Supplementary Table: Detailed information per case of acquired narcolepsy

Case number	Breed and sex	Age	Onset and clinical signs	Diagnostic test results	Clinical diagnosis	Treatment and outcome
#1	FB ME	5y6m	Acute progressive – Lethargy, inappetence, generalized weakness, N/C	GE: n.a. NE: N/C with excitement, lethargy, cervical hyperesthesia NL: Hypocretinergic system (and possibly cervical spinal cord region) Hematology and biochemistry: n.a. MRI: intervertebral disc degeneration C1-T2 region without spinal cord compression, mild Chiari-like malformation, brachycephalic conformity CSF: TP = 0.16 g/L, TNCC 30/µL, RBC 1280/µL	MUO	Methylphenidate was used in the treatment by the referring vet, but this medication was stopped. Prednisolone 1.5 mg/kg q12h, omeprazole 1 mg/kg q12h Back to normal in 1-2 weeks without signs of N/C. Prednisolone was tapered over the next 3-4 months, other medication discontinued. Recurrence 6 months after presentation, again responsive to prednisolone treatment. Euthanasia 15 months after presentation (unspecified paralysis).
#2	C ME	0y7m	Acute progressive – Head tilt (left), generalized weakness, circling (right).	GE: n.a. NE: head tilt (left), circling (right), N/C especially when eating, positional ventrolateral strabismus OS, decreased nociception NL: multifocal intracranial, including hypocretinergic system Hematology and biochemistry: n.a. MRI: mild Chiari-like malformation, possible atlanto-axial band and a small, ill-defined focal hyperintensity on FLAIR images in the right parietal lobe, brachycephalic conformity CSF: TP = 0.40 g/L, TNCC 35/µL, RBC 0/µL, cytology: mixed pleocytosis, PCR: negative	MUO	Dexamethasone 0.2 mg/kg once, prednisolone 1 mg/kg q12h, omeprazole 1 mg/kg q12h, clindamycin 15 mg/kg q12h (discontinued after PCR results), maropitant 1 mg/kg q24h N/C was not seen after discharge three days later. Prednisolone was tapered over the next months. 3 months after presentation, the dog was still doing well with prednisolone 0.5 mg/kg q24h. 9 months after presentation at telephone follow-up, the owners reported that the dog was without medication and no recurrence of any neurological issues nor excessive sleepiness.
#3	FB ME	3y0m	Acute progressive – Episodic collapse (N/C), lethargy, regurgitation, dyspnea	GE: inspiratory stridor and moderate dyspnea NE: N/C with excitement/olfactory stimulation, otherwise normal between events NL: Hypocretinergic system Hematology and biochemistry: neutrophilia (15.83 $x10^9$/L, r.i. 2.95-11.64), increased ALT (134 U/L, r.i. 10-125), mild hypokalaemia (3 mmol/L, r.i. 3.5-5.8) ECG during N/C episodes: sinus rhythm, occasional monomorphic premature ventricular complexes, SpO_2 >97% CU: no abnormalities Thoracic Rx: aspiration pneumonia (ventral right cranial lobe), T10 hemivertebra, soft tissue opacity in lumen of distal esophagus (suspected hiatal hernia) LE: everted laryngeal ventricles, grade II collapse	Aspiration pneumonia, esophagitis, possible MUO based on equivocal CSF TNCC	Omeprazole 1mg/kg q12H, metoclopramide 1mg/kg/day CRI then 0.5mg/kg q12h, cefuroxime 15mg/kg q8h then potentiated amoxicillin 12.5mg/kg q12h N/C worsened. Added imipramine 0.6 mg/kg q8h and prednisolone 1mg/kg q12h. Improvement seen within 48 hours. Episodes of collapse decreased in frequency and then stopped completely 4 days after discharge (7 days after initial presentation). Prednisolone dose continued at 1mg/kg q12h for 2 weeks, then 0.5mg/kg q12h for 4 weeks, then tapered by 25% every 4 weeks. Continued

				ES: distal esophagitis and reflux, suspected sliding hiatal hernia Brain MRI: brachycephalic conformation, mild ventricular asymmetry, bilateral tympanic bulla effusion, mild rhinitis CSF: TP = 0.24 g/L (r.i. <0.3), TNCC 5/µL (r.i. <5), RBC 1530/µL, cytology: blood contamination		treatment for regurgitation and esophagitis: omeprazole 1mg/kg q12h for 4 weeks, metoclopramide 0.5mg/kg q12h for 4 weeks, cisapride 0.25mg/kg q8h for 4 weeks then 0.25mg/kg q12h for 4 weeks then stopped. Not receiving any medications 5 months after initial presentation with no signs of N/C recurrence. Occasional episodes of mild regurgitation reported managed with short courses of omeprazole and metoclopramide. Euthanasia 18 months after remission due to reasons unrelated to narcolepsy.
#4	FB MN	2y1m	Acute progressive – Weakness, lethargy, ataxia (longer history of regurgitation/ vomiting)	GE: OD blepharospasm and conjunctival hyperemia, n.a. otherwise. NE: N/C episodes during consultation, otherwise n.a. NL: Hypocretinergic system Hematology and biochemistry: CK (840 U/l, r.i. 67 - 446), otherwise n.a. STT: OD - 6, OS – 8 ECG during N/C episode: sinus rhythm Nasal swab microbiology: Staphylococcus pseudointermedius. CT: bilateral chronic thickening external ear canal, left tympanic cavity material, lateral ventricle asymmetry, nasal discharge, moderate esophageal wall thickening MRI: left tympanic cavity material hyperintense on all sequences with contrast enhancement of bulla lining. Moderate dilation of lateral ventricles and discontinuity of septum pellucidum, brachycephalic conformity. CSF: TP = 0.16 g/L, TNCC 2/µL, RBC 8/µL, cytology: n.a.	Bilateral otitis externa, left otitis media, esophagitis, rhinitis, keratoconjunctivitis sicca.	Omeprazole 1 mg/kg q12h, amoxycillin/clavulanic acid 22 mg/kg q12h, imipramine 1 mg/kg q12h Topical eye medication Four weeks later: N/C (especially when eating) still present. Also left-sided head tilt and vestibular ataxia developed. Left TECA-LBO – culture revealed Staphylococcus pseudointermedius resistant to amoxycillin/clavulanic acid + staphylectomy and rhinoplasty Imipramine increased to 1.25 mg/kg in the morning and 1 mg/kg in the evening. Cephalexin 22 mg/kg q12h Prednisolone initiated at 0.22 mg/kg q12h Food via gastric tube. Normal gait within a week of treatment for otitis media. Two weeks later follow-up: improvement in N/C, able to eat without falling asleep. Four weeks later: no further N/C. Imipramine was continued. Prednisolone was tapered. 2 months later, N/C worsened again. Imipramine increased to 1.25 mg/kg q12h. No response. Venlafaxine added 3.3 mg/kg q24h but discontinued due to concerns about side-effects.

						Increased imipramine to 2.2 mg/kg in the morning and 1.25 mg/kg in the evening. Still N/C episodes, but <50% frequency. Deterioration with marked N/C again 5 months after presentation – immunosuppressive prednisolone started at 2mg/kg q24h, with ongoing imipramine 2.2 mg/kg q12h. Marked improvement without complete resolution. Tapered down prednisolone to 1mg/kg q48h at last follow-up and stopped two months later. N/C episodes still occur every few days.
#5	FB FN	3y5m	Acute progressive – Lethargy, obtundation, head tremors	GE: n.a. NE: markedly obtunded and head tremors. Narcolepsy (with/without cataplexy) noticed especially when eating. Otherwise n.a. NL: Hypocretinergic system Hematology and biochemistry: lymphopenia (0.75 x 10^9/l, r.i. 1-4.8), PCV (65.9%, r.i. 37-55), ALT (19.3 U/l, r.i. 19.8-124), NIBP: mean 168 mmHg, ABGA: O_2 74 mmHg, AU: n.a. thoracic Rx: n.a., ECG: normal sinus rhythm, UA: USG 1.01, pH 8, sediment: n.a., UC: Negative MRI: brachycephalic conformity, otherwise n.a. CSF: TP = 0.15 g/L, TNCC 3/µL, RBC 232/µL, cytology: n.a.	Unknown Concurrent resolving idiopathic head tremor syndrome.	Deterioration in hospital, started therapy for possible immune-mediated cause Prednisolone 2 mg/kg q24h, omeprazole 1 mg/kg q24h Improvement noticed, but still N/C episodes Added imipramine 1 mg/kg q12h Three weeks later: back to normal. Prednisolone tapered. Four weeks later: Prednisolone stopped, then imipramine stopped 7 days later. 5 months later: Head tremors intermittently returned, no recurrence of N/C 12 months after presentation: Tremors resolved and no recurrence of N/C.
#6	FB FE	1y2m	Chronic progressive – N/C episodes of varying duration	GE: n.a. NE: N/C episodes during consultation (hospitalization), otherwise n.a. NL: Hypocretinergic system Hematology and biochemistry: PCV 56.2 % (37.0 - 55.0), TP (52 g/L, r.i. (54.0 -77.0), albumin (41 g/L, r.i. 26-40), globulins (11 g/L, r.i. 22-52), ALT (31 U/L, r.i. 0-25), bile acids (16 µmol/L, r.i. 0.1-10), glucose (7.1 nmol/L, r.i. 3.0-5.5), triglycerides (0.4 mmol/L, r.i. 0.45-1.9) Serology*: n.a. CU: n.a.,	Unknown	Imipramine 1.7 mg/kg q12h Complete resolution for four months. Recurrence N/C: increased imipramine to 1.7 mg/kg q8h Resolution for a while, but again recurrence with severe and frequent N/C episodes (with aggression afterwards). Follow-up: multiple N/C episodes during consultation. Possibly partial menace response deficit OS. Prednisolone 2 mg/kg q24h added.

				MRI: brachycephalic conformity, otherwise n.a. CSF: TP = 0.23 g/L, TNCC <2/µL, RBC 0/µL, cytology: n.a.		Gradual improvement over 4 days. Prednisolone decreased to 1.3 mg/kg q24h seven days later. Prednisolone tapered to 0.7 mg/kg q24h over next months. N/C in remission. Prednisolone tapered further due to side-effects (coat/skin) and imipramine 1.7 mg/kg q8h. Relapse noticed with prednisolone 0.4 mg/kg every other day. Stable on imipramine 1.7 mg/kg q8h and prednisolone 0.3 mg/kg q24h thereafter. Euthanasia three years after presentation for unrelated issue.
#7	FB MN	2y5m	Acute progressive – Episodes of N/C triggered by excitement that in a week evolved to a constant cataplectic state: N/C was not resolving and the dog was stuporous, responding only to strong stimuli as loud noise or noxious stimuli. When awakened, the dog showed aggression.	GE/NE: presented in cataplexic state, only responsive to loud noise and noxious stimuli and when awakened, extremely aggressive and anxious. NL: Hypocretinergic system Hematology and biochemistry: TP (52 g/L, r.i. (54.0 -77.0), sodium (135 mmol/L, r.i. 139-154), CK (283 U/L, r.i. 0.0 - 190.0), cholesterol (3.0 mmol/L, r.i. 3.8 -7.0), bile acids (15 µmol/L, r.i. 0.1-10), glucose (6.5 nmol/L, r.i. 3.0-5.5), triglycerides (0.2 mmol/L, r.i. 0.45-1.9), PT (5.88 seconds, r.i. 6.0-12.0) Serology*: n.a. AU: n.a., thoracic Rx: n.a. CU: n.a. MRI: brachycephalic conformity, otherwise n.a. CSF: TP = 0.14 g/L, TNCC <2/µL, RBC 0/µL, cytology: n.a.	Unknown	Initially, clindamycin 20 mg/kg q12h while awaiting the serology results. Progressive deterioration and weight loss was noticed. Additional medication thereafter: dexamethasone 0.5 mg/kg q24h for two days, followed by 0.3 mg/kg q24h and imipramine 0.45mg/kg q8h. Some improvement in the first 24 hours (the dog was more awake for a few hours, however N/C occurred when the dog was fed. Started cytosine arabinoside 50mg/m^2 q12h for two days (four doses). Progressive improvement, but N/C was still recurring, especially when trying to eat. Discharged with imipramine 0.45mg/kg q8h and prednisolone 0.9mg/kg q24h after one week. Two weeks later, cytosine arabinoside repeated and imipramine increased to 0.68mg/kg 8h due to some recurrence of N/C episodes. Prednisolone decreased to 0.45mg/kg q24h. One week later, imipramine increased to 0.9mg/kg q8h. Two weeks later, cytosine arabinoside repeated, patient doing well without recurrence of N/C.

						Three weeks later, cytosine arabinoside repeated, patient doing well without recurrence of N/C. Imipramine 0.9mg/kg q8h and prednisolone 0.45mg/kg. Cytosine arabinoside repeated four weeks after last course and again after four weeks, then imipramine was decreased to 0.9mg/kg q12h. Cytosine arabinoside repeated five weeks after last course. Cytosine arabinoside repeated six weeks after last course. 11 months after original presentation, recurrence of episodes with treatment of imipramine 0.9mg/kg Q12H and prednisolone 0.45mg/kg q24h. Cytosine arabinoside 50mg/m2 q12h for four doses, prednisolone 1.13mg/kg q24h and imipramine 0.9mg/kg q12h. Half a year later, the dog was reported stable on prednisolone (0.5 mg/kg q24h) and imipramine 0.9 mg/kg q12h.
#8	FB FE	1y8m	Acute progressive – Head tremors, ataxia, generalized weakness, N/C episodes (with aggression afterwards), discomfort	GE: n.a. NE: mild generalized ataxia, delayed proprioception hind limbs, right > left, menace deficits OU, OD > OS, N/C episodes during consultation NL: multifocal intracranial including hypocretinergic system Hematology and biochemistry: ALT (56 U/L, r.i. 0-25), glucose (7.6 nmol/L, r.i. 3.0-5.5), triglycerides (0.2 mmol/L, r.i. 0.45-1.9) Serology*: n.a. CU: persistent left cranial vena cava of no clinical significance. MRI: Multifocal T2W hyperintense regions in the midbrain and brain stem, only seen in one slice direction. Marked brachycephalic conformity. Left tympanic cavity material hyperintense on all	Unknown	Significant decline during hospital stay, treatment started with dexamethasone 0.5 mg/kg q24, clindamycin 15 mg/kg q12h until serology was confirmed negative, omeprazole 1 mg/kg q12h, cytosine arabinoside 100 mg/m^2 over 24 hours. N/C episodes worst when trying to eat. Improved over the next four days, able to be medicated orally, imipramine added 0.88mg/kg q8h. Topical ear treatment. Two days later, prednisolone 1.77mg/kg q24h replaced dexamethasone. Three days later, discharged, able to walk and eat without collapsing, with prednisolone 1.77mg/kg q24h, imipramine 0.88mg/kg q8h, omeprazole 0.88mg/kg q12h.

				sequences with contrast enhancement of bulla lining. Thickening external ear canal on the left. Mild intervertebral disc degeneration in cervical imaged area. CSF: TP = 0.31 g/L, TNCC <2/µL, RBC 0/µL, cytology: n.a.		One week later, prednisolone decreased to 0.88mg/kg q24h. Cytosine arabinoside repeated three weeks after last dosage 50 mg/m^2. Cytosine arabinoside repeated three weeks after last dosage. Omeprazole discontinued. Cytosine arabinoside repeated four weeks after last dosage. Prednisolone decreased to 0.66mg/kg q24h. Cytosine arabinoside repeated five weeks after last dosage. Prednisolone decreased to 0.44mg/kg q24h. Cytosine arabinoside repeated five weeks after last dosage. Prednisolone decreased to 0.22mg/kg q24h. Cytosine arabinoside repeated six weeks after last dosage. Prednisolone decreased to 0.22/kg every other day four weeks after last cytosine arabinoside course. Four weeks later prednisolone decreased to 0.09mg/kg every other day and later to 0.05mg/kg q48h and imipramine decreased to 0.88/kg q12h. Prednisone discontinued one year after presentation. Imipramine continued at 0.88mg/kg q12h. Three months later, presented for lethargy and circling and a possible epileptic seizure was noticed. Menace deficit OS, circling to the right and right head tilt were noticed on NE. Repeated diagnostic tests were consistent with bilateral otitis media. The MRI findings of T2W hyperintensities in the thalamus, midbrain and medulla oblongata in only one slice direction (again). Treatment started with dexamethasone 0.3 mg/kg once, with marked improvement in 24 hours. Levetiracetam 22.1mg/kg q8h, omeprazole 0.88mg/kg q12h, amoxycillin/clavulanic acid 22.1mg/kg q12h and changed dexamethasone to prednisolone 1.1mg/kg q24h.

						Discharged with levetiracetam 22.1mg/kg q8h, omeprazole 0.88mg/kg q12h, amoxycillin/clavulanic acid 22.1mg/kg q12h, prednisolone 1.1mg/kg q24h and imipramine 0.88mg/kg q12h. Two weeks after discharge, patient back to normal. Still receiving levetiracetam 22.1mg/kg q8h, prednisolone 1.1mg/kg q24h and imipramine 0.88mg/kg q12h.

ABGA: arterial blood gas analysis

Age: age at presentation in years (y) and months (m)

ALT: alanine transaminase

AU: abdominal ultrasound

Breed: FB = French Bulldog

C = Chihuahua

CSF: cisternal cerebrospinal fluid

CT: Computed Tomography

CU: cardiac ultrasound

ECG: electrocardiogram

GE: general examination

Hematology and biochemistry: only values that were outside r.i. were mentioned.

LE: laryngeal exam

MRI: Magnetic Resonance Imaging

MUO: meningoencephalitis of unknown origin

N/C: narcolepsy (with cataplexy)

NE: neurological examination

NIBP: non-invasive blood pressure

NL: neurolocalisation, n.a. = no abnormalities/within reference range

OD: oculus dexter

ES: esophagoscopy

OS: oculus sinister

OU: oculus uterque

PCR: real-time polymerase chain reaction for Bartonella spp., Borrelia burgdorferi sensu lato, Canine Distemper virus, Cryptococcus neoformans, Neospora spp., Toxoplasma gondii

PCV: packed cell volume

PT: prothrombin time

r.i. = reference interval

Rx: radiographs

Serology*: Borrelia burgdorferi, Toxoplasma IgM, Toxoplasma IgG, Neospora spp., Ehrlichia canis, Anaplasma canis

Sex: ME = male entire, MN = male neutered, FE = female entire, FN = female neutered

SpO_2: oxygen saturation percentage

STT: Schirmer tear test

TECA – LBO: total ear canal ablation – lateral bulla osteotomy

UA: urinalysis

UC: urine culture

USG: urine specific gravity