

King Edward Referrals News



It's Christmas already!



The last two months have flown by and the silly season is upon us while we're all still waiting for the rain and the summer to appear—ideally in that order. I would like to take this opportunity to **thank all of you** for your support during the last year. The practice has grown appreciably, we've seen some cool cases and met some interesting owners and wonderful animals. I hope we've managed to strike a balance between good medicine, practicality and what your clients can afford.

I'd also like to take this opportunity to invite comment: if there's anything you didn't like about our service or would like us to do differently, please e-mail me on marlies@wol.co.za, call me on 041 3654184 or if you prefer, leave a message with sue at kereferrals@wol.co.za.

There's been concern voiced from several quarters that I 'don't work weekends'. Just to put that baby to rest: I work most weekends. I might not be seeing new cases, but if I have hospitalised patients, I'm on duty from 5 am to 10 pm, doing all the veterinary and nursing care. Otherwise, I'm preparing lectures for you. Or giving lectures. To give you an idea: preparing an 'easy' topic will usually take about a weekend for the power-points and a weekend for written notes. A topic that I have to review extensively will take significantly longer. I help out with the spay campaigns, get roped into editing / writing article and then there's my personal favourite: the books.

But hey, if you don't think I work hard enough, send some more cases ☺!

This brings me to the next point: **Christmas working hours—see box** ⇌

It remains for me to wish you ... whatever your heart desires most in the coming weeks

Regards

Case 5: Why you should ALWAYS wash your hands before eating!

A 11yo ME previously healthy Toy Pom presented because he'd had three seizures over 3 days. Phenobarbitone was prescribed and although he showed typical phenobarb side effects ie pp and drowsiness, no further seizures occurred over the following week. He had received his annual vaccinations and was dewormed a week before the onset of signs. The following abnormalities were noted: General clinical examination - enlarged left testicle. Neurological examination - he drifted to the right, had a hypermetric LF and decreased conscious proprioception on the LF and LH. An Idexx seizure profile showed no significant changes.

Q1: Which part of the CNS do you think is affected? Derive a DD list

Q2: Which is the next most logical test?

Index

Page 1-3: Case study

Page 4: Announcements

Christmas opening times

We will be open on normal working days throughout the festive season

From 8.30 am to 5 pm

We will be closed on public holidays except for emergencies

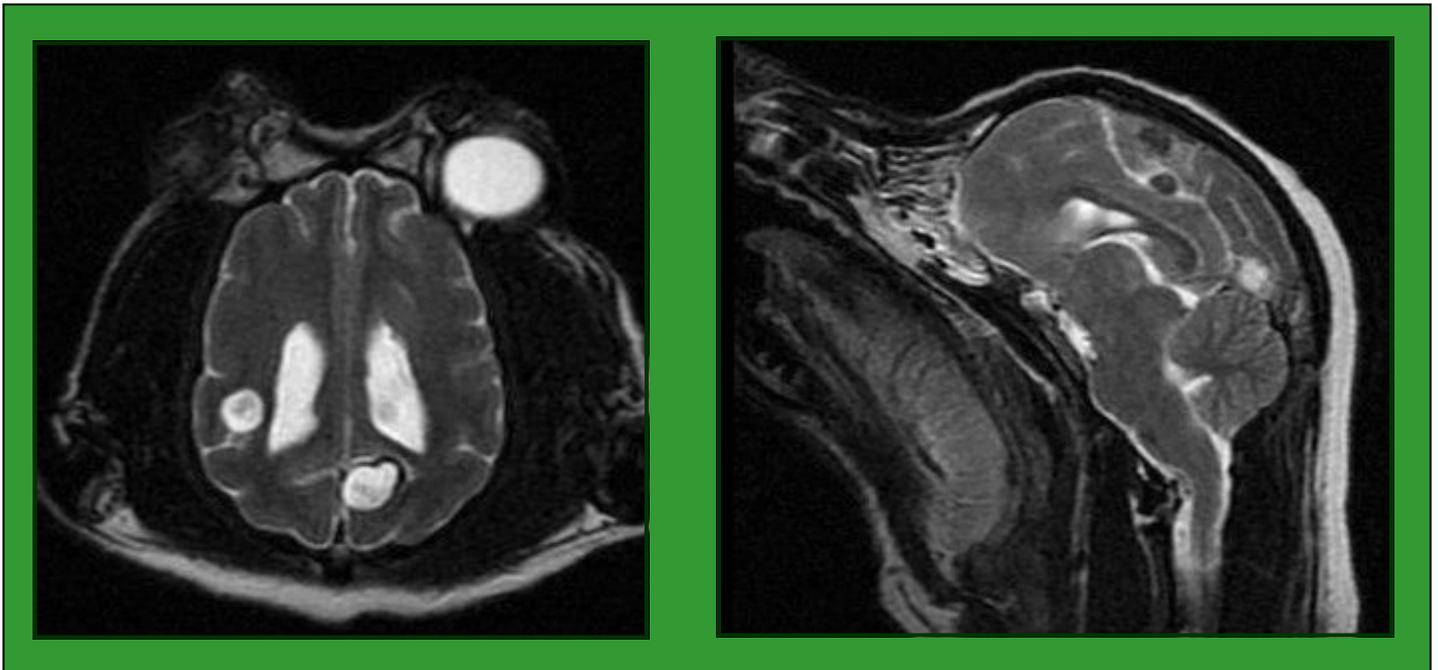
We will close at 2 pm on the 24th December unless there's drama

A1: Lesion localisation: Lateralising, probably right sided cerebral. The hypermetria suggests cerebellar involvement as well, so this could also be a multifocal problem.

DD Tumour most likely, alternatively stroke (more typically vestibular signs in small dogs), GME, distemper (no contact), toxoplasma/neospora (no raw meat/ cat poo), thiamine deficiency (normal dog food though).

A2: An MRI scan. Although a CSF tap is cheaper, you should always do an MRI scan first if you're planning to do both - especially when a brain tumour is on your DD list. An MRI will allow you to detect raised intracranial pressure (ICP). If you do a CSF tap when ICP is increased you risk causing herniation of the cerebellar vermis through the foramen magnum. This compresses the brain stem (and with it the respiratory centres) and can cause sudden death.

Q3: These are T2 weighted image of this patient's brain. Fluid is bright (check the eyes for fluid). Take a guess at the diagnosis



A3: There are 2 large hyperintense cerebral cysts on the left image. If you look carefully you can see a 3rd, hypointense one just medial to the right ventricle. In the right image there are 2 hypointense cysts in the cerebral cortex, a smaller one in the brain stem and you can see the edge of one of the hyperintense ones just above the cerebellum. (I counted 13 in total in this patient). These images are highly suggestive of neurocysticercosis (tapeworm cysts in the brain). The only DD would be a metastatic tumour that is forming multiple cystic structures in the brain. A CSF tap would not help to differentiate the two.

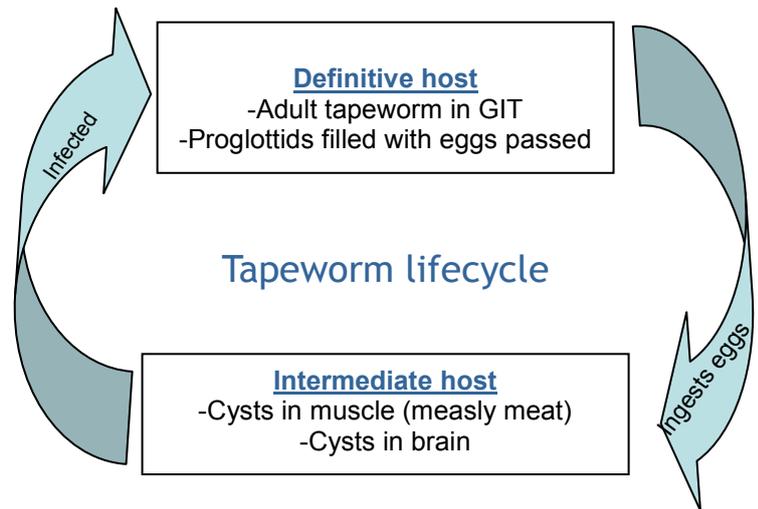
Discussion: Neurocysticercosis is rarely described in dogs but is commonly diagnosed in people in the Eastern Cape. It is the most common infectious disease of the human brain. It is most commonly caused by *Taenia solium* in people. This parasite is common in the Eastern Cape because pigs (its intermediate host) are an important source of meat in the outlying areas. *T. solium*'s usual lifecycle goes like this: Adult tapeworms release proglottids filled with ova into the faeces / environment (*Proglottids* of the related *T. saginata* are known to creep down the thighs of infected people. Workers at a feedlot should always have their overalls tucked into their boots to prevent the proglottids landing up in cattle feed and causing measles meat.) As these areas are usually not connected to municipal sewerage systems, free range pigs may come into contact with human faeces and develop cysts (measles) in the muscles. Pigs are usually slaughtered at home rather than at an abattoir so the meat is not inspected. If measly meat is not frozen or properly cooked, cysts survive and result in **taeniasis** (ie an adult tapeworm in the SI) in the human that eats it, perpetuating the life cycle. Neurocysticercosis develops when a human comes into contact with infected faeces and becomes an accidental intermediate host. A source of direct human expo-

sure to ova would be if 'night soil' is used to fertilise crops, faeces contaminating water sources or if people don't wash their hands after going to the loo.

Humans are occasionally infected by tapeworm species that have the dog / canids as their definitive hosts. The disease is then called coenuriasis if it's a *Taenia* sp and echinococcosis if it's caused by an *Echinococcus* sp. The most likely culprits are *T. multiceps* and *E. granulosus* in SA. Around 100 cases of coenuriasis have been described in the literature ever - so it's rare. You may be able to tell the difference to neurocysticercosis because with these 2 species the cysts contain up to 100 protoscolices whereas the *T. solium* ones contain only one. To prevent neurocysticercosis in people you need to prevent ingestion of HUMAN faeces, while to prevent coenuriasis and echinococcosis in people you need to prevent ingestion of DOG / CANID faeces. Eating measly meat could cause infection with adult tapeworm, but does not cause brain cysts.

As the disease is rarely diagnosed in dogs, we don't know which tapeworm species is most commonly involved. It appears unlikely to be *Dipylidium*. Prevention of infection is limited to preventing ingestion of faeces from humans / other canids (directly or via a contaminated feed or water source) and deworming regularly.

The cysts usually take months or even years to enlarge to a size that the intermediate host becomes symptomatic. Many intermediate hosts remain asymptomatic and cysts may be



incidental findings on PM. If the cysts are in the brain, symptoms may develop when:

- the cyst enlarges sufficiently to obstruct flow of CSF causing signs of raised intracranial pressure
- the parasite dies, triggering an inflammatory reaction in the surrounding brain tissue ie causing CNS oedema, resulting in signs of raised ICP or of seizures. This may be triggered by treatment.
- the parasite calcifies and may then serve as an epileptic focus

Diagnosis: Although MRI images are often very suggestive, CNS metastases can look very similar to neurocysticercosis. If different stages of cysts are evident on the MRI, neurocysticercosis becomes highly likely. As you'll understand from the above discussion, there is no point in looking for tapeworm eggs in a faecal float if you want to r/o neurocysticercosis. Aspiration of a protoscolex or histopath of a resected cyst would be definitive but is not practical in our canine patients. A tumour hunt (thorough clinical examination followed by thoracic radiographs and abdominal ultrasound or whole body CT pre and post contrast and aspiration/biopsy of any suspect lesions) would be options if metastatic disease remains a significant concern.

Treatment: Treatment of dogs is extrapolated from humans:

- If the parasites is dead, manage clinical signs ie give anti-epileptic treatment
- If the tapeworm is alive and not likely to obstruct CSF flow, albendazole or praziquantel is prescribed. Research in humans has shown that treatment decreases the size of the cysts in the brain and decreases the need for continued seizure medication, but does not prevent seizures in all cases. There is more experimental evidence for albendazole killing the worms, but the risk of drug side effects (hepatitis, pancytopenia) is higher. Patients in the Eastern Cape are treated with praziquantel. In some areas people are hospitalised for observation while being treated. In other areas (like around PE it appears) people are sent home with the pills.
- If a cyst is likely to obstruct CSF flow a shunt is placed and the cyst is surgically removed

Follow up: This patient was treated with praziquantel. When we contacted the owner 3w after diagnosis, the patient's deficits had resolved and there had been no further seizures. In an ideal world we'd do an MRI in 6 months and confirm that the cysts have disappeared / calcified. Practically, if we're wrong and this dog actually has brain mets, signs will progress.

Next PE Clinicians Group Meeting

Lucie has contacted a bunch of companies about sponsoring next year's meetings. The response has been overwhelmingly positive. We're planning 8 meetings— **every month** barring January, May (EC -SAVA), October (WVA in Cape Town) and December... so no-one can say that they don't have opportunities on your doorstep to collect CPD points. We're finalizing topics this week, so if you have any requests, now is your time to speak!

More CPD points

I have spoken with the SAVC and Madaleen Schultheiss. If there's an interest, I could put 10 multiple choice questions together for each talk. They would appear at the end of your lecture notes. If you wanted to earn more CPD points, you'd need to go online to answer the questions. They get checked and you receive an additional point and can print out a certificate if you get 8 or more / 10 correct. The guys that administer the site charge for this service, so there'd be a small fee attached—around R50.

WOULD YOU BE INTERESTED IN THIS OPTION?

Please e-mail me on marlies@wol.co.za

Mount Croix

Still

has Cisapride 10mg/ml 50 ml available.



You all knew cycads were poisonous—here are the details



Toxin: There are 2 groups. Macrozamine, cycasin and neocycasin are broken down to MAM (methylazoxymethanol) by gut bacteria. MAM alkalinizes nucleic acids and proteins and causes the signs of liver failure (vomiting +/- melena, polydipsia, icterus etc.) MAM is also carcinogenic. In addition BMAA is an amino acid produced by blue-green algae that live in the roots of some species. It's thought to be responsible for the neurodegenerative changes observed in people who regularly eat the prepared seeds.

Which bits of the plant: all bits. The seeds are most poisonous. 1-2 are sufficient to kill a dog

Which genera: Encephalartos, Stangeria (both endemic), Cycas (Cycas revoluta is also called a sago palm or sago cycad. It's commonly sold in nurseries and is endemic to Japan—so you don't need a permit to keep it)