procedure and even general health screenings. Recent data show that 70 % of cats with high blood pressure have chronic kidney failure (Elliott J). The techniques used for monitoring blood pressure

have not been very practical for the veterinarian in past times. In daily practice, the invasive “tip catheter” (catheter equipped with an electronic pressure sensor inserted into the artery) is seldom used. Vets prefer indirect BP measurements but this process can be time consuming and

requires repeated takes. The new Petmap® oscillometric method gives fast (less than 60 seconds) and reliable results. It can be used on both dogs and cats.

Petmap® is not only easy to use but it's affordable (1490 €).

For further information: www.manomedical.com

Hydrotherapy and treadmills gaining popularity.

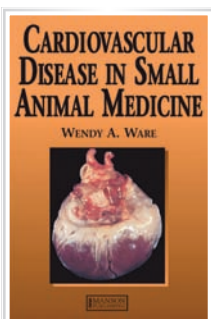
The benefits of physiotherapy post surgery and during rehabilitation are well known. In some countries, specialised rehabilitation centres are now used for dogs and cats. The space constraints and maintenance of swimming pools however prohibit the possibility of most clinics having a swimming area. Hydrotherapy tanks however represent a good alternative for clinics.

The hydrotherapy tanks can be used for physiotherapy and also exercise of

overweight and growing dogs. This is especially useful when the owner is not able to exercise the animal or when the hot (or cold) climate makes it difficult on a daily basis.



Several companies distribute the machines ❑ <http://www.animalrehab.co.uk>- this site offers second hand and reconditioned equipment) and many veterinary schools have dedicated units for example in Dublin, Ireland ❑ http://www.ucd.ie/vthweb/services_hydrotherapy.html. You may want to take the opportunity during the next WSAVA congress in Dublin to have a look at the facilities available.



> BOOK REVIEW

Cardiovascular Disease in Small Animal Medicine
Wendy A Ware, Manson Publishing, London, 2007

ISBN 978-1-84076-076-7

Much more than the usual “how to read an ECG” manual, this recent 396 page publication is likely to find a prime location on the practitioner's bookshelves.

The book is divided into 3 sections, each of them very well illustrated with photos, diagrams and tables. The first part describes in detail how things should be in an ideal cardiovascular system. Before trying to treat pathological conditions, it is paramount to know what is normal and in cardiol-

“Cardiovascular disease in small animal medicine” is a good investment, especially if cardiology is close to your heart.

ogy this is not always straightforward. Of course we all know that the shape of a heart on x-ray varies with the breed but the respiration, the cardiac cycle and the positioning can induce small changes and hide a mild cardiomegaly. Things get even more confusing when you are interpreting echocardiography (especially if you happen to have qualified before ultrasound machines were standard equipment in clinics). Learning to read an ultrasound scan requires a bit of practice so get prob-

ing... but only after you read the 28 pages “overview of echocardiography”. You'll then know how M-mode, 2-D and Doppler can help you to assess the cardiovascular status of your patient. Still, don't dismiss the good old stethoscope and ECG. They remain invaluable diagnostic tools and the practical reminders found in this book might come very handy (how do you stop a cat purring during your auscultation?).

The second section looks at the clinical manifestation of cardiovascular problems. Cough, dyspnoea, ascites, oedema and collapse are just a few examples of

the clinical manifestations of cardiac and circulatory diseases. This will then lead you to the third part of the book where the different conditions are described in detail. Congenital anomalies and acquired heart or cardiovascular conditions are described in a very practical way and the therapeutic options are also explained. Even if cardiovascular diseases often carry a very guarded prognosis, the right treatment allows a good survival time whilst preserving quality of life.

❑ www.mansonpublishing.com

Forthcoming Events**BSAVA Congress**

Birmingham – UK
3d-6th April 2008

www.bsava.com/congress

European Veterinary Conference – Voorjaarsdagen

24th-26th April 2008
Amsterdam – Netherlands

❑ www.voorjaarsdagen.org

AMVQ / FAFVAC

Saint-Hyacinthe - Quebec – Canada
25th-27th April 2008

❑ www.amvq.qc.ca

❑ www.afvac.com

VPAT regional Veterinary Congress

27th – 30th April 2008
Bangkok – Thailand

❑ www.vpathai.org

29th WVC

Vancouver – Canada
27-31 July 2008

❑ www.worldveterinarycongress2008.com

WSAVA Congress

Dublin – Ireland
20th-24th August 2008

❑ www.wsava2008.com

6th World Congress of Veterinary Dermatology

Hong Kong – China
19th- 22nd November 2008

❑ www.vetdermhongkong.com