King Edward Referrals News

Where has the summer gone?

Christmas passed in a flurry, dodging the crowds while waiting patiently for summer to appear. Judging by the cold snap this weekend, it's missed us this year. The 1st quarter passed in a rapid blur with the somewhat fragmented Easter holidays providing a welcome breather. Now the EC-SAVA congress is upon us—with less than 3 weeks left to register. Mike Gray is coming up from Cape Town to speak about GDVs and orthopaedic implant selection. He's a popular speaker and we've missed him in the last couple of years. Liesel van der Merwe is talking about canine and feline urolithiasis and seizure management. Wilhelmien van Wyk will be sharing more of her experience with exotics and there's a new face: Vanessa Mc Clure is a lecturer at OP and will be summarizing what's new in managing parvo cases as well as talking about obesity in small animals. Rick Last is presenting some wet labs that have been very well received elsewhere—and that's just the small animal stuff!

Also note that the IVPD have agreed to send us an acclaimed Australian business manager, speaker and vet to speak to us about business management issues. The registration fees are heavily subsidized by the EC-SAVA branch. In these interesting economic times, who can afford to miss this opportunity!

Hope to see you there...

Case Study no 6: The mystery of the stiff cat

History: This 12 w old kitten was adopted from a shelter approximately 6 weeks prior to presentation. She had an deformity of the forelimbs that caused her to walk on her carpi resulting in large open granuloma. Her owner consulted a human orthopod about this deformity and they made braces for the forelimbs out of thick leather. She was presented because she was stiff, unable to move much and held her tail curled up over her body. The day before she could move normally. She had received all her vaccines and had been wormed several times.

Clinical examination: This was unremarkable apart from the limb deformity and stiffness. Mentally alert. No neurological deficits detected.

Question 1: What is the most likely DD?

Question 2: How would you make the diagnosis?

Question 3: How would you treat this case?

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This photo was taken the next day after hypoxia developed. This posture was noted at presentation. The stiffness and tail flexion were exaggerated if she was stroked.

Answers

A 1: tetanus—generalized form

A 2: There are few other diseases that can look like generalized tetanus. In this case the normal neurological examination made a primary neuropathy unlikely. The absence of muscle pain or swelling and normal CK made a myopathy much less likely. Normal electrolytes ruled out a hyperkalaemic / hypokalaemic myopathy though neither would typically have resulted in such extreme stiffness. Acetylcholinesterase levels excluded organophosphate poisoning.

Confirmation of tetanus is challenging:

- The bacteria are anaerobic and fastidious, thus difficult to isolate from the wound (if the wound is still present)
- Serum antibody levels take a while to increase, few labs assay them
- EMG changes can be very suggestive, but to my knowledge the only facilities that can do you an EMG are Onderstepoort and Frank Kettner at Tygerberg Animal Hospital

Thus most people rely on clinical signs

A3: Treatment of tetanus includes

- Metronidazole is considered the antibiotic of choice to kill clostridia. Metronidazole has a narrow therapeutic dose range in cats—overdose may ppt neurological signs (head tilt, vestibular signs, seizures etc). We used 10 mg/kg i/v bid initially and switched to oral dosing once she was discharged
- Debride and clean any obvious wound.
- Anti-toxin: availability of the equine anti-toxin is limited, but we managed to scrounge a vial of the human immunoglobulin by phoning around the local hospitals. *NB if you need to do this yourself, check that you get the anti-toxin and not the vaccine as many people get confused.*
  The anti-toxin contains serum proteins from a different species so there is a risk of anaphyllaxis. We gave a 0.1 ml test dose i/c first and compared the reaction to an equal volume of i/c saline, then gave the dose slowly i/v with adrenalin handy. Anti bodies injected s/c are absorbed over 2-3 days, so in severe cases eg with respiratory paralysis, i/v treat ment is preferred.
- Sedation: there is no ideal muscle relaxant. Generally chlorpromazine / acp and a **quiet environment** are sufficient in dogs, though phenobarb / sagatal are sometimes required to control seizures. In cats, diazepam may be preferred. NB narcotics should be avoided because of their respiratory suppression
- NURSING. Feeding, turning every 2-4 hrs, making sure the bladder empties, controlling body temperature etc. This case became hypoxic the next day and needed supplemental oxygen for 3 days. Possible complications include aspiration pneumonia, hiatal hernia, oesophageal reflux, megaoesophagus, fractures.

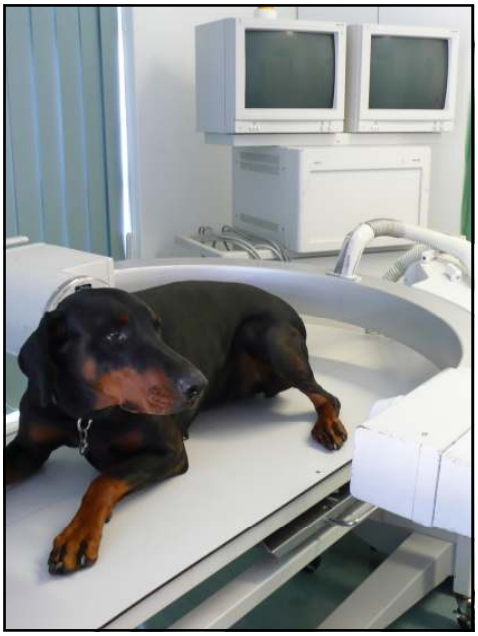
Cat with localized tetanus affecting both forelimbs—*Journal of Feline Medicine and Surgery* (2002) **4,** 209–212

Localised tetanus affecting LH limb—*Journal of Feline Medicine and Surgery* (2002) **4,** 222–224

Generalized tetanus in an adult cat— *Journal of Feline Medicine and Surgery* (2003) **5**, 237–240

Dog with rictus grin typical of tetanus: ears pulled up, lips pulled back and prolapse of the 3rd eyelid —http://communityvet.net/2010/09/canine-tetanus

Comments: This is the 4th case of tetanus in dogs and cats that I've been aware of in the environs of PE in the last 3 years. Cats are 7200x and dogs 600x more resistant to tetanus than horses. An Australian friend tells me that where she practiced near Brisbane, dogs were routinely vaccinated against tetanus to try and decrease cases presenting after being spayed (presumably *Clostridium tetani* was common in the soil and was contaminating the spay wound once the dogs got back home).



Levi got roped into being demo dog. For the souls worried about radiation safety: no, the machine usually lives in the x-ray room and we DON'T point the beam out a window!

Meet our new toy

Southern Cross have very kindly lent us a fluoroscopy unit that was donated to their practice. As you know, fluoroscopy is basically a video x-ray unit. The c-arm is movable and means that it can deliver a horizontal beam. This means we can now do swallowing studies—while the patient is feeding. We're slowly familiarizing ourselves with the machine. **We would like to solicit cases now to gain more experience with it.** Initially we'd like to concentrate on the more straight forward procedures

- Looking for megaoesophagus
- Looking for a collapsing trachea
- Swallowing studies for congenital dysphagias

One we get the hang of these and are more familiar with the machine we hope to be able to offer

- Tracheal and urethral stenting
- Possibly even interventional cardiology (eg ballooning pulmonary stenosis

At the moment, we will perform the procedures at cost

Practical tip of the month

HOW TO DO: Manual platelet counts

When to do:

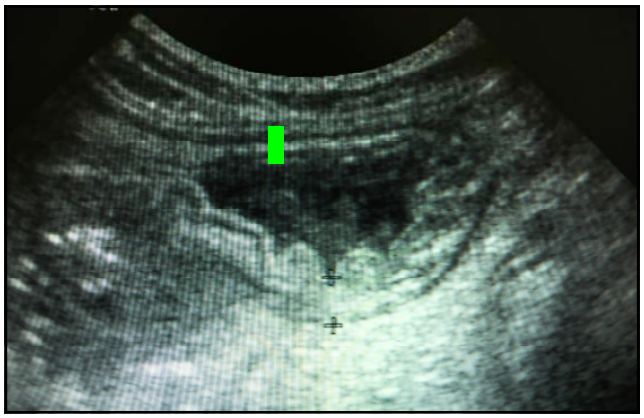
- Patients with clinical signs of small hole bleeds (ie likely thrombocytopenia) —eg epistaxis, petechial haemorrhages in skin / mucosae, melena from SI haemorrhage.
- Patients where the machine says your MCV is ridiculously low—the machine may be having difficulty distinguishing RBC and PLT.

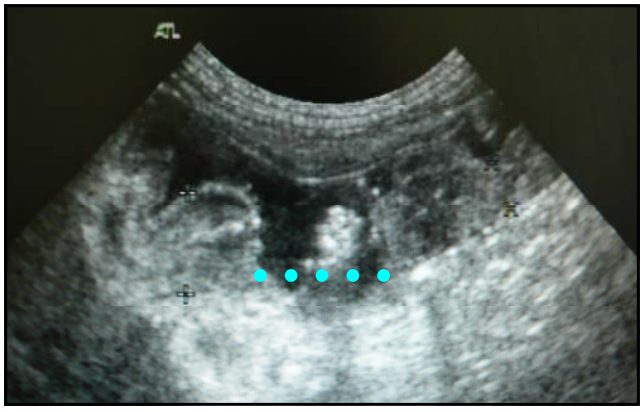
How: Line a 2 ml syringe with heparin by aspirating it straight from the bottle and then squirting it all back into it. You should be left with a miniscule amount in the hub of the needle. Collect a blood sample from the cephalic vein and put a bandage on afterwards—you don't want a huge haematoma there. For the same reason, this is one instance where I would avoid taking the sample from the jugular—because it's much more difficult to stop haemorrhage if it's determined to happen. Draw a small amount of air into the syringe so it's easier to agitate the blood and thoroughly mix it with the heparin. Make a good blood smear with a square feather edge (you don't want to be driving about all over the place looking for the red cell area)

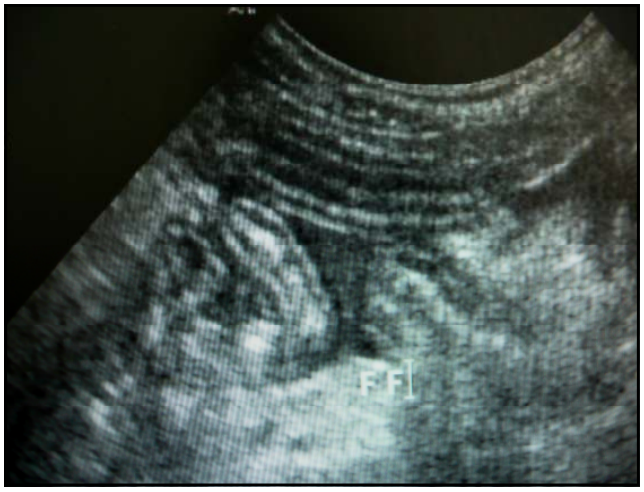
Under the microscope:
Step 1: Under low power, check the feather edge for platelet clumps. If you see them, collect another blood sample.
Step 2: Go to the red cell area (ie red cells lying closely next to each other in a monolayer—non lying over each other). Count all the platelets in 10 high power (100x oil immersion lens) fields. Multiply by 1.5. This is your manual platelet count. This means that if your PLT count is < 3-4 / HPF you have trouble.

Interpretation: If < 50, your patient is at risk of spontaneous bleeding. DD are primary or secondary IMTP and DIC. If you have signs of a small hole bleed but a normal PLT count, consider doing a buccal mucosal bleeding time (for von Willebrand's disease—this is your most common platelet function abnormality)

Care: you can use the heparinised sample for a PCV and total plasma protein but I would not use if for cytology. Heparin can induce cytological changes, particularly in the white blood cells. Obviously it won't affect their number though.







Ultrasound case

History: This 10 year old cat presented with a history of haematemesis, lethargy, hypothermia. Bloods showed a marked neutrophilia, left shift, mild monocytosis and reactive lymphocytes.

Ultrasound: Top image: stomach contains anechoic fluid. The gastric wall closest to the probe (green bar) has normal layering. The far wall (between calipers) has slightly smudged layering and the surrounding mesenteries are very bright.

Middle image: gastric wall between callipers appears thickened with smudged layering (4.4-8.3 mm) Along the blue dots, the gastric wall suddenly disappears. Again, there are lots of hyperechoic mesenteries on the far side of the (absent) gastric wall. Mesenteries appear hyperechoic when they are inflamed or when they are surrounded by free fluid.

Lower image: There are small pockets of free fluid (FF) throughout the abdomen. In this image you can see it lurking between small intestinal loops. The fluid is hypo rather than anechoic consistent with suspended cells, most likely a sterile or septic peritonitis in this case, but this could also (theoretically) be a bloody effusion if you only go by the ultrasound appearance.

Diagnosis: gastric ulcer—either perforated or about to perforate

Outcome: This case had exploratory surgery the same day. A perforated gastric ulcer was confirmed and repaired. The abdomen was flushed with copious amounts of saline. The patient made an uneventful recovery.

Microscope spares

For spare bulbs, we found Francois at Electroquip in 2nd Avenue Newton Park very helpful and reasonable

041 3934855

Newton Park AH

has some compounded 10 mg cyclophosphamide capsules (35x) looking for a new home

Case no 7: A puppy with a murmur

History: A 3 month old Golden Retriever is presented for his last vaccination. On auscultation you detect a new Grade 4/6 harsh systolic murmur loudest over the left heart base. Breathing rate is normal, the pup is growing and feeding normally, is not coughing and appears to exercise normally

Question 1: How are heart murmurs graded?

Question 2: When should you worry about a heart murmur in a puppy / kitten?

Question 3: How should this case be worked up?

Case 7 Answers

A1: Grade 1/6—need to listen carefully for ages to be sure there's a murmur
Grade 2/6— murmur is clearly audible but softer than the normal heart sounds
Grade 3/6—murmur is of the same intensity as the normal heart sounds
Grade 4/6—murmur is louder than the normal heart sounds
Grade 5/6—murmur is louder than normal heart sounds AND you can palpate a thrill (like sand running through your hands) if place your hands on the chest wall over the heart
Grade 6/6—the murmur is so loud you can hear it without the aid of a stethoscope

Murmurs should also be described by their position (ie over which valve they're loudest), the area over which they radiate (on the thorax, also remember to check the carotids and the top of the head), their pitch (high, harsh), when they occur in the cardiac cycle (ie systolic, diastolic, both, continuous / machinery), when they occur in systole (early, mid, late, holosystolic) and whether their intensity varies with the heart rate. All these should help you narrow down the cause of the murmur.

A2: Any diastolic or continuous murmur should be followed up. Loud systolic murmurs (4/6 or above) should be investigated especially if they are harsh rather than high pitched, if they radiate widely or becoming louder with time. Obviously any murmur associated with clinical signs (poor growth, poor exercise tolerance, coughing, cyanosis, syncope) should be investigated, but you're more likely to be able to treat the problem if you identify it before clinical signs develop.

Innocent murmurs are usually Gr1-3/6, localized, high pitched early systolic murmurs that localize to the aortic / pulmonary valve. *They should have disappeared by the time the pup / kitten presents for neutering at 6 months of age*.

A3: History and a full clinical examination concentrating on the cardiac system but eliminating anaemia and fever as a cause for the murmur should be done in all cases. Good quality radiographs are useful for detecting pulmonary oedema and looking for signs of pulmonary over- or undercirculation. They can indicate chamber enlargements / post stenotic bulges that help narrow down the DD list. The diagnosis of congenital cardiac disease is rarely made with radiographs alone, though. ECG is particularly useful to identify associated rhythm abnormalities and guide their treatment. Ultrasound is much more sensitive than ECG or radiography for detecting chamber enlargements. In addition, ultrasound can help assess myocardial function and Doppler will usually localize the source of the murmur. If cost constraints limit a work-up, ultrasound is going to give you the most information.

A patent ductus arteriosus
typically results in > 4/6 continuous (= machinery) murmur loudest under the left armpit ie over the pulmonary valve. It can be surgically ligated and patients don't even have to travel to CT / JHB for the surgery. If ligated early, it prevents heart failure developing and animals lead a normal life. If left, affected animals usually develop either CHF or cyanosis and exercise intolerance (if the shunt reverses and starts going right to left).