PARAGONPRESS

ISSUE 3 AUTUMN 2020

Covid Lockdown Review

Life at Paragon during a global pandemic

TEAM SAFETY
Paragon invests in new Chemo Hood

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CASE STUDY
Chronic bilateral mucopurulent nasal discharge

TOP TIPS
Glucose Monitoring Tools

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PARAGON
VETERINARY REFERRALS

WELCOME

Welcome to the third edition of Paragon Press.

We've enjoyed putting together some fantastic clinical papers, top tips and much more for you to read over a cup of coffee. In the last three months, despite the global pandemic, we've really honed in on why we're #ProudtobeParagon and celebrated the talented team in our multi-disciplinary centre, which provides clinical excellence to all our clients.

We've made some positive changes since you last received our newsletter, including simplifying our referral process online and introducing CPD webinars and podcasts, which you can enjoy from home at your convenience. We know it has been challenging for all our colleagues in primary care practice and we are here to help you provide the best care for pets under your care.

As well as providing a multi-disciplinary referral service, we are also happy to provide you with advice. You can contact one of our specialist team using our NEW online advice form.

We hope you enjoy our latest Paragon Press newsletter!

Sophie Adamantos
Paragon Clinical Director

#PROUDTOBEPARAGON

Find out why our team is #ProudtobeParagon

Scan me to view the Talking Heads Video

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Committed to excellence

PARAGON VETERINARY REFERRALS

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COVID 19

How we are coping during COVID

When the global pandemic hit and the UK went into lockdown, we had to adapt very quickly. Gone are the days of sharing treats in a busy staffroom and hugging people without concern. This is the first time we have been unable to welcome clients into the practice and in common with other clinical practices, it was tough adapting to the 'new normal'.

In line with Government and Royal College of Veterinary Surgeon guidelines, during lockdown we were only open for emergency and urgent appointments and had to make changes to our clinic to keep our staff safe during such an unprecedented time.

We ensured that anyone who could work from home did so, while maintaining enough clinical staff to continue providing our high standard of care to pets. We began offering remote consults either by phone or video and if we needed to see a patient, we would greet the owner and their pet in the car park and admit the animal to the hospital from there.

Rather than seeing re-examinations in the hospital, we would follow-up with an online consultation where possible. Since we starting reintroducing staff to the premises in June, we have put a host of safety measures in place to keep both our patients and staff safe.

Staff have been provided with full PPE to use, for whenever social distancing is not possible and we've made alterations to the way we work by introducing social bubbles. As we've begun returning to our normal levels of service, we have limited access to the reception areas and have added screens for both staff and client protection.

To allow for social distancing, we are limiting the number of people taking lunch breaks together and asking staff to be responsible for cleaning personal work stations. We've also introduced electronic forms, signage about hand hygiene and hand gel stations throughout the premises.

We're extremely proud of how well our staff adapted to these changes and the sacrifices they've made, and continue to make, to keep us all safe. Although it's been a difficult time, one thing which has never changed is our enthusiasm and passion for caring for pets.

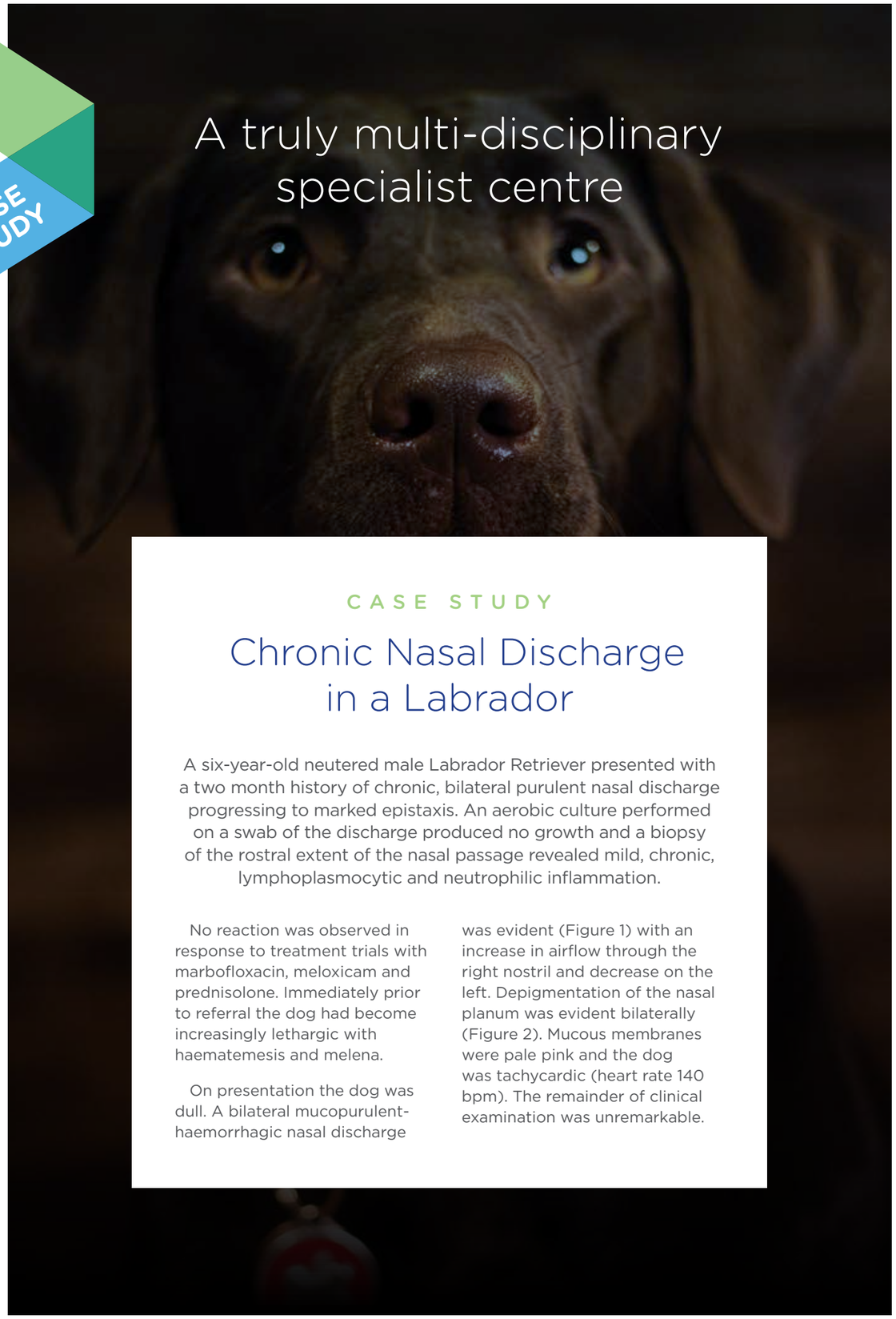
Although we're far from 'normal', we've learned a lot through this pandemic. Despite the introduction of local lockdowns, we're confident we will be able to continue offering high-quality care to our pets and their owners.

If you want to know more about what we offer, or have any requests, please do get in contact with us.

Sophie Adamantos
Paragon Clinical Director

What makes Paragon stand out?

- A truly Multi-Disciplinary Team
- New and state of the art facilities and ease of access with large customer car park
- Diplomate led services – outstanding calibre and quality clinical services



CASE STUDY

A truly multi-disciplinary specialist centre

CASE STUDY

Chronic Nasal Discharge in a Labrador

A six-year-old neutered male Labrador Retriever presented with a two month history of chronic, bilateral purulent nasal discharge progressing to marked epistaxis. An aerobic culture performed on a swab of the discharge produced no growth and a biopsy of the rostral extent of the nasal passage revealed mild, chronic, lymphoplasmocytic and neutrophilic inflammation.

No reaction was observed in response to treatment trials with marbofloxacin, meloxicam and prednisolone. Immediately prior to referral the dog had become increasingly lethargic with haematemesis and melena.

On presentation the dog was dull. A bilateral mucopurulent-haemorrhagic nasal discharge was evident (Figure 1) with an increase in airflow through the right nostril and decrease on the left. Depigmentation of the nasal planum was evident bilaterally (Figure 2). Mucous membranes were pale pink and the dog was tachycardic (heart rate 140 bpm). The remainder of clinical examination was unremarkable.

PROBLEM LIST

CHRONIC BILATERAL MUCOPURULENT NASAL DISCHARGE

EPISTAXIS

HAEMATEMESIS AND MELENA

PALLOR AND TACHYCARDIA

LETHARGY

Potential differential diagnosis for a bilateral mucopurulent nasal discharge are listed below;

- fungal (aspergillosis)
- neoplasia (adenocarcinoma, squamous cell carcinoma, chondrosarcoma, osteosarcoma, lymphoma, mast cell tumour)
- chronic inflammatory rhinitis
- dental disease
- bacterial infection
- foreign body

FIG. 1

FIG. 2

PROBLEM LIST

- Chronic bilateral mucopurulent nasal discharge

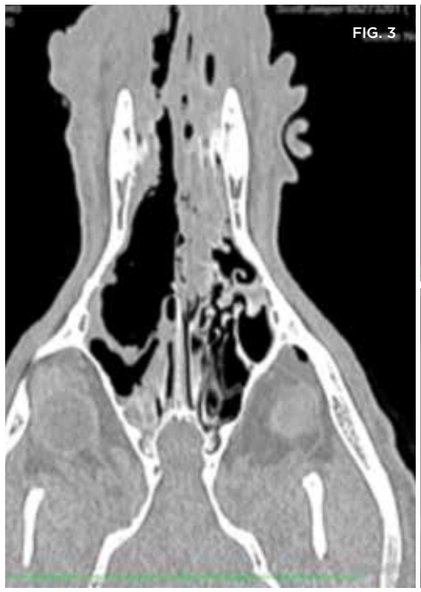


FIG. 3

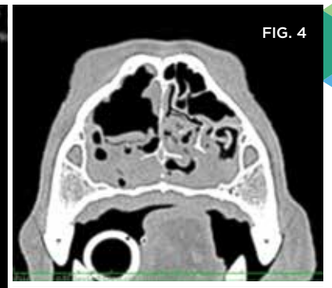


FIG. 4

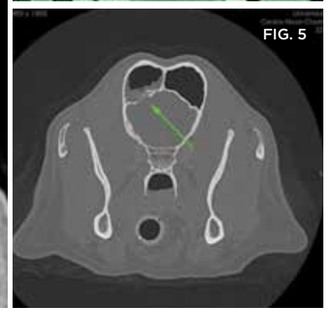


FIG. 5

- Epistaxis
- Haematemesis and melena
- Pallor and tachycardia

DIAGNOSIS

Further investigation of the nasal cavity was deemed necessary. Although considered unlikely, bleeding disorders were excluded prior to this.

A complete blood cell count was performed to screen for anaemia and to rule out thrombocytopenia. A moderate regenerative anaemia was identified (HCT 29%, reticulocyte count 408x109), platelet numbers were adequate. Prothrombin and activated partial thromboplastin times were within normal limits. A serum biochemistry was performed to rule out underlying systemic disease. No significant abnormalities were detected.

Computed tomography (CT) was performed to provide further information on the structure of the nasal cavity and sinuses. As neoplastic disease was a differential diagnosis the thorax was included in the series. CT revealed a bilateral destructive rhinitis, more marked in the right nasal cavity with involvement of the right frontal sinus and erosion of the lateral frontal bone and the cranial vault (Figures 3, 4 and 5).

Rhinoscopy was performed to visualise the nasal cavity. Marked destructive changes were noted and the right nasal passage had a cavernous appearance due to severe turbinate lysis. Caudally the nasal septum had been destroyed. Profuse mucopurulent discharge was visualised along with multiple fungal plaques in the nasal passages and frontal sinus (Figure 6).

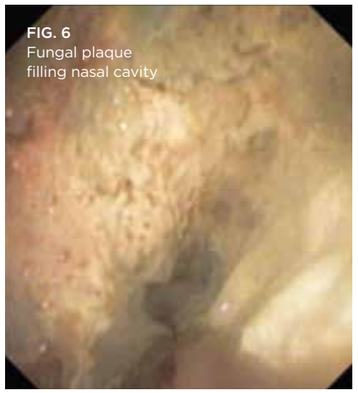


FIG. 6
Fungal plaque filling nasal cavity

Given the evidence of destructive change of the nasal cavity along with visualisation of fungal plaques a final diagnosis of sinonasal aspergillosis was made.

CASE STUDY

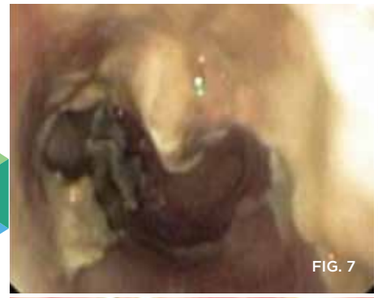
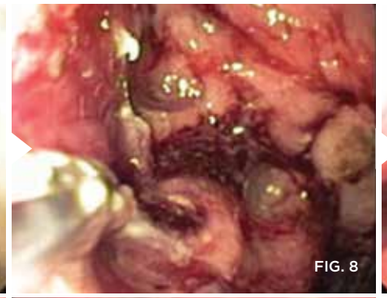


FIG. 7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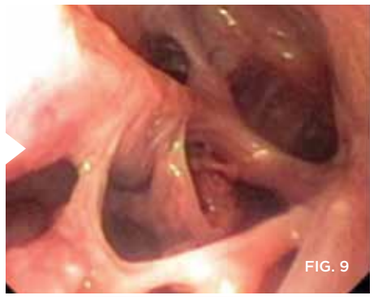
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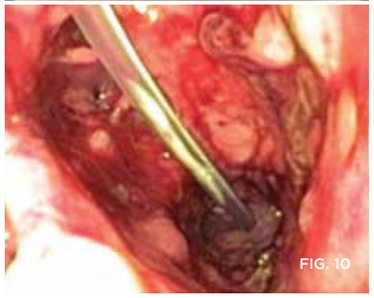
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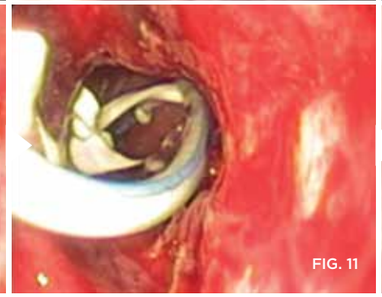


FIG. 11

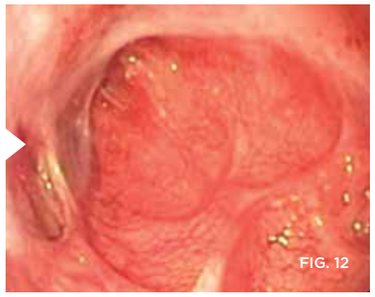


FIG. 12

TREATMENT

Treatment commenced at the time of rhinoscopy. First, the nasal passages and frontal sinuses were thoroughly debrided endoscopically. The nasal passages were flushed with a large volume of saline via a catheter placed endoscopically in the frontal sinus. Finally, the frontal sinuses and nasal cavity were packed with clotrimazole cream. Once recovered from anaesthesia the patient was discharged with meloxicam.

The procedure was repeated every 7 days, for a total of 4 treatments. At the time of the fourth treatment no fungal plaques could be visualised. A final treatment was repeated and the patient discharged. His coughing has resolved and he remains clinically well.

FIG. 7
Fungal granuloma in nasal passage

FIG. 8
Nasal passage following debridement

FIG. 9
Appearance of the nasal passage at the time of the fourth treatment

FIG. 10
Catheter placement in frontal sinus for flushing

FIG. 11
Packing of frontal sinus with clotrimazole cream

FIG. 12
Appearance of the frontal sinus at the time of the fourth treatment

DISCUSSION

This report describes a severe case of sinonasal aspergillosis in a dog with a favourable response to medical management with a minimally invasive protocol. Sinonasal aspergillosis should be considered as a differential diagnosis for chronic nasal discharge, but may require advanced imaging and endoscopy to diagnose. Serology provides a more accessible method of diagnosis, however, only offers moderate sensitivity (57-88% depending on assay used).

Although cribiform plate lysis has previously been considered an extremely poor prognostic indicator, a recent case series reported a favourable outcome in most, as was seen in this case.

Treatment options include trephination of the frontal sinus with debridement of fungal plaques and the instilling of topical antifungal solution and/or cream, or minimally invasive endoscopic techniques (as described in this case), Foley catheter placement into the frontal sinuses and regular flushing with enilconazole solution, and long term administration of oral antifungal medication have also been described, but a lower treatment success rate is reported. Prospective randomised controlled studies are lacking, but it appears that both the technique described and trephination of the frontal sinus are associated with higher treatment success. Regardless of the technique used meticulous debridement and inclusion of the frontal sinus in the treatment are key to success.

TEAM FOCUS

How our senior RVNs help develop our nursing team

In previous newsletters, we've been profiling our fantastic team members to find out more about them and the work they do. This month, we're giving a shout-out to our amazing senior nursing team, who work tirelessly to provide exceptional healthcare for all patients at Paragon.

Our senior RVNs play an important part in the development of our nursing team and we rely on their experience and knowledge to help build a strong team of nurses.

Meet Sam, Rebecca and Alison. They're sharing what they love about their job, how they've coped with the challenges of the coronavirus pandemic and why they're

#ProudtobeParagon...

We are recruiting in all our nursing areas due to expansion! Please see our website for further information

paragonreferrals.co.uk/careers

Sam Lewis
Nurse Training and Development Lead

"My job is primarily a non-clinical role, looking after our exceptional nursing team. It's so rewarding to support the nurses through their development, from the interview process to their induction, to becoming confident RVNs in a referral setting.

I help them realise their potential in the veterinary world and sometimes encourage them to take the next step into leadership or management roles.

I am proud to work at Paragon as we have such an amazing team of vets, nurses and admin staff, who work together to deliver the best standard of care. The love and dedication I see from colleagues when looking after each and every patient is truly inspiring."

Rebecca Fray
Clinical Nursing Lead

"My role is rewarding because I get to help and see animal care assistants grow into confident, knowledgeable and caring veterinary nurses. I am continually blown away by the care and compassion our nurses show towards their patients.

The dedication the nurses show in their roles makes me proud to be at Paragon.

This year has been difficult for everyone and we've all had to adapt to different ways of working. We asked the nurses to work long shifts and split to form two different teams, which meant they had to shield from friends for months.

The way they did this to help protect their colleagues and the business made me feel extremely proud.

"I love that I am one of the people the nurses can go to for advice. My main job is to help the nurses get the most out of their career and deliver the best care possible."

Alison Mann
Diagnostics Team Lead

"I work with a group of exceptionally talented vets and nurses on many difficult and interesting cases.

Paragon takes great care of all its staff, creating a friendly, supportive and progressive workplace. We are constantly learning about the latest innovations, while appraising, reviewing and updating our processes to ensure gold standard protocols are in place.

With the large range of diagnostic equipment and expertise available, we can provide owners with detailed information on the causes of their pet's condition, allowing the best decisions to be made on their future care.

I am proud to work in an area of veterinary medicine which allows my team to become hugely knowledgeable and competent in their individual roles."

TOP TIPS

Continuous Glucose Monitoring

Jane Scott, RCVS Advanced Practitioner in Small Animal Medicine, discusses a diabetic patient who was proving difficult to control on insulin therapy and will give some tips on diagnostic tools that can be used when approaching diabetic patients.

The clinical presentation

Macey is a 6 year old FN Labrador who presented to the medical team at Paragon Veterinary Referrals last year. She had been diagnosed with diabetes mellitus in 2017 when she had presented to her local practice with PU/PD, lethargy and weight loss. She was referred last year following a collapsing episode on a walk. She had also lost weight and had occasional nocturia. She was receiving 10iu (0.5iu/kg) of glargine insulin twice a day and the dose had been gradually increased based on spot glucose measurements.

What should I do next?

The first step in approaching a diabetic patient is to check owner compliance with the insulin storage and administration. We were satisfied that administration technique was appropriate.

Routine bloods were performed to assess for any concurrent disease that could be affecting stabilisation. Other than mild liver enzyme elevations (consistent with diabetes mellitus) these were unremarkable. Specific pancreatic lipase was within normal limits. Fructosamine was 641 umol/l consistent with poor control. Abdominal ultrasound revealed no structural abdominal disease and urinalysis including culture was unremarkable except for glucosuria.

What further information do I need to know?

When assessing response to insulin therapy we need to establish if the dose of insulin is appropriate (determined by the blood glucose nadir), the length of action of the insulin (determined by how long over the day the blood glucose is in our desired range) and whether the peak insulin effect coincides with the postprandial hyperglycaemia.

AUTHOR
Jane Scott BVSc CertSAM MRCVS
RCVS Advanced Practitioner in Small Animal Medicine

What tools are available to me to further assess patient response to insulin therapy?

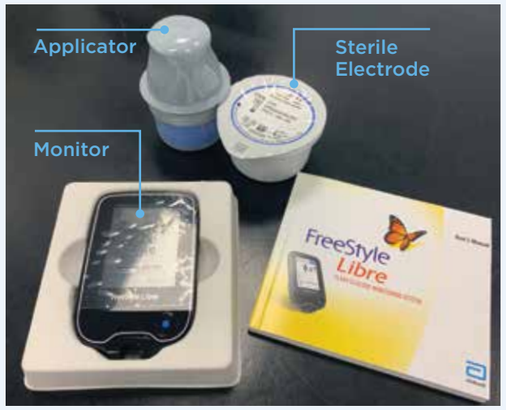
- **Spot blood glucose measurements** - these do not answer our questions here so are of limited value
- **Fructosamine** - this is a measure of the average blood glucose over a period of time. Measuring fructosamine has the advantage that only one sample is required and there is no period of hospitalisation but it is important to remember that as this is an average, a patient that is having very high and very low blood glucose readings can have a fructosamine within normal range. It also does not tell us the nadir or peak. The value can be affected by stress and also serum/plasma protein levels and concurrent disease (such as hyperthyroidism in cats)
- **A serial blood glucose curve** - this is a useful tool as it will answer the questions above, however, the disadvantage is that multiple venepunctures are required and usually a period of hospitalisation (with consequent stress affecting the results)
- **Interstitial glucose monitoring** - a relatively new tool available to us is the Freestyle Libre interstitial glucose monitoring device (Abbott, UK). The device monitors interstitial glucose continuously by means of a sensor placed in the subcutaneous tissue. An electrochemical reaction between the electrode of the sensor and glucose in the interstitial fluid produces a current which is recorded by the device. A reading is taken every 30 seconds and the data is stored and subsequently downloaded to a computer where a graph can be produced.

  There is good correlation between readings and conventional blood glucose measurements and the continuous monitoring avoids peak or nadir results being missed between two conventional blood glucose samples being taken.

How do I place the device?

The device is easily and non-invasively placed and is tolerated well with minimal signs of irritation.

INTERSTITIAL GLUCOSE MONITORING



The monitor is used to scan the electrode once in situ and stores the data (an app is also available so a smartphone can also be used to record the data).

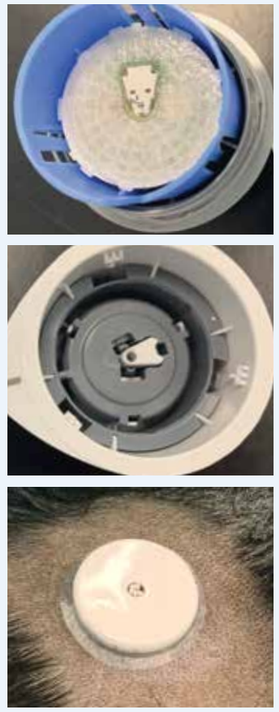
The electrode is inserted onto the end of the applicator.

Hair is clipped and the skin cleaned with an alcohol wipe.

The applicator with the electrode attached is placed against the skin and the electrode fired into the subcutaneous tissue.

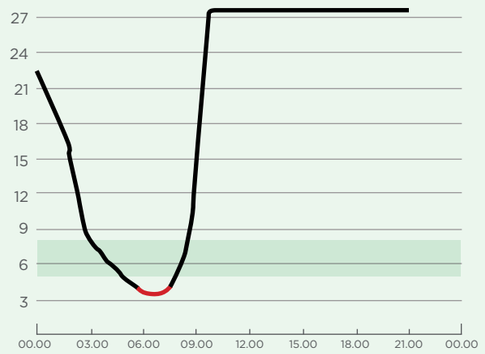
The electrode is secured with tissue adhesive and a dressing.

A stockinette dressing can be used to further protect the device.



What was the result in Macey?

Macey had an interstitial glucose monitoring device placed and was discharged to her home environment so normal routine could be continued. The device can be left in situ for up to 14 days. The curve generated revealed hypoglycaemia following insulin administration followed by a rebound hyperglycaemia (Somogyi effect). Macey's insulin dose was in fact too high and following a 20% dose reduction she stabilised.



For which patients should I consider an interstitial glucose monitor?

- Where stress is thought to be affecting the results of a blood glucose curve or fructosamine
- There are concerns about owner non-compliance at home (for example good blood glucose curve results in the practice but clinical signs and fructosamine suggest poor control)
- Patients with continued clinical signs despite increasing doses of insulin
- Patients hospitalised with DKA that are requiring regular monitoring of their glucose

It is always important to remember to interpret the results from the device in combination with clinical signs and examination findings.

The medical team at Paragon Veterinary Referrals are always very happy to discuss any diabetic cases who are not responding well to treatment and may benefit from implantation of an interstitial device.

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S. Corradini et al: Accuracy of a Flash Glucose Monitoring System in Diabetic Dogs: JVIM (2016) 30, 983-988
E. Malerba et al: Accuracy of a Flash Glucose Monitoring System in dogs with diabetic ketoacidosis: JVIM (2020) 34, 83-91

WHAT'S NEW?

WE READ FOR YOU

Welcome to **'We Read For You'**. This feature highlights recently published papers from a Veterinary Journal and presents the take-home message concisely, allowing you to catch up on recent evidence in a tea break.

Authors
Jessica M Quimby, Kellyi K Benson, Stacie C Summers, Ashlie Saffire, Andrea K Herndon, Shasha Bai, Daniel L Gustafson

Reference including DOI
Journal of Feline Medicine and Surgery 22 (4) 376-383 https://doi.org/10.1177/1098612X19851303

Type of Study
Double blinded placebo controlled prospective crossover study

Assessment of compounded transdermal mirtazapine as an appetite stimulant in cats with chronic kidney disease

REVIEWER
Andrea Holmes
BSc BVSc(Hons) DipECVIM MRCVS

EBVS® Specialist in Small Animal Internal Medicine
Paragon Veterinary Referrals

OUTLINE

Oral mirtazapine has been shown to stimulate appetite in cats. Some cats are not amenable to oral medications and particularly in chronic kidney disease (CKD) cats (and owners) can be burdened by the large number of pills that are prescribed. This study was performed in the USA, before the approval of transdermal mirtazapine ointment there (Mirataz). The purpose of this study was to assess the appetite stimulation properties of compounded transdermal mirtazapine (CTM) in cats with CKD.

Population: Cats with stable IRIS stage 2 or 3 CKD with a history of hyporexia.

Intervention: Transdermal mirtazapine followed by placebo (or vice versa) given every other day for 3 weeks.

Outcome and comparison: Assessment of owner reported clinical signs, clinical assessment by a vet and serum biochemistry.

THE STUDY

Double blinded placebo-controlled prospective crossover study at Ohio State Uni. Mirtazapine or placebo given every other day for 3 weeks, with a 4 day washout then opposite treatment given.

THE STUDY POPULATION

Inclusion: stable (not defined) IRIS stage 2 or 3 CKD. Serum biochemistry, haematology, urine culture, blood pressure and total T4.

Exclusion: concurrent systemic illness, pyelonephritis, ureteral obstruction, decompensation of CKD or recent hospitalisation.

Owners documented appetite, rate of food ingestion, begging behaviour, activity and vocalisation as increased, decreased or unchanged.

Veterinary assessment (at the start and at the end of each treatment period) – physical exam, body weight, body condition score (BCS), muscle condition score, serum biochemistry.

Serum collected on day 21 (last day) of mirtazapine to assess drug concentrations.

Drugs – mirtazapine tablets were compounded into either 3.75mg/0.1ml or 1.88mg/0.1ml transdermal Lipoderm gel.

STATISTICS

1 Appetite, rate of food ingestion, begging behaviour, activity and vocalisation from owner daily logs were converted to clinical scores: -1 (decrease), 0 (no change), 1 (increased). Daily scores were summed for the 3-week period.

2 Physical exam findings (change in weight, BCS and clinicopathological parameters) and summed scores from owners were analysed using an ANOVA.

3 Spearman's rank to assess correlation between vocalisation and mirtazapine concentration.

RESULTS

3.75mg dose

- 12 cats in the study (6 allocated to mirtazapine first, 6 allocated to placebo first)
- Study discontinuation in 3 cats (1 x household outbreak of GI signs and 2 x uremic crisis)
- 9 cats completed the study (8 either DSH or DLH), median age 15yr (12-21yr)
- 6 were IRIS stage 2 and 3 IRIS stage 3
- Comparing to pre-treatment values to post treatment with transdermal mirtazapine there was a statistically significant:
  - Increase in weight (median gain was 0.22kg)
  - Increase in BCS
  - Increase in appetite
  - Increase in rate of food consumption
  - Increase in urea (median 3.5mmol/L increase)
- No significant difference in activity or vocalisation. However, 2 cats experienced excessive vocalisation in 21/21 or 19/21 days.
- No significant difference in creatinine, phosphorus or potassium.
- 100% of cats gained weight during mirtazapine treatment and 67% of cats lost weight during placebo phase.
- Gel concentrations available for 6 cats – varied between 74-122% and 66% of formulations were outside the 10% variability target dose.
- No significant correlation between vocalisation score and serum mirtazapine level.

1.88mg dose

- study discontinuation in 2 cats (household outbreak or upper respiratory tract signs and tooth root abscess)
- 10 cats completed the study (4 DSH, 2 Siamese, 1 Ragdoll, 1 BSH, 1 Ragamuffin and 1 DLH).
- Median age 14yr (12-18yr), 6 IRIS stage 2 and 4 IRIS stage 3.
- Comparing to pre-treatment values, post treatment with transdermal mirtazapine there was a statistically significant:
  - Increase in weight (median 0.26kg)
  - Increase in BCS
  - Increase in appetite
  - Increase in rate of food consumption
  - Increase in begging behaviours
  - Increase in urea (median 3.4mmol/L)
  - Increase in phosphorus (median 0.8mg/dL)
- No significant difference in activity or vocalisation. However, 2 cats experience excessive vocalisation in 16/21 and 19/21 days.
- No significant change in creatinine or potassium.
- Weight gain in 90% of cats during mirtazapine treatment and 70% of cats lost weight during placebo treatment.
- Gel concentrations 11 cats – varied between 76-107%, 18% outside 10% variability target.
- No significant correlation between vocalisation score and serum mirtazapine level.

TAKE HOME MESSAGE

Transdermal mirtazapine at 1.88mg every other day is effective to increase appetite in cats with IRIS stage 2 and 3 CKD. The concentration of mirtazapine in compounded gels is variable.

Considerations:

Good study design with a simple question and objective parameters to assess. The crossover design allowed cats to act as their own breed and age matched controls.

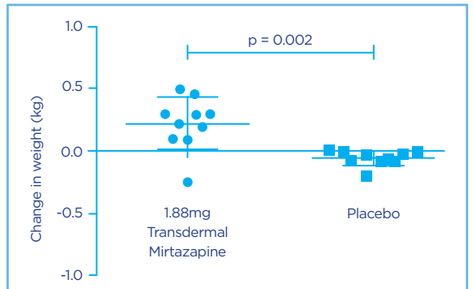

FIG. 3
Change in weight after administration of 1.88mg compounded transdermal mirtazapine or placebo every other day for 3 weeks. A statistically significant increase in weight was seen (P = 0.002)

Phosphate was significantly increased during mirtazapine treatment (increased by 0.8mg/dl) in the 1.88mg group but this wasn't found in the 3.75mg group. This is unlikely to be significant as it wasn't found in the higher concentration group. It is most likely a type I error = false positive.

Some cats experienced excessive vocalisation. This didn't appear to be linked to the serum concentration of mirtazapine. These cats may benefit from a dose reduction.

In the UK there is a transdermal mirtazapine product however it is not licenced. Using the cascade system this drug can be used via this alternative route, owners should provide signed consent to use an off licensed medication.

Want to know more?
Listen to our podcast at: paragonreferrals.co.uk/veterinary-professionals/cpd/

CPD PROGRAMME

JOIN US LIVE

CLINICAL CLUB CPD WEBINARS

Elbow Dysplasia - Thursday 24 September 2020. 7:30pm - 9:30pm. Online Event.

Speaker - Turlough O'Neil, MVB MVS MACVSc CertSAS DipECVS MRCVS, RCVS Specialist in Small Animal Surgery (Orthopaedics)

Elbow dysplasia is a common cause of forelimb lameness in dogs. This session will discuss an approach to the diagnosis of elbow dysplasia including the information relevant to making appropriate treatment decisions.

Anaesthesia in brachycephalic patients - Wednesday 14 October 2020. 7:30pm - 9:30pm. Online Event.

Speaker - Elizabeth Leece, BVSc CertVA DipECVAA MRCVS, RCVS Specialist in Anaesthesia and Analgesia

As brachycephalic breeds of dogs and cats become more popular it is important to understand how to optimise anaesthesia and analgesia in these patients to minimise problems in the recovery period.

Lower urinary tract case discussion (for submitted cases) followed by a talk on urolithiasis - Thursday 22 October 2020. 7:30pm - 9:30pm. Online Event.

Speaker - Andrea Holmes, BSc BVSc DipECVIM-CA MRCVS, EBVS® Specialist in Internal Medicine

Please submit your challenging lower urinary tract cases from your clinic so we can discuss these as a group. We will consider the pathophysiology, approach to diagnostics, management and which cases would benefit from referral. Depending on how long this discussion takes I will then talk about urolithiasis in dogs and cats.

Medical disease of the brachycephalic patient - Thursday 26 November 2020. 7:30pm - 9:30pm. Online Event.

Speaker - Andrea Holmes, BSc BVSc DipECVIM-CA MRCVS, EBVS® Specialist in Internal Medicine

Forum overview – The session will cover gastro-oesophageal reflux, hiatal hernia, pyloric stenosis, lung lobe torsions and meningitis of unknown origin.

NURSING SKILLS CLUB

Radiography interpretation for Nurses - Thursday 15 October 2020. 7:30pm - 9:00pm. Online Event.

Speaker - Rebecca Fray, RVN Surgical Team Leader

Dealing with anaesthetic problems - Monday 14 December 2020. 7:30pm - 9:00pm. Online Event.

Speaker - Elizabeth Leece, BVSc CertVA DipECVAA MRCVS, RCVS Specialist in Anaesthesia and Analgesia

We offer a CPD schedule to cater for all of your veterinary team at their convenience. Whether you prefer to attend live, or listen later we have webinars and podcasts covering some fantastic topics from great speakers.

WATCH OR LISTEN AT ANYTIME

PODCASTS

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- Chronic Diarrhoea in Dogs
- Brachycephalic Obstructive Airway Syndrome
- Immunosuppressives
- Anaesthesia for Emergency Cases
- Soft Tissue Sarcoma
- Transfusion medicine for nurse
- Feline Transfusion Medicine
- Porto-systemic Shunts

CPD VIDEOS

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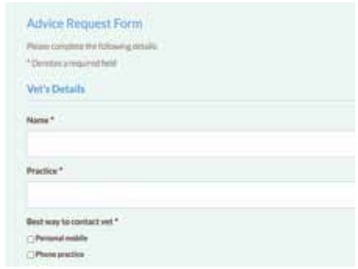
- Gastric dilatation and volvulus (GDV)
- Brachycephalic obstructive airway syndrome (BOAS)
- Management of traumatic wounds
- Tracheal and Urethral Stenting
- Chronic Diarrhoea
- Antimicrobial Resistance
- Anaesthesia for Emergency Cases
- Everything You Ever Wanted to Know About Immunosuppressives But Were Afraid To Ask
- Soft Tissue Sarcoma
- Transfusion medicine for nurses, when we use them, how we monitor transfusions and how to get hold of blood
- Feline Transfusion Medicine

To see all our CPD events and book places visit paragonreferrals.co.uk/cpd

NEED ADVICE OR JUST A SECOND OPINION?

We have launched a brand new advice form, making it much simpler for you to ask our Specialist-led teams for advice prior to a referral, or even if you just need a second opinion.



We understand that with consultations and practice commitments, it's not always possible to pick up the phone to call us for advice on a case, so why not take advantage of this new free service, available on our website.

paragonreferrals.co.uk/advice-request-form

READY TO REFER TO PARAGON?

We've adapted our ways of working to ensure we are able to provide a safe environment during Covid-19 restrictions. Please be assured that within the hospital, we continue to function as normal and to provide the same excellent care we always have.

We continue to offer remote consults to allow clients to avoid travelling where they are either unable to or would prefer not to.

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The fresh gas flow rates of oxygen routinely recommended during spontaneous ventilation are 0.8-1 times the minute ventilation of the patient. The minute ventilation approximates to 200ml/kg reflecting the patient's tidal volume (10-15ml/kg) multiplied by the respiratory rate. In between breaths, the bag fills and causes the expired gases to be expelled from the system before the next breath is taken. If a capnograph is used, the fresh gas flows required to prevent rebreathing of carbon dioxide may be even lower than those recommended, making its use even more efficient with the correct monitoring equipment.

The fresh gas flow rates do need to be increased if manual ventilation is needed and here using the capnograph as a guide is recommended.

The recommended fresh gas flow rate of oxygen for a mini-Lack™ being used for a 5kg cat when not using capnography is:

A	B	C	D
400-500ml/min	0.8-1l/min	1.25-1.5l/min	2-3l/min

COFFEE WITH OUR CLINICIANS

Andrea Holmes and Sophie Adamantos in conversation about Immunosuppressives

What is the commonest cause of immune mediated disease in dogs and cats in your hands?
The commonest condition we see in referral practice is probably IMHA. We also have a good number of ITP and IMPA referred to us. We will exclude dermatological disease for today as this is outside our comfort area.

Do you think this is different in first opinion practice?
This is always difficult to know as our case load is biased to those patients that are more challenging to manage in primary care practice. It is likely that IMHA are more commonly referred as we have blood products and other supportive therapies available that may not be in primary care.

When you have made a diagnosis of immune-mediated disease in a dog what is your go to drug and dose as a starting point?
I tend to start with prednisolone given orally at 2mg/kg once a day if the dog is eating, if it isn't I start with dexamethasone intravenously at an equivalent dose, about 0.25mg/kg once a day.
SA: I tend to start with higher doses in severe presentations, say 4mg/kg for 5-7 days in the IMHA and ITP. Perhaps this is because as an ECC clinician the cases I saw were very severely affected, but actually also because this is what I was taught and the evidence base in this area is quite weak. Certainly in people they start with extremely high doses as an initial dose in some immune mediated disease.

Does this change with the disease?
Glucocorticoids would be my first line drug in most cases of immune-mediated disease unless there was a real contraindication such as a gastrointestinal ulcer. Remember that dogs with IMTP often have melena due to mucosal bleeding, these patients don't usually have a focal ulcerated area, it is diffuse, these patients should be given glucocorticoids.
Other first line drugs I may reach for would be mycophenolate or leflunomide (depending on the disease process) Ciclosporin can work nicely as a single agent but it can take 10-14 days to work so often you need something else in the interim.

What about in cats?
I tend to start with a higher initial dose in cats, say 4mg/kg as they are more tolerant to the effects of the steroids

When you are suspicious of IMPA what is the minimum amount of information you require before starting immunosuppressive therapy?
Do you need a definitive diagnosis?
In an ideal situation I would perform haematology, serum biochemistry, infectious disease testing, joint taps and imaging of the thorax and abdomen. The presence of neutrophilc inflammation (in the absence of an infectious disease) in 3 or more joints gives the diagnosis of IMPA. The other tests are screening for a trigger for IMPA. Joint taps are probably the most important test to allow the diagnosis and the other tests need to be weighed up based on the owners financial situation, motivation and also whether the dog has any signs in the history or clinical exam which increase the chance of an underlying trigger for an autoimmune disease.

Is there a role for using a lower dose of your immunosuppressive drug if you haven't got a definitive diagnosis?
I wouldn't usually. I would prefer to either wait to see if time and maybe repeat testing allows a more definitive diagnosis. For example sometimes the distinction between a gastrointestinal bleed and IMHA can be tricky, I would treat for the gastrointestinal bleed with omeprazole and repeat haematology serially to see if the anaemia is improving or whether the results become more convincing for IMHA.
In some situations such as an unclear diagnosis of steroid responsive meningitis or polyarthritis a short course of NSAIDs and re-evaluation may be appropriate.

You have a dog with ITP and started pred 2 days previously. What would make you add a second agent?
If the dog needs multiple transfusions in a short space of time or if there is no improvement in platelet level within 7 days.

What agent would you use and why? Does your choice of second agent differ dependent on the underlying disease?
There is no clear evidence to say which immunosuppressant should be used as a second agent. I usually reach for mycophenolate or ciclosporin. Ciclosporin can be cost prohibitive so it's important to inform the owners of the costs involved before going down that route. There is evidence that leflunomide is a successful single agent in IMPA so that is usually my second line for IMPA cases.

Should we be using omeprazole and/or famotidine/ranitidine as a 'protective agent' for dogs on high doses of steroids?
Although there is evidence that high doses of steroids will cause gastric haemorrhage in experimental cases, there is limited evidence of clinical problems associated with this. There is also some experimental evidence that some of these drugs will contribute to ulceration. There is limited evidence that omeprazole or famotidine are beneficial in these situations and so I limit the use of omeprazole or famotidine to those cases where there is clear evidence of gastric haemorrhage, i.e. haematemesis or melena.
SA: I think the challenge here is those dogs with ITP where there is often evidence of melena at the time of presentation, but we know this isn't due to ulceration per se. However, I still don't use omeprazole in these dogs unless there is good supportive evidence of ulceration.

Do you modify your dose for very big or very small dogs?
Yes I do. In very big dogs, or those that are overweight I modify my dose. In dogs over 20kg I will dose on a mg/m2 basis, and in overweight dogs I will dose for their 'normal' body weight.

Can we vaccinate animals on immunosuppressives?
This is tricky, we probably shouldn't be using live vaccines and animals on immunosuppressives probably won't respond appropriately to the vaccine. So this may be a good reason to use titre testing to evaluate risk.

Listen to the podcast version of this on our website: **www.paragonreferrals.co.uk/cpd-podcasts**

To refer a case or for any enquiries, please contact our dedicated referrals team:
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DID YOU KNOW? Dr Rodney Ayl BSc BVSc MRCVS Diplomate ACVIM (Oncology) Diplomate ACVR (Radiation Oncology), our Oncology Specialist is one of the few double boarded radiation and medical oncology clinicians in the country with over 30 years experience in this area worldwide.

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Here at Paragon, we encourage potential referral clients to talk to Rodney, our Oncology Specialist, about their pet's cancer before any decisions on diagnostics or treatments are made. Rodney is able to help guide them whether they decide to treat with you, with us, or not at all. In addition, Rodney and his nurse, Dani, will shortly have completed the Linnaeus Bereavement Course, and will be able to offer support to owners through potentially difficult times.

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