

18 August, 2017

Dear Russell,

Thank you for referring Jiminy Vale, a 6 months 2 days, Male Neutered Domestic Short Hair. Jiminy presented to the Small Animal Specialist Hospital on 17-08-2017 to Internal Medicine. Thank you for trusting us with Jiminy's care and allowing us to work with you on this case.

Please find below a summary of Jiminy's visit including diagnostic tests and assessment.

Client Details

Name Mrs Vale, Janice
Address [REDACTED]
Phone [REDACTED]

Patient Details

Name Jiminy
Species Feline
Breed Domestic Short Hair
Age 6 months 2 days
Sex Male Neutered
Referral Russell Barnett - Vineyard Veterinary Hospital

Presenting Problem

Mandiblar lymphadenopathy

Past Pertinent History

VAX history unknown from record
 6 July - cervical swelling, suspected cat fight - dispensed clavulox 50mg BID
 10 July - enlarged lymph nodes (suspect submandibular, not specified), FeLV/FIV negative - no specific treatment
 14 July - ulcers noted on tongue, gums injected - convenia injection administered. Otherwise well, noted to be snuffly. no nasal discharge
 Referred for investigation

History

Current history:
 BIOP from rescue - 6/7 (6 weeks) ago. Rescue agency.
 Went to the vet the next day - went to Box Hill Vets - ddx: infection - treated with amoxyclav. Improved on antibiotics - but not resolved.
 FIV / FeLV testing negative
 Introduced to cats in the household.
 Treated with convenia - slight improvement. Sneezing less, and snuffling less. Then deteriorated again. He was teething at the time.

BAD BREATH

No nasal discharge
 Eats well
 Running around playing. Very happy little cat. Snuffles constantly. Sounds like stertor - intermittently - especially when resting.
 Sometimes snores.

Acquired as kitten.

V/D/C/S: No vomiting really. No diarrhoea. Sneezing - 4-5 in a row. Sometimes a slight cough with it too.

PU/PD:

Appetite: Very good
 Diet: Raw meat (kangaroo, human steak, chicken wing, BARF rabbit), dry meat, wet food. Predominantly commercial Royal Canin foods.
 Sometimes eats pumpkin.

Recent weight changes if any: Weight

Current medications / supplements: No medications / supplements at the moment (was treated with Convenia and Clavulox)

Prior medical problems: No other med issues before

Any recent anaesthesia: No GAs - apart from castration

Vaccinations x2 prior to getting him.

Indoor/outdoor: Indoor - with catmax outside.

FIV/FeLV status: NEGATIVE

Specialist Medicine Service including endoscopy, advanced imaging techniques (digital radiography, ultrasound and CT) and critical care

Specialist Surgery Service Specialist Neurology Service Specialist Ophthalmology Specialist Anaesthesia

Other pets in household: another cat - a little overweight.

Nephrotoxin access (NSAIDs, lilies, ACEi): None

Weight 3.72kg.

Physical Exam

- Mentation: BAR - very interactive and alert
- Body condition: 5 /9
- Oral examination: There was grade 0/4 periodontal disease. +++++ Gingivitis. No mucosal ulcerations detected. No pain on opening mouth. Soft and hard palate normal. Mucous membranes pink and moist. Capillary refill time 1-2 seconds. Halitosis ++
- Ears: No inflammation of external ear canals.
- Eyes: Palpebral fissure normal size. Pupils mid size and central. Conjunctiva not inflamed.
- Cardiovascular: Cardiac auscultation revealed no systolic murmur. No gallop rhythm. Good pulse pressure. HR=PR. No arrhythmia
- Respiratory: The lungs sound normal. There was MILD upper respiratory noise
- Musculo-skeletal: Ambulatory. No lameness noted. No joint abnormalities. No neck pain on manipulation. No spinal pain on manipulation.
- Neurological: Cranial nerve tests normal - palpebral reflex, menace, gag, facial sensation, facial symmetry normal. Conscious proprioception normal. Voluntary movement, deep pain and superficial pain present four limbs. Normal gait. Patella reflex normal.
- Lymph nodes: Peripheral lymph nodes normal size, shape and consistency - apart from mild bilateral popliteal LN enlargement, and moderate - marked mandibular LN / SG enlargement.
There was also thickening the cervical oesophagus.
- Abdominal palpation: Soft and comfortable. No masses or organomegaly detected.
- Urogenital: Bladder soft and comfortable. Kidneys symmetrical and normal size, not painful.
- Integument: No ectoparasites detected. Good haircoat. Normal skin turgor.
- Rectal exam: Rectal examination was normal.

Assessments

This is an interesting case, and there are several body tissues which are affected.

Bilateral swelling may be due to submandibular lymphadenomegaly or salivary gland enlargement. Enlarged submandibular lymph nodes may be reactive (inflammatory secondary to foreign body, viral disease including FCV, FHV1, FIP, bacterial disease including mycoplasma, chlamydia, fungal disease, protozoal disease) or infiltrative (lymphoma). Sialadenitis of submandibular salivary glands is also possible. The stertorous breathing and history of 'snuffles' is reflective of disease of the nasal cavity or nasopharynx. Inflammatory/infectious disease processes or infiltrative disease is considered possible in this instance.

The marked halitosis is most likely secondary to stomatitis, which may be secondary to infectious disease (in particular viral disease, including FCV, HFV) or may be due to inflammatory/immune disease.

To investigate pathology of respiratory tract a head and thoracic CT was performed under general anaesthesia. A laryngeal examination at the time of induction was unremarkable. There was no nasal cavity pathology on CT, however submandibular lymph node enlargement was noted. Aspirates were obtained in order to investigate for reactive vs infiltrative disease, with external cytological review pending. In addition to this the thymus was prominent and there was enlargement of bronchotracheal lymph nodes. There was also a bronchiointerstitial change in several regions of the pulmonary parenchyma. A blind BAL was performed with this fluid submitted for cytology and culture. Following this gingival wedge biopsies were obtained, and have been submitted for histopathology. Tissue culture +/- PCR may follow given these results. A total annual health profile is pending. Given the results from today, an inflammatory/infectious disease process is considered likely at this point in time.

Jimmy recovered uneventfully from his anaesthetic and was oxygenating appropriately on room air. No specific treatment has been instigated at this point in time.

The cause of his biochemical hepatopathy is unclear at this time. Involvement of the primary disease (particularly systemic viruses) and the liver is possible. This needs to be monitored closely at this time.

Specialist Medicine Service including endoscopy, advanced imaging techniques (digital radiography, ultrasound and CT) and critical care

Specialist Surgery Service Specialist Neurology Service Specialist Ophthalmology Specialist Anaesthesia

Phone: 02 9889 0289 Fax: 02 9889 0431 www.sashvets.com

Level 1, 1 Richardson Place, North Ryde NSW 2113 PO BOX 157, North Ryde NSW 1670 ABN 22 473 008 091

Diagnostic Imaging Report

CT Examination

Region: Head/Thorax

Examination:

- Pre-contrast medium-frequency soft tissue reconstruction algorithm thorax and abdomen
- Pre-contrast high-frequency lung reconstruction algorithm thorax.
- Post-contrast medium-frequency soft tissue reconstruction algorithm thorax and abdomen

Indication:

Findings:

- Head
 - Bilateral, relatively symmetrical enlargement of the mandibular (10mm) and medial retropharyngeal (6mm) lymph nodes.
 - The lymph nodes are reasonably well-defined and rounded and have slightly patchy contrast enhancement.
 - Regional nasal concholysis of the rostral aspect of the right nasal cavity, with mucosal thickening and contrast enhancement without mass effect.
- Thorax
 - Slight enlargement of superficial cervical lymph nodes.
 - Rounded soft-tissue attenuating material in the cranial mediastinum, extending from the thoracic inlet to the cranial aspect of the heart.
 - This is most likely compatible with thymus.
 - Both sternal lymph nodes are visible and are slightly rounded (4mm diameter).
 - Generalised slightly patchy pulmonary parenchyma, mostly bronchial thickening, with slight peripheral interstitial pattern.
 - Complete collapse of the caudal lobe of the left cranial lung.
- Cranial abdomen
 - Possible rounded hepatic margins.
 - Generalised dilatation of the common bile duct up to 4.8mm diameter, with filling of the gallbladder.
 - Suspicion of wall thickening of the gallbladder and common bile duct.

Conclusions:

1. Mandibular and medial retropharyngeal lymphadenopathy.
 1. Consider probable inflammatory/infectious disease (such as FIP), or secondary to generalised inflammatory disease
2. Probable persistent thymus due to patient's young age.
3. Generalised pneumonopathy.
 1. Consider most likely inflammatory/infectious bronchitis / pneumonitis.
 2. Non-specific changes, but generalised.
4. Possible dilatation of the common bile duct
 1. This may be a normal variant
 2. May represent inflammatory/infectious disease.

Additional Comments:

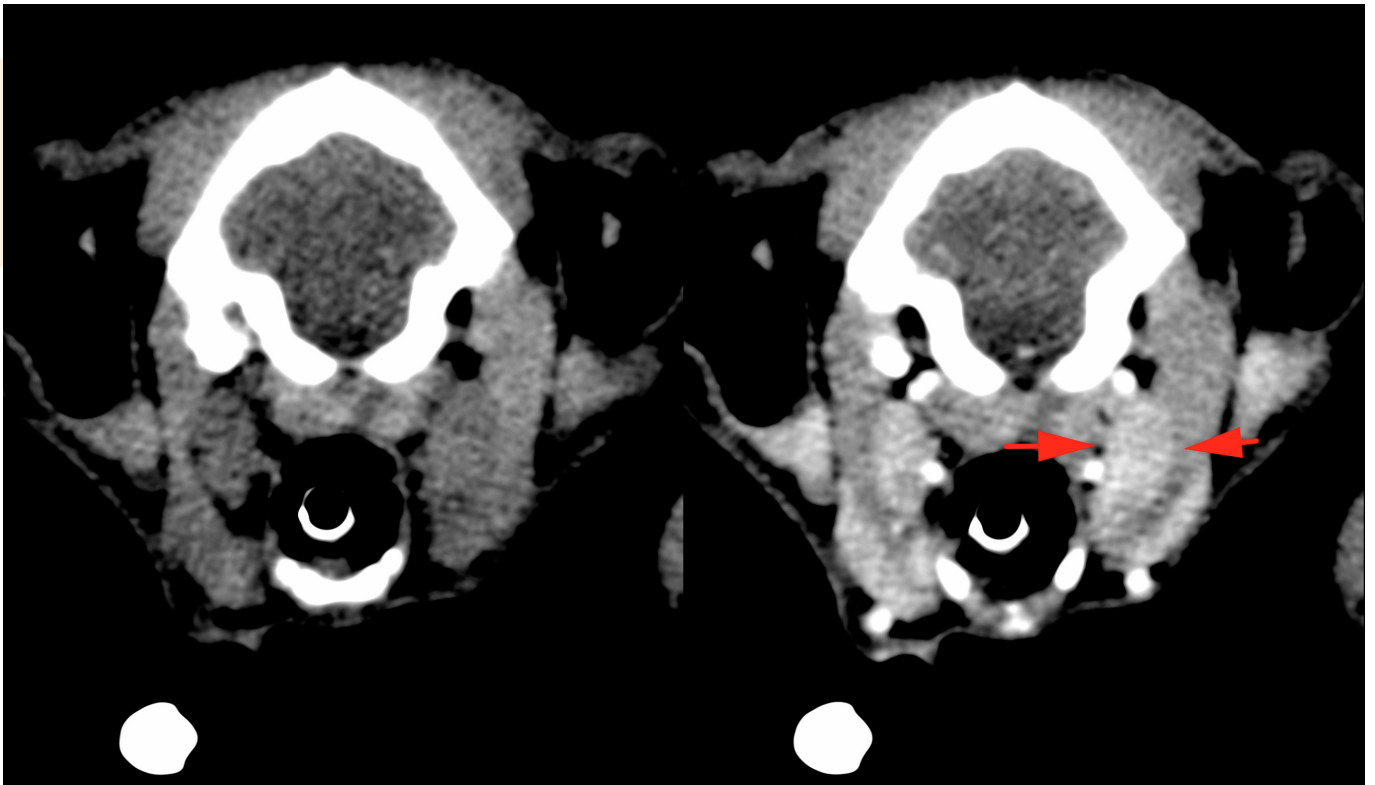
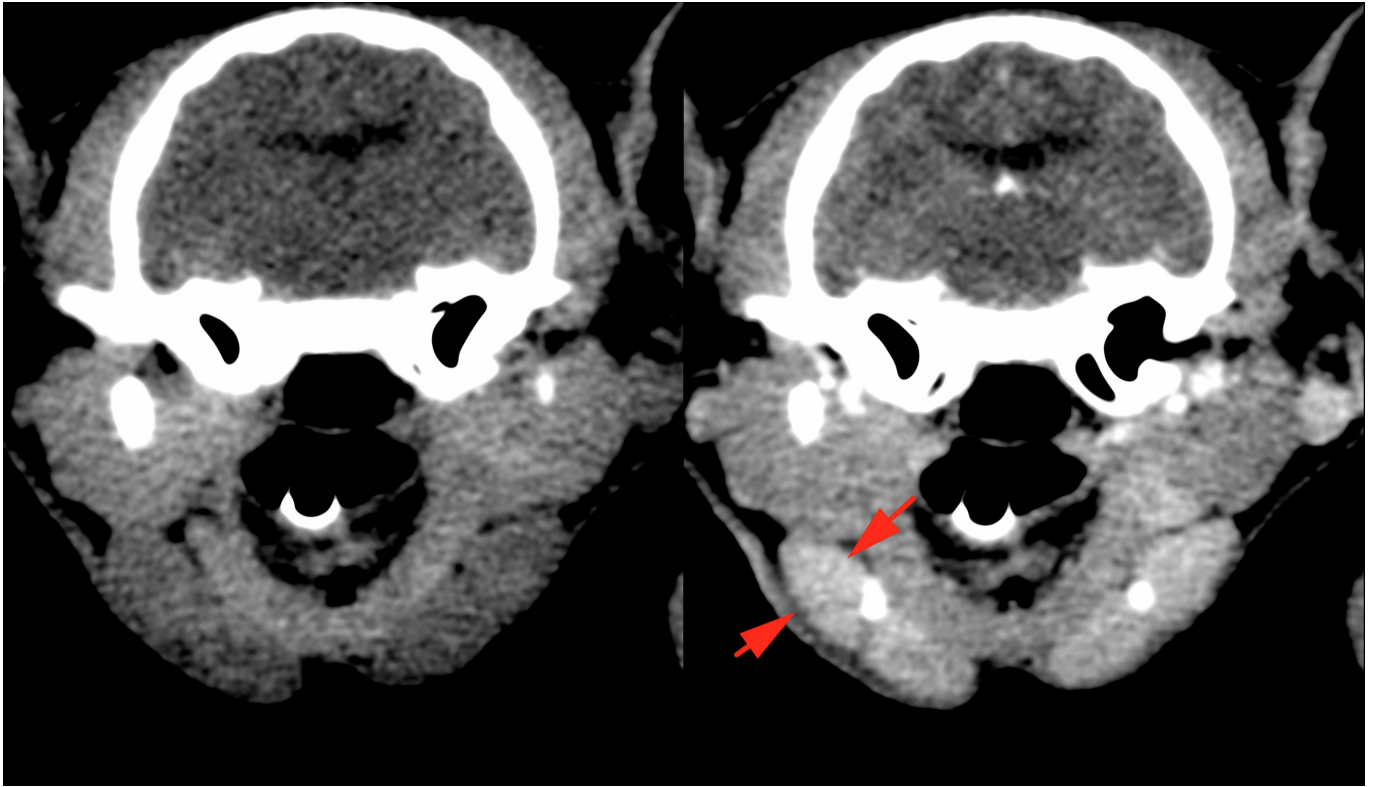
- The abnormalities on this examination are non-specific.

Procedures:

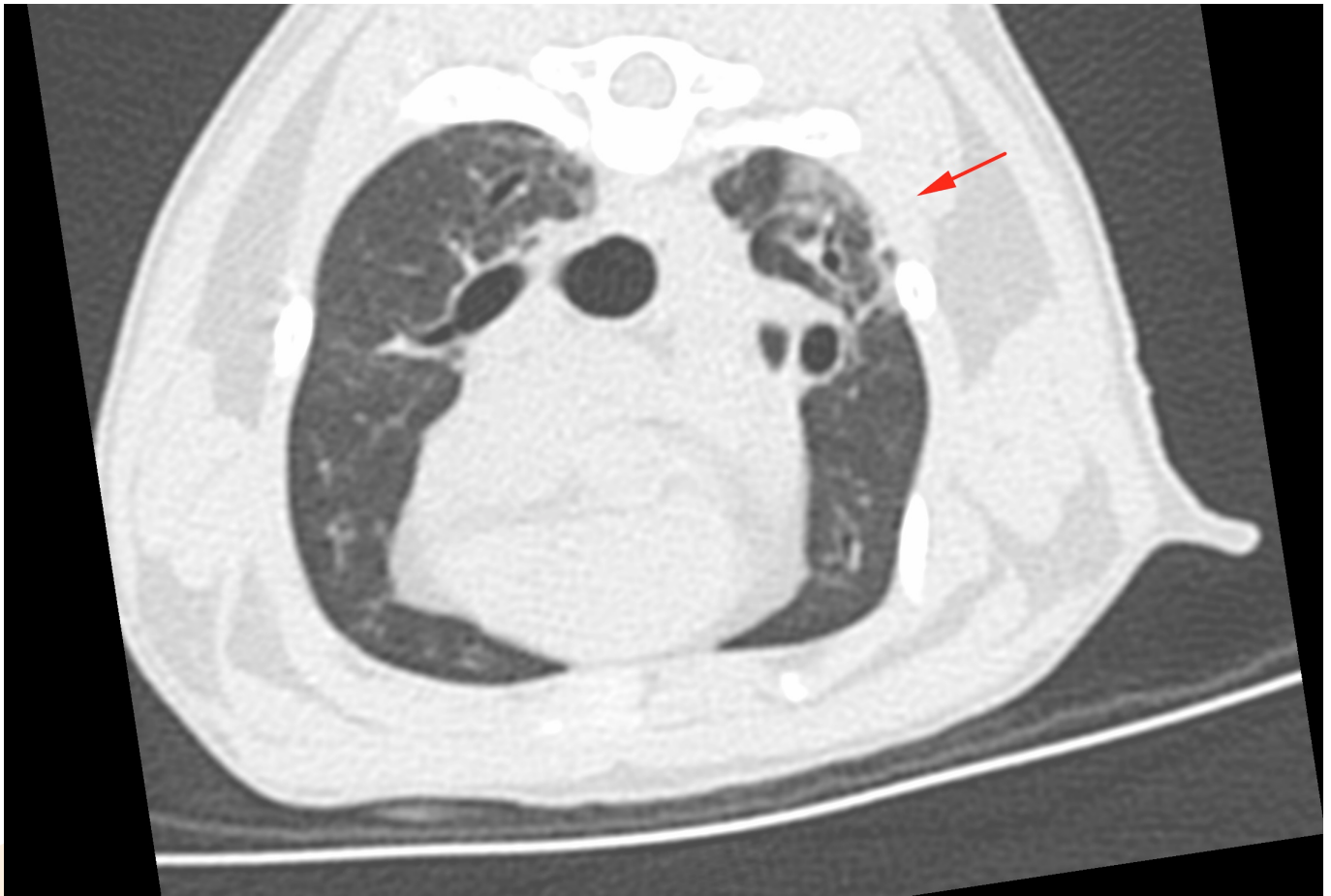
- None

Relevant Images:

Mandibular and medial retropharyngeal lymphadenopathy.



Patchy consolidation of the lung



Dr. Katharina Flatz

Dr. med. vet., FTA Diagnostic Imaging and Radiation Therapy, DipECVDI

Richard Lam

BVSc (Hons 1), MANZCVS (Radiology), MVetMed, MRCVS, DipECVDI

European and RCVS Recognised Specialist in Veterinary Diagnostic Imaging.

Diagnostic Results

BRONCHOALVEOLAR LAVAGE:
CYTOLOGY REPORT

SAMPLES

BAL : light productivity

?Lymph nodes : L and R mandibular

OBSERVATION

BAL
Direct and cytocentrifuged smears were examined. Thin mucus strands entrap numerous lytic and degenerate cells. Cell types are difficult to identify but probably include mainly neutrophils with lower numbers of hemosiderin-laden macrophages and eosinophils. Several bacterial rods are evident, often in aggregates as if they had been present intracellularly. The smears also include low numbers of squamous epithelial cells.

R mandibular lymph node

One smear contains numerous clusters of well-differentiated vacuolated and nonvacuolated salivary gland epithelial cells in a background of blood. The second smear contains reasonable volumes of lymphoid tissue - 88% small lymphocytes, 12% medium lymphoid cells, scattered large lymphoid cells and the occasional neutrophil. Several small lymphoglandular bodies are present in the background.

Specialist Medicine Service including endoscopy, advanced imaging techniques (digital radiography, ultrasound and CT) and critical care

Specialist Surgery Service Specialist Neurology Service Specialist Ophthalmology Specialist Anaesthesia

Phone: 02 9889 0289 Fax: 02 9889 0431 www.sashvets.com

Level 1, 1 Richardson Place, North Ryde NSW 2113 PO BOX 157, North Ryde NSW 1670 ABN 22 473 008 091

L mandibular lymph node

Both smears consist of well-differentiated salivary gland epithelial cells in a background of blood.

COMMENT

Cell types are difficult to identify in the BAL but neutrophilic inflammation is possible. Bacteria are present but, due to the high incidence of contaminants in respiratory washes, significance is best assessed after the identity of the bacteria is known - culture is underway. The aspirate of the left mandibular node and one of the aspirates of the right mandibular node have actually sampled the mandibular salivary glands. This may explain why it was thought that the mandibular nodes were enlarged but not the retropharyngeal. One of the smears of the right mandibular node contains lymphoid tissue and suggests that the lymphoid tissue is reactive.

REPORTED BY

Patricia Martin BVSc MVSc

HAEMATOLOGY

Test	Result	Alert	Units	Reference Range
*RBC	6.6		x10 ¹² /L	4.9 - 10.0
*HAEMOGLOBIN	95		g/L	77 - 156
*HAEMATOCRIT	0.29		L/L	0.25 - 0.48
*RETICULOCYTE %	0.6	High	%	0.0 - 0.4
*RETICULOCYTE ABS	40		x10 ⁹ /L	3 - 50
*MCV	44		fL	43 - 55
*MCH	14		pg	13 - 17
*MCHC	328		g/L	282 - 333
*PLATELET COUNT	355		x10 ⁹ /L	300 - 800
*WBC	16.8		x10 ⁹ /L	5.5 - 19.0
*NEUTROPHILS%	64		%	
*NEUTROPHILS	10.8		x10 ⁹ /L	2.0 - 13.0
*LYMPHOCYTES%	24		%	
*LYMPHOCYTES	4.0		x10 ⁹ /L	0.9 - 7.0
*MONOCYTES%	6		%	
*MONOCYTES	1.0	High	x10 ⁹ /L	0.0 - 0.6
*EOSINOPHILS%	6		%	
*EOSINOPHILS	1.0		x10 ⁹ /L	0.0 - 1.0
*BASOPHILS%	0		%	
*BASOPHILS	0.0		x10 ⁹ /L	<= 0.1
*BLOOD SMEAR EXAMINATION	Automated CBC.			

BIOCHEMISTRY

Test	Result	Alert	Units	Reference Range
*SODIUM	143	Low	mmol/L	144 - 158
*POTASSIUM	5.1		mmol/L	3.7 - 5.4
*CHLORIDE	107		mmol/L	106 - 123
*BICARBONATE	16		mmol/L	12 - 24
*NA:K RATIO	28.0	Low		29.0 - 40.0

Specialist Medicine Service including endoscopy, advanced imaging techniques (digital radiography, ultrasound and CT) and critical care

Specialist Surgery Service Specialist Neurology Service Specialist Ophthalmology Specialist Anaesthesia

*ANION GAP	25.1		mmol/L	15.0 - 31.0
*GLUCOSE, FL.OX	5.5		mmol/L	3.2 - 7.5
*GLUCOSE, SERUM	3.6		mmol/L	3.2 - 7.5
*UREA	11.8		mmol/L	5.0 - 15.0
*CREATININE	0.09		mmol/L	0.08 - 0.20
*SDMA	19	High	ug/dL	0 - 14
*CALCIUM	2.2		mmol/L	2.1 - 2.8
*PHOSPHATE	3.0	High	mmol/L	1.0 - 2.3
*CA:P RATIO	0.7	Low		1.1 - 2.3
*PROTEIN, TOTAL	70		g/L	60 - 84
*ALBUMIN	28		g/L	25 - 38
*GLOBULIN	42		g/L	31 - 52
*A:G RATIO	0.7			0.5 - 1.1
*BILIRUBIN, TOTAL	3		umol/L	0 - 7
*ALP	77	High	IU/L	5 - 50
*AST	88	High	IU/L	2 - 62
*ALT	151	High	IU/L	19 - 100
*CK	179		IU/L	64 - 400
*CHOLESTEROL	2.5		mmol/L	2.2 - 5.5
*GAMMA GT	1		IU/L	0 - 5
*SAMPLE APPEARANCE	Nil haemolysis			
*	Nil lipaemia			

*T4 TOTAL 29 nmol/L 10 - 60

Pending Diagnostic Requests

- Histopathology- 1 specimen (Sydney University) - A biopsy was taken of the gingiva:
- C&S (Sydney University) from BAL.

Discharge Summary

18 August, 2017

Discharge instructions for **Jiminy Vale**

Dear Janice

Jiminy presented to Small Animal Specialist Hospital for evaluation of severe inflammation of the gums.

Please find as follows a summary of Jiminy's visit:

Jiminy was examined by several specialists whilst in hospital and has been diagnosed with gingivostomatitis - inflammation of the gums and mouth. The lymph nodes draining the mouth are inflamed (samples were submitted for cytology) and the salivary glands were also very prominent - but not inflamed. On the CT scan, we also saw changes consistent with bronchointerstitial disease - where the infection / inflammation is extending down the airways into the chest. The results of the sample of the fluid we collected from the chest is being cultured to determine if Jiminy has aspiration pneumonia.

We have NOT seen signs of fungal organisms at this time. We cannot determine yet if this is due to calicivirus - however we feel it is unlikely. There is no other supportive evidence of FIP (feline infectious peritonitis virus). There is no clear evidence of systemic coronavirus.

I would recommend the following treatments, however I am concerned that Jiminy may require the teeth to be removed to reduce his oral pain.

Specialist Medicine Service including endoscopy, advanced imaging techniques (digital radiography, ultrasound and CT) and critical care
 Specialist Surgery Service Specialist Neurology Service Specialist Ophthalmology Specialist Anaesthesia

Medications:

Date/Time	Drug Name	Quantity	Instructions
18-08-2017	Clindamycin 25Mg Capsule	42	GIVE ONCE CAPSULE EVERY 12 HOURS UNTIL FINISHED OR AS OTHERWISE DIRECTED. GIVE A SMALL MEAL IMMEDIATELY AFTER EACH CAPSULE.
18-08-2017	Digesticare 60 150Gm Powder (Per Bottle)	1	PLEASE GIVE 1/2 A SCOOP ONCE DAILY (CAN BLEND IN WITH FOOD).

This is some information from the veterinarians at Cornell University about **Feline Gingivostomatitis**.

Gingivostomatitis is a debilitating feline dental disease marked by severe and chronic inflammation of a cat's gingiva (gums) and mucosa, the moist tissue that lines its oral cavity. Fortunately, the disorder is relatively uncommon.

Although the condition is most frequently diagnosed among cats with certain viral diseases—especially infection with the [feline immunodeficiency virus \(FIV\)](#)—as well as bacterial infections and various nutritional and hormonal conditions, no direct causal relationship between such disorders and gingivostomatitis has as yet been established. Any or all of these conditions, however, can cause an abnormal immune response to plaque, the thin coating of bacteria that normally accumulates on the surface of teeth.

According to Jennifer Rawlinson, DVM, chief of the dentistry and oral surgery section at Cornell University's College of Veterinary Medicine, "The immune system becomes overly reactive to plaque and causes severe inflammation in the gingiva, initially around an affected tooth and then quickly progressing to the tissue in the surrounding area. By the time a cat's owner has noticed the inflammation, it is likely to have spread well beyond the tissue immediately around the affected tooth, potentially involving the tissue in the back of the mouth—the glossopalatine arch—and beneath the tongue."

As for the link between FIV and gingivostomatitis, Dr. Rawlinson observes: "The immune system's inflammatory response is so abnormal in FIV-positive cats that their bodies just aren't up to dealing with routine oral infections. As a result, small infections become big—and then the whole process just feeds on itself."

The salient clinical signs of gingivostomatitis include apparently extreme oral pain; swollen, ulcerated, and bleeding gums; lack of appetite or—if an affected cat seems eager to eat—the inability to do so; consequent weight loss; excessive salivation; blood in the saliva; [bad breath](#); and pawing at the mouth. "The condition of an affected cat's teeth can vary," Dr. Rawlinson notes. "They may appear to be normal or they may have a lot of tartar on them. It depends on the stage of the disease."

Veterinary examination is apt to reveal the presence of lesions under the tongue and on the lips; in the back and on the roof of the mouth; and around various teeth, especially the premolars and molars. "On average," says Dr. Rawlinson, "somewhere between three and five percent of cats show signs of this disease. It can occur in juvenile cats as well as in older animals. The age range seems to be from three to 10 years, but you can see the disease in younger and older cats as well. I don't see a strong predisposition for it among any of the various breeds."

If the condition remains untreated, Dr. Rawlinson says, it is possible for it to become so painful that an affected cat will be unable to take in any food and could conceivably starve to death. Although a biopsy of oral cavity tissue may be required for a conclusive diagnosis, she notes, "you can determine that it's gingivostomatitis in about 85 percent of cases just by looking into a cat's mouth."

Treatment of this debilitating oral condition will typically involve either one or both of two options, depending on the extent of the disease: medical management using drugs to suppress the immune system and control the proliferation of bacteria in an affected animal's mouth; or [surgical management](#), which is likely to entail removal of all of a cat's teeth. "If you get rid of all of the teeth," says Dr. Rawlinson, "you'll be getting rid of all associated bacteria. Once a cat gets over a full-mouth extraction—which will take between five and 10 days—it can go on to thrive very well. About 60 percent of cats will need no further medical management and will have a high quality of life. It won't have a normal oral cavity, but it will have such minimal inflammation that it won't need medication."

There is no preventive measure for gingivostomatitis. Tooth brushing is highly discouraged in animals suffering from the disease as it will be very painful for them. However, healthy cats can certainly benefit from tooth brushing to keep their mouths healthy. For instruction see our online video [Brushing Your Cat's Teeth](#).

The team at Vineyard Veterinary Hospital will be updated as to Jiminy's progress and will receive a full report of our findings and treatment.

Thank you for trusting us with Jiminy's care, he has been a wonderful patient. Please feel free to contact us if you have any further questions or are worried in any way about his recovery.

Yours sincerely

Specialist Medicine Service including endoscopy, advanced imaging techniques (digital radiography, ultrasound and CT) and critical care
 Specialist Surgery Service Specialist Neurology Service Specialist Ophthalmology Specialist Anaesthesia

Dr Amy Lam BVSc(Hons1) GradCertVetStud MANZCVS MRCVS FANZCVS
Registered Specialist in Small Animal Medicine

If you have any questions about Jiminy's case or any others, please contact me personally. It was a pleasure to meet Jiminy and Janice Vale and I hope they appreciated the referral. Thank you for entrusting your clients and patients to our hospital. As always we appreciate your referrals.

Sincerely,

Dr Amy Lam BVSc(Hons1) GradCertVetStud MANZCVS MRCVS FANZCVS Specialist and Fellow in Small Animal Medicine

Specialist Medicine Service including endoscopy, advanced imaging techniques (digital radiography, ultrasound and CT) and critical care
Specialist Surgery Service Specialist Neurology Service Specialist Ophthalmology Specialist Anaesthesia

Phone: 02 9889 0289 Fax: 02 9889 0431 www.sashvets.com

Level 1, 1 Richardson Place, North Ryde NSW 2113 PO BOX 157, North Ryde NSW 1670 ABN 22 473 008 091