



LUMBRYPARK  
VETERINARY SPECIALISTS

# VETCONNECT



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Dear friends and colleagues,

In this issue, we focus on internal medicine and present a Q&A session with Callum Patterson, veterinary surgeon at Pines Veterinary Clinic in Maidenhead, and Feline Specialist, Sam Taylor, who has been instrumental in introducing a new, legal treatment for FIP to the UK.

We would also like to extend a warm welcome to new team members, RCVS and EBVS® European Specialist in Veterinary Ophthalmology, MVDr. Renata Stavinhova, and RCVS and European Specialist in Small Animal Surgery (soft tissue), Faye Swinbourne.

Renata is looking forward to working alongside ophthalmologist, Denise Moore, growing the service and continuing to deliver world-class Specialist ophthalmology care. She has a particular interest in ophthalmic microsurgery, neuro-ophthalmology, ocular manifestation of systemic disease and inherited eye diseases.

Faye Swinbourne joins us as Head of Soft Tissue Surgery, in June. She has a keen interest in all aspects of soft tissue surgery and a particular interest in thoracic and abdominal emergency surgery. Faye will be working alongside Lissie Henderson, Veronique Livet and surgical resident Francesco Gemignani in delivering an exceptional service to our referring vets and pet owners.

We continue to welcome your feedback and suggestions as to how we can assist our colleagues in general practice. Please feel free to contact us with feedback and suggestions.

Thank you for your continued support.

**Colin Driver and Tim Sparrow**



**COLIN DRIVER**



**TIM SPARROW**



# INTERNAL MEDICINE SPOTLIGHT CLINICAL Q&A

## FIP in cats: finding your way around the novel treatments



### SAM TAYLOR

BVETMED(HONS) CERTSAM  
DIPECVIM-CA MANZCVS FRCVS  
INTERNAL MEDICINE  
SPECIALIST

**Callum:** A young cat presents with protein-rich ascites and pyrexia. It has a positive PCR for feline coronavirus (FCoV) on the fluid and you make a presumptive diagnosis of FIP. The owner has read about treatments online, what should we be advising?

**Sam:** It is a very exciting time for the treatment of FIP. Whilst black market drugs have been around for some time, we now have legal efficacious medications via a specials manufacturer. Vets must not be involved in the use of illegally imported drugs but we can advise and administer remdesivir and GS-441524 (nucleoside analogues) obtained legally. We are currently recommending starting with 1–2 weeks of remdesivir injections (SC, although can be initially IV if the cat is very unwell) followed by oral GS-441524 tablets taking treatment up to 12 weeks (all being well). See [bit.ly/ISFMFIPprotocol](https://bit.ly/ISFMFIPprotocol) for the complete protocol and doses. Exclusively oral protocols have also been used and seem to be effective, but more data are needed.



### CALLUM PATTERSON

BVM&S MRCVS, VETERINARY  
SURGEON AT PINES  
VETERINARY CLINIC IN  
MAIDENHEAD

**Callum:** What factors should be considered when choosing to use the novel treatments?

**Sam:** Treatment is expensive and prolonged, so finances, commitment and cat friendly handling principles need to be discussed. Most owners can be shown how to give the remdesivir injections, but they could also be given at the clinic. Owners need to understand that whilst the treatment is effective, it is not 100% and relapse is possible, which can be upsetting. However, we are seeing complete and durable responses with cats being cured.

**Callum:** What response should we expect during the treatment and what do we monitor?

**Sam:** Most cats will respond rapidly, within a few days. There is a low risk of transient worsening of pleural effusion necessitating drainage – this then improves in most cases. Pyrexia should resolve and appetite improve in 2–3 days. Effusions should have resolved within around 2 weeks or a dose increase may be needed. Blood-work abnormalities can be monitored (e.g. hyperglobulinaemia) and should again resolve in a few weeks and certainly be normal at 6 weeks and 2–4 weeks before stopping therapy. The level of monitoring will depend on finances and clinical condition, but re-checking body weight is important as weight should increase as they improve or grow, and this can result in the mg/kg dose dropping. Generally, a re-check after 1–2 weeks, bloods at 6 weeks and again 2–4 weeks before considering stopping therapy. Importantly, there is no need or benefit in monitoring serum FCoV antibodies which can remain present and even at high levels for many months after exposure to coronavirus alone.

**Callum:** What side effects have been seen with remdesivir and GS-441524?

**Sam:** Relatively few. Pain on injection of remdesivir (see above link for tips on reducing), mild elevations in ALT and after IV injection cats can seem nauseated for a few hours. All adverse reactions should be reported to the specials manufacturer so they can keep a record, but the treatments seem well-tolerated.



**Figure 1:** Remdesivir is proving effective in the treatment of FIP

**Figure 2:** Ascites is a common presentation of FIP

**If you have a case of FIP that you want to ask advice on, you can contact the FIP advice email manned by feline specialists at [fipadvice@gmail.com](mailto:fipadvice@gmail.com) or Lumby Park.**

# MEET THE INTERNAL MEDICINE TEAM

Our team has grown over the last two years, we hope you have enjoyed putting faces to names. We would also like to meet you!

Please do come along to our Medicine CPD day, being organised for summer-autumn 2022. Look out for upcoming information on this.

In the meantime, if you have a medicine case you would like to discuss or refer please do reach out. We look forward to working together to achieve the best for all our patients.

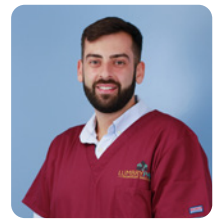
## The Medicine Team, Lumby Park Veterinary Specialists.



**AMY BAILEY**  
INTERN



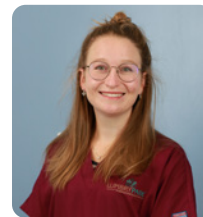
**ELIANA DOYLE**  
INTERN



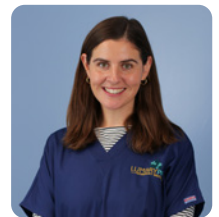
**XAVIER SALORD TORRES**  
RESIDENT



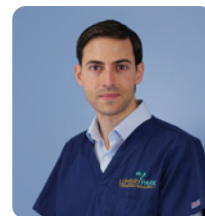
**SARAH CAULFIELD**  
RESIDENT



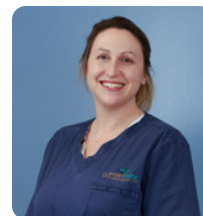
**CLARISSE D'AOÛT**  
REFERRAL CLINICIAN



**DEE MULLOWNEY**  
SPECIALIST



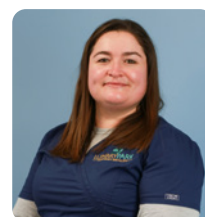
**SHAUN CALLEJA**  
REFERRAL CLINICIAN



**SAM TAYLOR**  
SPECIALIST



**PIETER DEFAUW**  
SPECIALIST



**SOPHIE KEYTE**  
SPECIALIST AND  
HEAD OF SERVICE



# CASE STUDY

## An interesting case of protein losing enteropathy



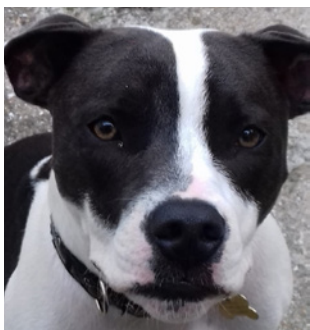
**DEE MULLOWNEY**

MVB DIPACVIM DIPECVIM MRCVS  
AMERICAN AND EBVS® EUROPEAN  
VETERINARY SPECIALIST IN SMALL  
ANIMAL INTERNAL MEDICINE

Here we present an Internal Medicine case report that demonstrates both multi-disciplinary teamwork between our Internal Medicine, Anaesthesia, Diagnostic Imaging and Nursing teams and our ongoing collaboration with our referring vets to facilitate chronic case management.

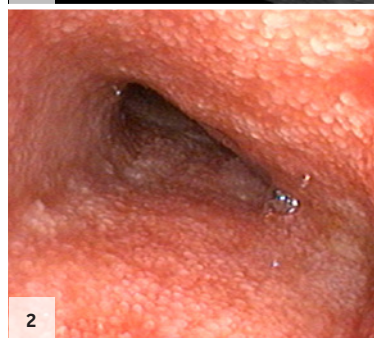
Cases of chronic diarrhoea can be challenging to manage and frustrating for owners. Although outcomes are varied, many of these cases can improve clinically with appropriate management. Diarrhoea is usually considered chronic if there is no sign of improvement after 14 days. Initial investigations of chronic diarrhoea include ruling out non-gastrointestinal causes, for example endocrine disease (hypoadrenocorticism), pancreatic disease (exocrine pancreatic insufficiency), and hepatic disease. Chronic diarrhoea should be classified as large intestinal, small intestinal (see Table 1.) or mixed in origin.

Ernie was referred to the Internal Medicine Service at Lumbry Park for further investigations of a two-month history of chronic small intestinal diarrhoea and 1.3kg weight loss in six weeks. Ernie was fed a complete commercial dog food and was up to date with flea and worm treatment and vaccinations. Investigations had been performed at Ernie's local vets where hypocobalaminemia (cobalamin 112pmol/l



**Table 1:** Clinical signs associated with small and large intestinal diarrhoea

Clinical sign	Small intestinal diarrhoea	Large intestinal diarrhoea
Tenesmus (straining to defecate)	Absent	Present
Mucus in faeces	Absent	Present
Blood in faeces	Melena (black faeces)	Fresh blood in faeces
Weight loss	Sometimes	Rarely
Volume	Large volume	Normal volume



**Figure 1:** Image of abdominal ultrasound of the jejunum showing hyperechoic mucosal striations.

**Figure 2:** Ernie's duodenum showing evidence of hyperaemic mucosa and dilated, fat-filled lacteals.

**Figure 3:** Ernie's ileum showing evidence of lacteal dilation.

reference interval [RI]; 200–408) and panhypoproteinaemia (total protein 32g/l (RI: 50–72), albumin 16 g/l (RI: 26–40), globulin 16 g/l (RI: 19–46)) were documented. Concern was raised for a protein losing enteropathy (PLE) and Ernie was referred to us for further investigations.

Other differential diagnoses of hypoalbuminemia include hepatic insufficiency and protein losing nephropathy (PLN). Ernie had no evidence of hepatic insufficiency on biochemistry (Table 2.); urea, glucose and bile acids were within normal limits. Mild hypocholesterolaemia was present, however this is also a common finding in both liver and malabsorptive diseases such as protein losing enteropathies. Urinalysis including urine protein to creatinine ratio (UPC) was also performed to exclude a PLN. Many dogs with chronic

**Table 2:** Biochemistry results for Ernie

Test	Result	Units		Ref Interval	
<b>Chemistry</b>					
Total Protein	32.0	g/l	LOW	50.00 - 72.00	
Albumin	13.0	g/l	LOW	26.00 - 40.00	
Globulin	19.0	g/L		19.00 - 46.00	
A:G Ratio	0.7			0.50 - 1.60	
ALP	24	U/l		12.00 - 83.00	
ALT	23	U/l		13.00 - 78.00	
Gamma GT	5.0	U/l		1.00 - 14.00	
Total Bilirubin	8.0	umol/l		0.00 - 16.00	
Urea	6.6	mmol/l		1.70 - 8.50	
Creatinine	83	umol/l		20.00 - 124.00	
Phosphorous	1.09	mmol/l		0.80 - 1.85	
Calcium	1.86	mmol/l	LOW	2.20 - 3.10	
Cholesterol	2.6	mmol/l	LOW	2.80 - 8.30	
Glucose	6.3	mmol/l		3.30 - 7.10	
Sodium	147	mmol/l		139.00 - 154.00	
Potassium	4.1	mmol/l		3.60 - 5.60	
Na:K Ratio	35.85			25.00 - 37.00	
Chloride	111	mmol/l		102.00 - 122.00	
<b>Endocrine</b>					
v-COR	218	nmol/L		50.00 - 250.00	

diarrhoea will respond to a strict hydrolysed diet trial, however concerning clinical signs such as marked weight loss, poor body condition, muscle or hypoalbuminemia influence our decision to perform endoscopy prior to a diet trial. Endoscopy of the gastrointestinal tract is particularly useful for obtaining mucosal biopsies in PLE as these patients are at an increased risk of dehiscence following full-thickness biopsy.

On physical examination, Ernie had mild muscle wastage and rectal examination documented liquid diarrhoea. The remainder of his clinical examination was unremarkable with a body condition score of 5/9 and normal muscle condition. Serum biochemistry documented persistent panhypoproteinemia, hypoglobulinemia, hypoalbuminemia, hypocholesterolemia and total hypocalcaemia (1.86 mmol/l RI 2.20–3.10) which was confirmed as ionised hypocalcaemia (Ca<sup>++</sup> 1.09 mmol/L). Ionized hypocalcaemia is a common finding in cases of PLE secondary to Vitamin D and calcium malabsorption. Abdominal ultrasound under sedation was performed by our specialist diagnostic imaging team. There were hyperechoic mucosal striations visible in the small intestine (Figure 1.). This is a common finding in cases of intestinal lymphangiectasia, a form of PLE. Upper and lower gastrointestinal endoscopy was performed under general anaesthesia. We could see lacteal dilation in the duodenum and ileum (Figures 2 and 3). Biopsies were obtained from the stomach, duodenum, colon and ileum and submitted for histopathology which showed mild, diffuse, chronic active enteritis with mild villous blunting and lymphangiectasia in the duodenum and ileum. There was also evidence of lymphoplasmacytic and neutrophilic enteritis and gastritis.

Intestinal lymphangiectasia is characterized by marked dilation and dysfunction of intestinal lymphatic vessels. Abnormal lacteals

rupture, and protein-rich lymph leaks from villi into the intestinal lumen resulting in hypoalbuminemia. Some patients with lymphangiectasia will respond to a fat-restricted, calorically-dense, easily-digestible diet. We discharged Ernie from hospital with instructions to feed an exclusive diet of Royal Canin low fat gastrointestinal food. Dogs with hypoalbuminemia are predisposed to forming blood clots so we dispensed an anti-platelet drug (clopidogrel) to be given until serum albumin concentration normalised. We also prescribed cobalamin supplementation to treat his hypocobalaminemia, a common finding in cases of PLE as the diseased intestine fails to absorb cobalamin. Ernie initially showed improvement and when he revisited Lumbry Park two weeks later, his hypoalbuminemia had improved and diarrhoea had resolved. Sadly, one month later, Ernie returned to his local vet as he had a recurrence of diarrhoea. Serum biochemistry documented a worsening hypoalbuminemia. Ernie's local vets contacted us for advice and we recommended a tapering course of immunosuppressive dose of prednisolone (2mg/kg once daily for two weeks and then reduced by 20–30% every 2–3 weeks as long as clinical signs and hypoalbuminemia remain in remission) as Ernie also had lymphoplasmacytic enteritis and gastritis which could represent concurrent inflammatory bowel disease. Thankfully, Ernie's clinical signs and albumin levels subsequently improved.

This interesting case demonstrates the importance of a multidisciplinary approach to complicated cases with collaboration between the Internal Medicine Service, Diagnostic Imaging Service and Anaesthesia Service. We also maintained communication with Ernie's local vets to provide ongoing advice to maximise management of Ernie's disease. The Internal Medicine Team are happy to discuss or accept referral any of your challenging gastrointestinal cases. Please do get in touch.



✚ ANAESTHESIA AND ANALGESIA

✚ EMERGENCY AND CRITICAL CARE

✚ DIAGNOSTIC IMAGING

✚ INTERNAL MEDICINE

✚ ONCOLOGY

✚ ORTHOPAEDICS

✚ SOFT TISSUE SURGERY

✚ CARDIOLOGY

✚ NEUROLOGY AND NEUROSURGERY

✚ OPHTHALMOLOGY

✚ PHYSIOTHERAPY

## GET IN TOUCH

**Tel: 01420 481777 Fax: 01420 375185 Email: [enquiries@lumbrypark.co.uk](mailto:enquiries@lumbrypark.co.uk)**

**To refer a case visit: <https://lumbrypark.co.uk/for-vets/refer-a-case>**

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