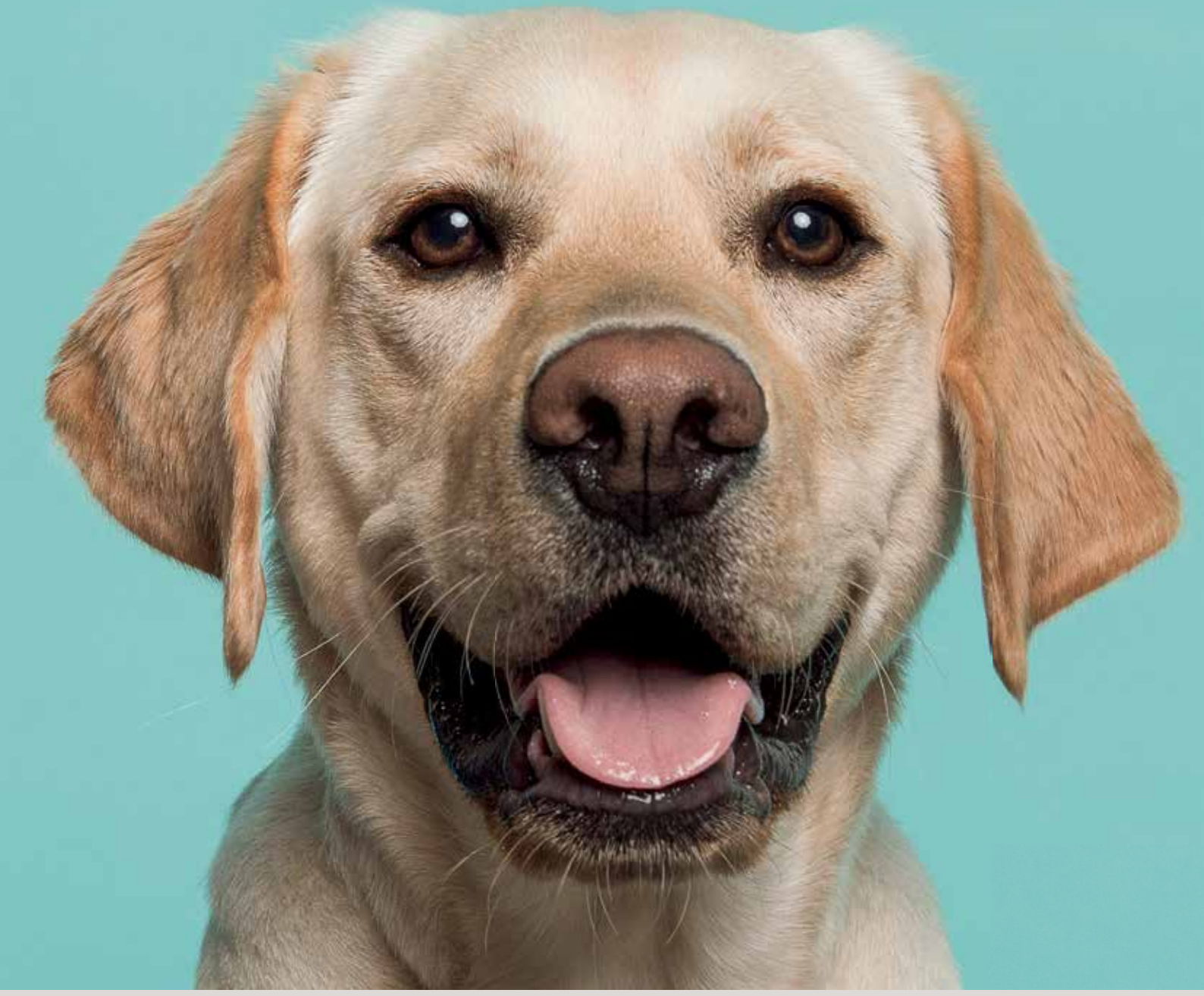
JANUARY 2019

Companion

INFORMING THE BSAVA COMMUNITY



Making a success of weight management

- BSAVA governance changes in the pipeline
- New in Companion – JSAP abstracts
- Gender pay imbalance still a cause for concern

BSAVA
BRITISH SMALL ANIMAL VETERINARY ASSOCIATION

Contents

3 **BSAVA News**
Latest from your Association

4 **Clinical Conundrum**
Ffion Lloyd considers the causes of peri-orbital swelling in a cat

8 **BSAVA Governance**
BSAVA ringing in the changes

10 **How to...**
Approach canine urinary tract infections

16 **BSAVA Policy**
Adrienne Conroy, Head of BSAVA Policy, reports on BSAVA policy activities

20 **Vets Cymru**
New Welsh CPD event launched

22 **BSAVA Congress**
Treating obesity as a disease

24 **BSAVA Bourgelat Award**
Professor Mike Herrtage is the 2019 Bourgelat Award winner

26 **BVA Congress News**
Is gender discrimination no longer a serious problem?

28 **Companion Interview**
Grace Dickinson talks about her work as an animal trainer

30 **JSAP Abstracts**
Small animal practice research update

34 **Regional Accents**
News from the BSAVA regions

36 **CPD diary**
What's on in your area

39 **Notes on**
Holter recording

Additional stock photography **Shutterstock**

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JSAP Editor's choice

Assessing quality of life in dogs with portosystemic shunts

As veterinarians the treatment we give is often focused on correcting the medical problems we diagnose in our patients. However, owners are usually more focused on what might be termed quality of life. Fortunately, these two objectives can often be attained by the same therapies but it can be instructive to compare outcomes so as to make sure that our interventions do what we want them to do. In this month's issue of JSAP, Bristow and colleagues explain the development of a quality of life questionnaire for dogs treated for portosystemic shunts. Interestingly, owners regarded the dogs' quality of life very highly, in fact higher than would seem appropriate based on outcomes obtained from medical questionnaires. These results pose questions about which outcomes should be used to define treatment success and similar considerations might apply to many other conditions!

Full article available at
https://doi.org/10.1111/jsap.12927

Commentary by Nick Jeffery, *JSAP* Editor.
Bristow P, Lipscomb V, Kummeling A *et al.* (2019) Health-related quality of life following surgical attenuation of congenital portosystemic shunts *versus* healthy controls. *Journal of Small Animal Practice* **60**, 21–26

JSAP Abstracts... see page 30

As readers may be aware, printed copies of *JSAP* are now only sent to BSAVA members who request them. To ensure that *Companion* readers remain alerted to the content in *JSAP*, each month we will provide abstracts of the articles. *JSAP* content aims to provide material that will change clinical practice and we hope that these abstract tasters will whet your appetite for the main course!

All members (except veterinary nurse student members) have access to *JSAP* online, including the full archive, via the BSAVA website – you can also sign up for new content alerts via Wiley Online Library. If you are eligible to receive printed copies of *JSAP* and wish to change your mailing preferences, you can do so at any time via your account in the MyBSAVA section of the BSAVA website. A number of additional copies of the January issue are available for those who wish to continue to receive printed copies and have not yet updated their preferences.

Log on to **www.bsava.com** to access the JSAP archive online.

BSAVA Congress heads North

In an exciting development, the BSAVA is delighted to announce a move to Manchester Central for its 2021 Congress. The award-winning converted railway station venue will bring a breadth of new delegate and exhibitor experiences for what is the largest and longest running small animal congress in Europe.

The BSAVA Congress has been held at the ICC Birmingham for almost three decades with 2020 marking its 30th year in the city. The meticulously considered move to Manchester is in tune with the evolving needs of delegates, while the new geographical location means continued good accessibility from the north and the south, supported by a highly effective travel infrastructure.

Angharad Belcher, Head of BSAVA Congress said, "We've had a first-class experience in Birmingham and we could not have asked for more from the venue. We know that 2019 and 2020 will continue to be popular; however, it's time to move BSAVA Congress forward and revitalize the offering to our delegates and exhibitors by bringing everything into one building. The move to Manchester enables us to invest even more in speakers and delegate experiences to make BSAVA's education programme truly unsurpassable."

Manchester brings a vibrant new feel to BSAVA Congress, while ensuring world class CPD is seamlessly delivered at the heart of the event. As one of the largest convention centres in the UK, the move to Manchester Central will ensure that the exhibition, lectures and demonstrations will be held under the same roof, maximizing the use of delegates' time at Congress.

Combined with wider scope for a varied social programme in city venues, this new approach will create a more efficient, exciting and educational event for vets and vet nurses to equip themselves with enhanced skills to support the well-being of the nation's pets. It takes the entire Congress experience to the next level.

BSAVA President Philip Lhermette said, "It's very much a new city for a new Congress and celebrations will be in order. Manchester lends itself perfectly to a timely transformation for Congress. We will be completely rebranding the event, modernizing the CPD programme and making the best possible use of every minute of every delegate's time over the full 4 days. We have been working closely with the city and venue in practical terms to offer a whole suite of options to delegates and exhibitors, from irresistible new socials and extensive accommodation choices, to easy transport routes."

BSAVA Congress Committee Chair Graeme Eckford continued, "As a charity and a not-for-profit organization, all the money generated through our activities is reinvested into the veterinary profession to meet our charitable aims. We are excited that the scope of Manchester enables us to continue to build on our considerable strengths, bringing even more science, and an even stronger programme to even more delegates."

Further plans on the new venue will be released at a launch event at Congress 2019.

Calling all charity vets

The Association of Charity Vets, a BSAVA affiliated group, is staging a 2-day conference at the Mary Stewart Building, Glasgow Vet School on Saturday 12 and Sunday 13 January. Topics include BOAS, dentistry, cat behaviour, maintaining our well-being, backyard chickens and a session on clinical decision making in charity clinics.

The meeting will be of particular interest to those vets and VNs working directly for a charity, if your practice provides services to shelters, you provide charitable help to patients or you are interested in pragmatic care.

The cost (including 2019 membership) for both days is £100 (£30 for students), Saturday £70, or Sunday £30. Full details are available at **www.associationofcharityvets.org.uk**.

Beat the Congress early bird deadline

There's now less than 1 month to enjoy big savings on BSAVA Congress registration. Up to **20% discounts** are available for those early birds booking by **31 January 2019**.

Join us for over 450 hours of lectures and practical sessions with international speakers and experts, a dedicated small-animal exhibition showcasing the latest products and innovations, and countless networking opportunities and social events.

New initiatives being introduced in 2019 include a crèche, faster registration and improved eating and seating.

Visit **www.bsavacongress.com** to register online today.

New pocket book out now

The second edition of the *BSAVA Pocketbook for Vets* is now available. Building on the success of the previous edition, this new book retains the functionality and useful features that made its predecessor so popular, while having a stronger focus on quick reference emergency and critical care information.

- How to recognize and treat common poisoning cases, including anticoagulant rodenticides, non-steroidal anti-inflammatory drugs (NSAIDs), grapes and chocolate.
- Pain scoring in cats and dogs.
- Cardiopulmonary resuscitation (CPR), covering both basic and advanced life support and drugs required for treatment.

Purchase your copy of the *BSAVA Pocketbook for Vets, 2nd edition* online from the BSAVA bookshop (**www.bsava.com**) or call our Membership Services Team on 01452 726700.

Available in the BSAVA Library: DOI: 10.22233/20412495.0119.3

Clinical conundrum

Ffion Lloyd, anaesthesia intern at the Small Animal Teaching Hospital, University of Liverpool, invites *Companion* readers to consider the causes of peri-orbital swelling in a cat she saw while an intern at Northwest Veterinary Specialists.

Case presentation

A 2-year-old female neutered domestic shorthair presented to the primary veterinary surgeon with acute onset peri-orbital swelling and a small cutaneous wound on the right upper eyelid; injuries were presumed to be due to fighting with another cat. There was no associated injury to the right eye. Symptomatic treatment was initiated with a subcutaneous injection of a long-acting antimicrobial (cefovecin) and non-steroidal anti-inflammatory (meloxicam) medication. The cat re-presented on the following two consecutive days with anorexia and pyrexia (rectal temperature of 40˚C) and on both occasions was treated with injections of buprenorphine and amoxicillin/clavulanic acid. The following 48 hours saw a lack of any appreciable clinical improvement. In addition, subcutaneous oedema of the head and left lateral cervical region had developed. A bacteriology swab was taken from the open area of the wound and submitted for culture and sensitivity testing. A biochemistry profile was unremarkable apart from raised glucose (11.8 mmol/l) which was presumed to be due to stress. Haematology was not performed. An FIV and FeLV patient-side ELISA test was negative. The cat did have free access outdoors and frequently hunted although no previous instances of fighting were reported.

The cat was hospitalized for intravenous fluid therapy, further antimicrobials (marbofloxacin and metronidazole) and furosemide, in an attempt to reduce the oedema. There was no significant clinical improvement with this treatment protocol and severe progression of the facial swelling was evident. The cat was subsequently referred for further assessment, 7-days following initial presentation.

Physical examination

On presentation at the referral centre, the cat was dull but responsive, with a normal body condition score of 5/9. Rectal temperature was 40˚C. Thoracic auscultation was unremarkable with a heart rate of 160 beats per minute and a respiratory rate of 24 breaths per minute. There was marked facial swelling, predominantly of the left side, extending ventrally and dorsally to the thoracic region. A moderate serosanguinous facial discharge from the left-sided oedematous region was present, along with bilateral blepharospasm. Clipping of the facial hair under sedation revealed a focal area of skin necrosis measuring approximately 4 x 2 cm located at the lateral palpebral fissure of the right eye.

Create a problem list for this patient

- Marked subcutaneous facial oedema with associated serosanguinous discharge
- Focal necrosis of peri-orbital skin
- Bilateral blepharospasm
- Persistent pyrexia
- Anorexia

Consider differential diagnoses for this patient

The most pertinent clinical sign was the degree of facial oedema which was progressive in extent and severity. The anorexia was presumed to be secondary to the pain and discomfort associated with the facial pathology (as well as the pyrexia), as it had developed in conjunction with its appearance. Pyrexia in association with the other clinical signs could be due to pain, sterile inflammation or systemic viral/bacterial infection. Blepharospasm was suspected to be due to the swelling and discomfort of adjacent tissues; no ocular pathology was noted.

The most likely cause of the facial pathology was considered to be a traumatic injury, such as a cat bite or other penetrating wound, particularly given the initial appearance of a small, focal wound at the primary care practice. A foreign body resulting from a penetrating wound was also possible. Other differentials pertaining to the marked oedema included an allergic response, lymphoedema due to an obstructive mass lesion, neoplasia and immune-mediated disease.

Secondary infection was suspected in this cat, due to the apparent lack of response to treatment and the progressive nature of the clinical presentation. Results for bacterial culture were pending at this point. Viral infection was considered possible but less likely.

How would you proceed with this case?

A computed tomography (CT) scan of the head and neck region was performed under sedation (medetomidine 0.01 mg/kg and methadone 0.3 mg/kg i.v.) to gain additional information about the soft

  Available in the BSAVA Library: DOI: 10.22233/20412495.0119.4

tissues involved in the swelling and oedema and to search for any foreign bodies that may be present. The scan confirmed extensive facial and cervical oedema and cellulitis, regional lymphadenopathy (Figure 1) and a small pocket of fluid located caudal to the left eye (Figure 2). Pre- and post-contrast images did not indicate the presence of a foreign body, although a foreign body of organic nature could not be completely excluded, as CT exhibits poor sensitivity for this type of material. The lymphadenopathy was thought to be reactive (secondary) in nature, but a primary cause of lymphoma could not be ruled out at this stage.

While under sedation, debridement of necrotic skin from the left lateral side of the face was performed, followed by lavage with sterile saline. A soft absorptive dressing was applied and stapled to cover the left eye and debrided area. The palpebral fissure was severely reduced in size due to extensive peri-orbital swelling, preventing full visualization of the cornea.

> “Pre- and post-contrast CT images did not indicate the presence of a foreign body, although a foreign body of organic nature could not be completely excluded.”

Provision of adequate analgesia was a significant concern in this case as the facial injuries were extensive and clearly impacting welfare. An analgesia plan consisting of methadone 0.3 mg/kg i.v. q4h and a constant rate infusion of ketamine (0.3 mg/kg/h i.v.) was initiated. In addition, antimicrobial therapy was continued with marbofloxacin (2 mg/kg i.v. q24h) and metronidazole (10 mg/kg i.v. q12h). Intravenous fluid therapy with Hartmann's solution was administered at maintenance rate (2 ml/kg/h). The cat was regularly assessed for pain; appetite was reduced but stable. Placement of an oesophagostomy feeding tube was considered if appetite failed to improve.

On day 8, 24-hours following referral, bacterial culture results from the facial discharge were received from the primary care practice. These confirmed a growth of *Staphylococcus aureus* with a wide sensitivity profile, including penicillin, ampicillin, potentiated amoxicillin, cephalexin, cefovecin, doxycycline, clindamycin, lincomycin, enrofloxacin, trimethoprim/sulphonamide and marbofloxacin.

How do the culture and sensitivity results impact on the management of the case?

The lack of apparent improvement despite appropriate antibiosis as suggested by culture and sensitivity testing was concerning. The cat had received

FIGURE 1: Transverse CT image showing cellulitis, oedema and lymphadenopathy (arrowed).

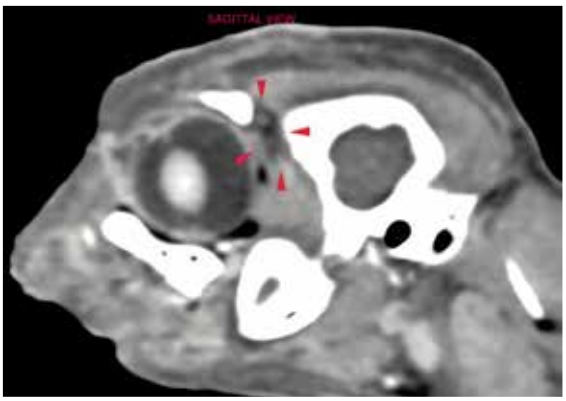


FIGURE 2: Sagittal CT image displaying fluid pocket located caudal to the left eye (arrowed).

theoretically effective antibiotic therapy at the primary care practice as well as at the referral centre, but the progression of the facial wounds and the development of severe cellulitis was contrary to the reported sensitivity of the cultured infection. In addition, multiple raised erythematous lesions measuring approximately 3 mm had developed and were noted on the dorsal aspect of both antebrachii when the areas were clipped for intravenous catheter placement on day 9. The facial dressing was removed under sedation (medetomidine 0.005 mg/kg i.v.), but there had been no significant improvement in the appearance of the site.

The lack of response to medical therapy, coupled with the development of additional skin lesions, raised the suspicion of systemic immune-mediated disease in this patient. Punch biopsies of the antebrachial lesions were collected under sedation and submitted for histopathological evaluation. A fine-needle aspirate was performed of the facial soft tissue swelling which yielded a serosanguinous discharge consistent with peripheral blood when examined cytologically. The treatment protocol was continued while awaiting biopsy results.

Histopathology and blood results

A haematology blood panel was performed (Table 1) revealing a mild anaemia and neutropaenia. The remainder of the haematology panel was within normal limits. A manual PCV was 24%. The anaemia was likely due to intermittent blood loss from the facial wounds, as well as the presence of chronic disease (day 10 following initial presentation at the primary care practice). A blood smear showed a moderate population of microcytic, hypochromic red blood cells, indicative of iron deficiency from chronic blood loss. An aggregate reticulocyte count performed from the smear was consistent with mild regeneration (58 x 10^9/l). The low neutrophil count was presumed to be due to excessive consumption, given the presence of infection: a blood smear confirmed the neutropenia with a left band shift, which was deemed supportive of a consumptive aetiology.

Histopathology from the antebrachial lesions confirmed the presence of a moderate necrotizing, neutrophilic and eosinophilic folliculitis with intracytoplasmic eosinophilic inclusion bodies with moderate ulceration. This specific presentation was pathognomonic for a poxvirus infection.

Revised management protocol given diagnosis of poxvirus infection

Given the contagious and zoonotic potential of poxvirus infection,[1,2] the cat was placed in a dedicated isolation ward. Antibiotic therapy was continued with marbofloxacin and metronidazole (both at previously stated dose rates). Analgesia was provided with gabapentin (50 mg orally q8h), as well as the continuation of methadone and ketamine constant rate infusion at the previously stated doses. Care of the facial wounds and associated cellulitis was maintained with daily dressing changes and gentle cleaning under sedation and lubrication of both eyes. Small visible improvements in swelling reduction and overall demeanour were noted, as well as significant increases in appetite (days 10–12).

Given the chronic oedema of the head and cervical regions, topical medical leech therapy was initiated on day 12 under sedation (Figure 3), in an attempt to reduce venous congestion and improve blood flow to the area. Chlorphenamine was administered prior to leech application at a total dose of 2 mg intravenously, and continued every 8 hours, to reduce the risk of anaphylactic reaction; a known complication of leech therapy.[3] A total of three separate leech applications were performed on consecutive days, along with continuation of analgesia, antibiosis and intravenous fluid therapy. Dressing changes were performed at the time of each leech application.

By day 15 a noticeable reduction in swelling was apparent, accompanied by the presence of healthy granulation tissue over the left temporal region and overall decreased exudate. The ketamine constant rate infusion was discontinued at this point and methadone was substituted for buprenorphine at a dose of 0.02 mg/kg i.v. q8h. Intravenous antimicrobials were continued over the following 8 days.

Further management and outcome

Maintenance of a consistently good appetite facilitated a change to exclusively oral medications on day 23 and discontinuation of intravenous fluid therapy, coinciding with further significant improvements in facial appearance and demeanour. Residual skin necrosis was visible on the left side of the cervical region, as well as the ventral mandible and sternum – these areas were debrided under sedation on day 27, exposing healthy granulation tissue underneath. The cat was discharged home on day 33, following further debridement and lavage of remaining necrotic areas on the face and sternum.

Surgical treatment was performed under general anaesthesia on day 41, which included a local advancement flap from the right side of the neck to

Parameter	Result	Reference interval
RBC (x10^{12}/l)	**4.77**	**6.54–12.2**
HCT (%)	**22.7**	**30.3–52.3**
MCV (fl)	**33.9**	**35.9–53.1**
HGB (g/dl)	**6.8**	**9.8–16.2**
NEU (x10^9/l)	**1.3**	**1.48–10.29**
RDW (%)	21.3	15–27
WBC (x10^9/l)	9.45	2.87–17.02
BASO (x10^9/l)	0.05	0.01–0.26
EOS (x10^9/l)	0.69	0.17–1.57
LYM (x10^9/l)	2.84	0.92–6.88
MONO (x10^9/l)	0.6	0.05-0.67

TABLE 1: Haematology results (abnormal results in bold).

FIGURE 3: Commencement of topical leech therapy under sedation.

close the granulating defects remaining on the left side of the neck and face. A 5 mm area was left open to heal by secondary intention ventral to the left eyelid, due to insufficient skin availability. The cat recovered well from surgery and the flap remained viable.

Final discharge home occurred on day 43, along with oral medications including potentiated amoxicillin (total dose of 50 mg q12h, prescribed due to its availability in a liquid form which was preferred by the owner), meloxicam (0.05 mg/kg q24h), and gabapentin (25 mg total dose q8h). The owner reported a consistently bright demeanour, good appetite and satisfactory progress of the surgical flap 5-days later (Figure 4). Tertiary referral was sought for ophthalmology assessment, due to residual conjunctival hyperemia and corneal ulceration, apparent once the peri-orbital swelling had reduced.

Discussion

This case presented a challenge in terms of attainment of a true diagnosis and the chronic nature of the pathology and its progression. At each step, a logical assessment of the available information and prioritization of the patient's comfort and welfare facilitated gradual and cumulative improvements.

Poxvirus is a relatively rare diagnosis in domestic cats,[4] but its presence in this case readily explains the pathology and chronic disease course witnessed. Poxviruses are endemic pathogens in Europe, that frequently result in localized skin lesions, and less commonly in systemic disease in infected cats.[4] Infection is usually due to contact with wild rodents, which act as reservoir hosts for the virus.[1] Initial infection with poxvirus usually presents as a focal wound that may be mistaken for a bite or sting[1] usually on the head or forelimbs, which represents the original site of contact with the rodent host,[5] the focal wound above the eye apparent on initial presentation is likely to represent this. Secondary skin lesions develop due to a cell-associated viraemia.[1]

An unusual presentation of poxvirus infection is exhibited by this case, as most infected adult felines present only with focal skin lesions.[5] Severe systemic lesions and illness are usually only seen in immunocompromised or young individuals, although mild and transient pyrexia, depression and diarrhoea have been documented in some cases,[5] evidence of immunosuppression was unable to be demonstrated in this cat. There are a handful of reports in the literature of similarities to the skin and soft tissue pathology exhibited by this patient, including a cat with gross swelling of a forelimb, skin necrosis and widespread erythema in a confirmed poxvirus infection.[5] Additionally, the specific feature of facial cellulitis is mirrored in a human child with poxvirus infection contracted from domestic cats[2] (despite cat–to–human transmission being rare[1]).

To further strengthen the diagnosis of poxvirus infection, additional testing could have been considered; positive immunohistochemistry, electron microscopy, PCR analysis, or demonstration of a rising antibody titre would have supported the histopathological diagnosis.[5] These supportive tests were not carried out in this case due to financial restrictions.

Utilization of relatively novel and infrequently used medical leech therapy was based on an evaluation of the persistent pathology; excessive oedema and reduced blood flow to the facial and cervical soft tissues would potentially benefit from the anti-coagulant and fluid-consumptive properties of medical leeches. The application of leeches is a long-established treatment in human medicine, utilized for the analgesic, anti-inflammatory and anticoagulant effects of leech saliva, which contains a variety of bioactive molecules.[6] These molecules exert several clinical effects, including platelet inhibition, thrombin regulation[6] and vasodilation,[7] this causes prolonged bleeding from and promotes increased blood flow to the site of application.[6] In this particular case, the removal of excess blood from the congested facial tissue by the leeches was beneficial, as the resulting reduction in capillary filling pressure allowed for reperfusion of the arterial capillary beds,[3] an attractive theoretical prospect that was likely to lead to quicker recovery times and tissue healing for the cat.

Reports of the therapeutic use of leeches in veterinary patients are limited, but are described singularly in cats for the treatment of polycythaemia vera[7] and venous congestion in a forelimb caused by a constrictive injury.[3] This case consequently presents an additional indication for this novel treatment modality. C

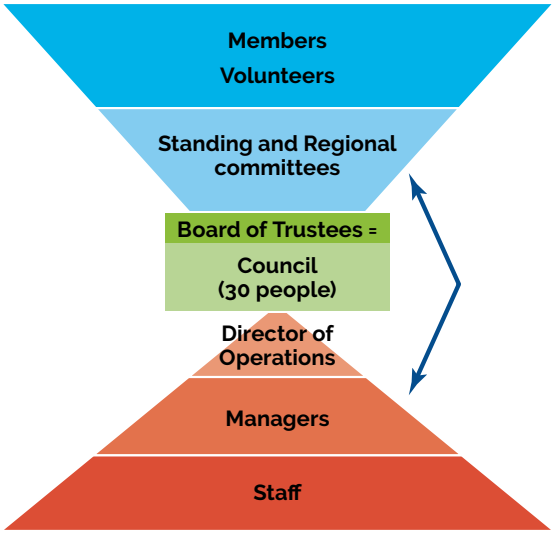
FIGURE 4: Image taken at re-check appointment 5-days post-operatively.

References and further reading are available at www.bsavalibrary.com and in *e-Companion*.

Proposed BSAVA changes

BSAVA aims to become more flexible and accountable, with some changes to the way we run ourselves being proposed at the next AGM on Sunday 7 April 2019 at the BSAVA Congress in Birmingham.

How is the BSAVA currently run?



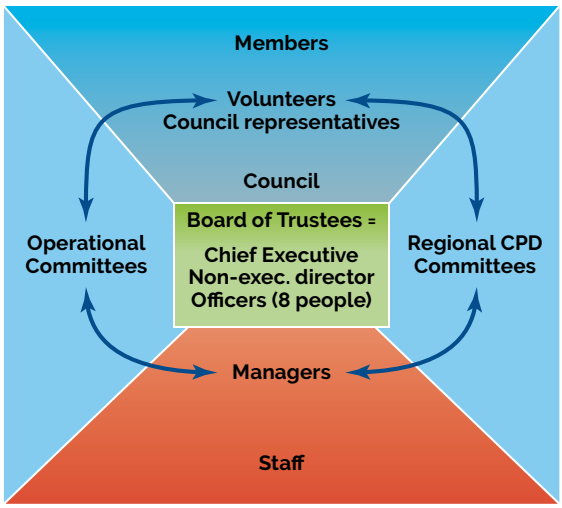
The BSAVA is both a charity and a company that is run for the members by about 350 volunteers who are supported by staff at the Association's headquarters at Woodrow House. Some of the volunteers are also directors and sit on the BSAVA Council, which meets 3-times a year. The six officers are a small subgroup of council members who meet more frequently than the main council. Their role is to deliver the strategic plan, look at the finances and look for innovations that will deliver a better member experience; however, the officers cannot take any significant decisions without council approval. The chairs of the various committees are also part of council and meet an additional 3-times each year with the officers. The regional chairs also meet with the officers twice a year. Sounds complex? Yes, it is. Sounds like a recipe for confusion? Not as often as you would think. Sounds like it takes a long time to get anything done? We can't lie… it can be so.

Why does the BSAVA need to change?

We have been aware for some time that the BSAVA's organization lacked a certain amount of flexibility and accountability. The changing demographic, work pressures, client expectations, corporatization, technology and (at the time of writing) Brexit, are all putting pressure on the profession and the Association. The BSAVA is responding to those changes with many initiatives, such as the BSAVA Library (**www.bsavalibrary.com**), but organizational changes are also needed. For example, compared with other similar organizations, our board of directors (Council) is far larger than normal and meets too infrequently for the effective delivery of our aims.

David Doughty, the BSAVA's Governance consultant, has reviewed the Association's structure and function and various options for change have been discussed at Council. An independent assessment by the Professional Association Research Network (PARN) has confirmed that the current proposals are appropriate for a modern charity and professional association governance.

How do we want the BSAVA to be run?



The proposal is to have a small board of Trustees (directors) and a Council of members' representatives. The new Board will be the six current officers (veterinary volunteers) and at least two non-veterinary directors: an external non-executive director, who provides expertise on strategic development, and the chief executive officer, who runs Woodrow House.

The role of the Board will be to focus on the strategy of providing BSAVA members with gold standard resources in small animal clinical education and science. The role of Council will be to deliver the views of the members to Board. Council will nominate the officers at Annual General Meetings and the

  Available in the BSAVA Library: DOI: 10.22233/20412495.0119.8

members (as the 'shareholders' in the company) will be able to vote on these nominations. The new Council would meet 3-times a year as at present and would consist of 17 members as follows:

- An independent Chair (veterinary or non-veterinary)
- 12 Council Representatives – one from each BSAVA region
- 2 Past Presidents, who will provide the 'corporate memory'.
- 2 Chairs of Council committees (Audit and Risk and the Volunteer Development Committee)

How will these changes benefit members?

These changes will allow the BSAVA to adapt more rapidly to a profession that is itself being altered in the face of a swiftly changing world. They will also allow members to volunteer to a high level within the Association without the responsibility of becoming a company director.

The BSAVA will remain a charity, run by volunteers, for the good of the profession and the wider public. The BSAVA will still run congresses, postgraduate courses and CPD events around the country, as well as publish books, client leaflets and journals and fund clinical research by PetSavers.

What will members notice when these changes happen?

Nothing – at least, not initially. However, over time a more self-confident Association that seeks to promote membership more and deliver a better service to its existing members.

If you are interested in volunteering to help run the Association at any level – regional or one of the national committees or working groups then please contact our Volunteers Manager Carole Haile (**volunteer@bsava.com**). We are always looking for help and volunteering is a great opportunity for personal development, making new contacts and having great fun. Training will be provided.

Am I able to vote on these changes?

If you are a voting member of the BSAVA then you can vote at the AGM providing you attend in person or provide a proxy vote. You will receive an invitation to the AGM and a Proxy Form in March 2019.

HOW CAN I FIND OUT MORE?

Visit **https://www.bsava.com/About-us/Governance** or use this QR code to link to this page.

Send your questions to the Officers by email to **administrationofficer@bsava.com**.

How to approach canine urinary tract infections

This month, Simon Tappin, Editor of *Companion*, talks us through the approach to canine urinary tract infections.

Canine urinary tract infections (UTIs) are commonly encountered in small animal practice, usually signs are mild and easily treated; however, recurrent or recalcitrant infection can represent much more of a challenge. Accurate diagnosis of any inciting disease process and appropriate antibacterial treatment is essential as infection often recurs without identification and management of the underlying disease.

Treating dogs with UTIs is a frequent occurrence, with one study documenting that during their lifetime 14% of dogs will present with a bacterial urinary tract infection.[1] This was supported by a more general study looking at the caseload of a busy teaching hospital which demonstrated 3.9% of female dogs and 2.9% of male dogs examined had a positive urine culture.[2] Bacterial UTIs are more commonly documented in older dogs, with a median age of 9 years reported.[3] Bacterial UTIs are most commonly diagnosed in neutered females, followed by neutered males and then entire females; they are uncommonly seen in entire male dogs.[4]

What clinical signs should be expected?

Usually, dogs with a UTI present with a combination of more frequent urination (pollakiuria), increased urgency to urinate and strain (stranguria) or discomfort (dysuria) on passing urine. Some owners may also notice a change in odour or colour of the urine, noting the gross presence of blood or a darker or cloudy colour. Occasionally, the effects of UTI prompt presentation such as polyuria/polydipsia or signs of, possibly, confusion in geriatric dogs.

In some disease processes, such as diabetes mellitus or hyperadrenocorticism, or in dogs treated with long-term steroids for skin disease, UTIs are relatively common, but can be present in the absence of clinical signs and a urinary culture should be considered as part of the diagnostic evaluation of these cases and, where found, treated appropriately.[5,6]

Documentation of true asymptomatic bacteriuria in the absence of clinical signs and underlying disease process is occasionally documented and careful consideration should be given as to whether treatment is needed in these instances. In a study of normal entire adult male dogs, 9% had a positive urine culture.[7] This suggests that in a proportion of normal dogs the lower urinary tract is not sterile and that there is no effective way to tell between benign asymptomatic bacteriuria and that which may lead to significant UTI. As a result, treatment can be controversial and is usually suggested if there are signs of inflammation or other risk factors that the patient may not clear the infection, for example, those that are immunocompromised.[8]

What causes canine urinary tract infections?

The majority of canine UTIs are caused by bacteria, with *Escherichia coli* the most frequent causal agent.[9] Staphylococcus spp., Proteus spp., Klebsiella spp., Enterococcus spp. and Streptococcus spp. are also commonly identified. Most bacterial UTIs are caused by infection with a single microbial species, so cultures containing multiple organisms, especially if there are greater than three species present, suggest possible sample contamination.[2]

Urinary tract infections are usually classified as lower urinary tract infections of the bladder, urethra and prostate or upper urinary tract infections of the kidneys and ureters. Infection of the lower urinary tract can progress to the upper urinary tract if host defence mechanisms are impaired.[10] Most often, UTIs are the result of ascending bacterial infections with most of the organisms originating from the gastrointestinal tract or distal urogenital flora. Haematological spread of UTIs is uncommon due to the high vascularity of the renal cortex.[11]

Normal canine urine is not a good medium for bacteria to grow in due to its natural acidity and high urea concentration, both of which inhibit bacterial growth. Any disease process (e.g. renal failure, diabetes mellitus or liver disease) or drug therapy (e.g. glucocorticoids) that leads to less concentrated urine reduces this natural defence mechanism and increases the risk of possible urinary tract infection.[12,13] The placement of a urinary catheter is also a significant risk factor for the development of a UTI as it acts as a bypass to the defence mechanisms of the lower urinary tract (Figure 1). Several studies have documented increased risks of catheter placement: McDonell and

FIGURE 1: Placement of a urinary catheter is necessary for the management of many patients; however, it also represents a risk for the development of urinary tract infection.

  Available in the BSAVA Library: DOI: 10.22233/20412495.0119.10

colleagues[14] showed a 100-fold increase risk in the likelihood of developing a UTI during a period of hospitalization; and Bebenik and colleagues,[15] a 27% increase in the risk of developing a UTI for each day a closed indwelling urinary catheter was placed, a 20% increase in risk for every year older the dog was, and a 450% increase in risk if antibacterials were given.

Diagnosis

Prior to treatment it is important to ascertain whether a urinary tract infection is uncomplicated or complicated. Uncomplicated UTIs present as a single, acute episode in the absence of underlying disease and usually resolve with appropriate antibacterial therapy. Whereas complicated UTIs develop secondary to an underlying disease or anatomical abnormality and often recur following cessation of antibacterial therapy. Patients presenting with recurrent episodes of UTI should be evaluated thoroughly in order to identify a potential underlying aetiology (Table 1). Consideration should also be given to owner compliance if apparently uncomplicated UTIs do not resolve with treatment, as studies have shown between 56% and 73% of owners are not able to fully comply with an antibacterial course for their pet.[15,16]

- Infection associated with structural or functional abnormalities of the urinary tract e.g. urinary tract obstruction, or incomplete bladder emptying
- Pyelonephritis
- Anatomical abnormalities such as urachal diverticulum, ectopic ureters or secondary to excessive vulvar skin fold
- Urolithiasis
- Placement of an indwelling urinary catheter
- Urinary tract neoplasia or polypoid growths
- Cytotoxic drugs e.g. cyclophosphamide
- Diabetes mellitus
- Chronic kidney disease
- Glucocorticoid administration or hyperadrenocorticism
- Prostatitis

TABLE 1: Possible causes of complicated urinary tract infections.

Treatment failures can be divided into two groups; relapses and reinfection. Relapses are defined as infection by the same bacterial species that was present initially, i.e. the infection was never properly resolved during therapy. This often occurs shortly after antibacterial treatment withdrawal and is largely due to failure of antibacterial therapy due to inappropriate antibacterial choice, dose or duration of treatment, the presence of resistant pathogens or persistence of bacteria within a nidus, for example, a urolith (Figure 2). Reinfection occurs when, despite effective resolution of the original infection, the patient then becomes infected with another bacterial strain (this could be the same or a different species to before), suggesting that the underlying aetiology has not been addressed. Further investigation is indicated to look for underlying disease.

FIGURE 2: A urolith removed from the renal pelvis of the left kidney.

Diagnostic tests

Initial investigation should include collection of a urine sample for complete urinalysis which should include a dipstick, specific gravity and sediment examination. Whenever possible, canine urine should be analysed within 30 minutes of collection to prevent storage changes. Over time urease-producing bacteria will convert urea to ammonia increasing the urine pH, cellular material will degenerate and crystals, particularly struvite, will form. The normal pH of canine urine ranges from 5.5 to 7. Thus, a pH >7 creates a suspicion of the presence of urease producing bacteria and will predispose to the formation of struvite crystals.

Urine dipsticks are usually the starting point for the evaluation of canine urine as they are cheap, simple to use and provide quick results. Currently available urine dipsticks are manufactured for human and not canine patients, as a result, care should be taken in interpreting the leucocytes, nitrite and urobilinogen as they are considered unreliable in dogs.

The presence of glucose can be accurately assessed by a dipstick and its presence means the renal threshold for glucose resorption has been exceeded and suggests the presence of diabetes mellitus or possible renal tubular disease such as Fanconi syndrome or primary glucosuria. The presence of glucose in the urine provides favourable conditions for infection by acting as a substrate for bacterial growth and creating an osmotic diuresis, reducing urine concentration.

Both red cells and free haemoglobin will cause a colour change on a urine dipstick and it is important to include haemoglobinuria as a differential if bleeding in the urinary tract cannot be identified. A small amount of protein in urine can be a normal finding and its presence should be interpreted alongside specific gravity as the amount of protein present will vary in significance depending on urine concentration. Protein loss can be quantified further by performing a urine protein:creatinine (UPC) ratio. Proteinuria can be caused by the presence of white blood cells in urine (pyuria) from infection or inflammation, glomerulonephritis or haemorrhage (although haemorrhage must be marked before changes in protein are seen on a dipstick).

Urine specific gravity (USG) provides an indication of the kidneys' ability to concentrate urine and should be measured by refractometer rather than using a

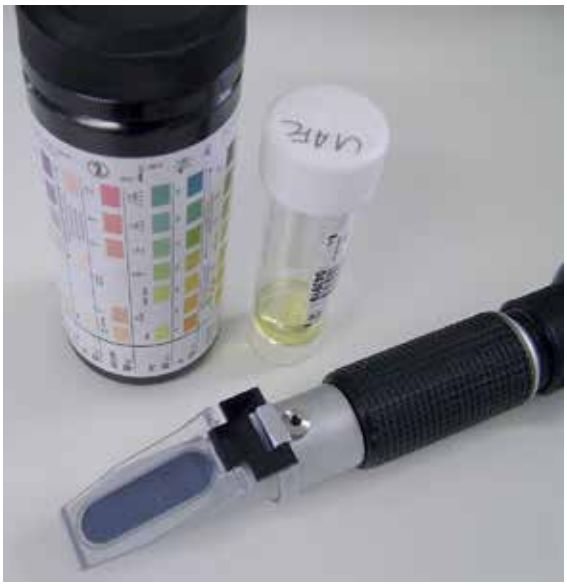


FIGURE 3: Full urinalysis should include a dipstick, specific gravity measured by a refractometer and a sediment evaluation.

dipstick. The normal range for USG is 1.015–1.040, but varies during the day depending, for example, on when the dog last drank. Serial urine samples with an SG <1.020 are very supportive of PU/PD, whereas samples consistently >1.030 support normal urine concentrating ability (Figure 3).

Urine culture is the gold standard for the diagnosis of urinary tract infection and should be performed in every patient with recurrent UTI. Mid-stream free catch samples will be contaminated by the normal commensal bacteria of the distal urethra and external genitalia. This can lead to difficulty in distinguishing true infection from that caused by the sampling method used. The presence of white cells within the urine sediment, sometimes referred to as an 'active sediment', is supportive but does not prove infection; therefore, urine should ideally be collected via cystocentesis to avoid lower urinary tract contamination (Table 2). Cystocentesis should be avoided in some circumstances, for example in patients with significant disease affecting the bladder wall. Once isolated, bacteria should be identified and subjected to sensitivity testing to enable informed antibacterial selection.

Evaluation of complicated urinary tract disease

Haematology, including a blood film analysis and a biochemistry profile, is an essential starting point to evaluate for possible underlying systemic diseases in complicated cases of urinary tract infection, allowing predisposing factors such as diabetes mellitus, chronic kidney disease and hyperadrenocorticism to be identified. After initial results, specific tests such as basal cortisol of an ACTH stimulation test may be indicated prior to imaging of the urinary tract.

Cystocentesis
■ Is usually performed with gentle physical restraint ■ Sedation may be required if the animal is very agitated ■ In small dogs it is most easily performed with the dog in dorsal recumbency ■ In larger dogs, lateral recumbency or standing are usually preferred ■ Ultrasound guidance can be helpful if the bladder is difficult to palpate (Figure 4) ■ Should be avoided if there is significant disease of the bladder wall, for example, a tumour
Technique
■ The area over the site of insertion is aseptically prepared ■ The non-dominant hand is used to palpate the bladder. In some cases, it is helpful to push it slightly caudally stabilizing it against the pelvic brim ■ Use a 1–2 inch 21–23 G needle attached to a 5–10 ml syringe ■ Holding the needle and syringe in the dominant hand, insert the needle through the abdominal wall on the midline, at a 45° angle. Aim in a caudal direction, so that the needle tip is pointing towards but a centimetre or so cranial to the bladder neck ■ Once in position, apply gentle negative pressure and withdraw 5–10 ml of urine, placing some in separate tubes for urinalysis and bacterial culture ■ Remove the needle with the syringe attached in a single gentle motion

TABLE 2: Indications for cystocentesis.

FIGURE 4: Using ultrasound to assist in the collection of a cystocentesis sample from a large dog.

Abdominal radiographs

Lateral and dorsoventral plain abdominal radiographs allow assessment of kidney and bladder size and position. They also enable identification of radio-opaque uroliths within the urinary tract (Figure 5). Contrast studies are indicated to highlight areas of the urinary tract which are not visible on plain films. Intravenous urograms (IVUs) document the excretion

FIGURE 5: Right lateral abdominal radiograph showing radio-opaque urinary calculi.

of intravenous contrast media through kidneys and ureters to highlight the upper urinary tract anatomy. Indications for performing an IVU include diagnosis of ectopic ureters and ureteral obstruction (Figure 6). This study can also be performed with computed tomography (CT) giving very accurate three dimensional images. Positive, negative and double-contrast cystograms aid visualization of radiolucent uroliths, masses, bladder wall thickness and urachal diverticula (Figure 7). Negative (air) and positive (iodine based) contrast media are introduced into the bladder via a urinary catheter. Care should be taken with the instillation of air into the bladder as there is a small risk of venous air emboli. Rare fatal cases have been documented in dogs and cats which have most frequently been associated with the presence of severe haematuria.

For assessment of the urethral pathology (e.g. strictures, tears, calculi, neoplasia and congenital abnormalities) a retrograde urethrography (male) or vaginourethrography (female) should be performed.

FIGURE 6: Intravenous urography illustrating a ureteral obstruction with an unusual 'cobra head' sign.

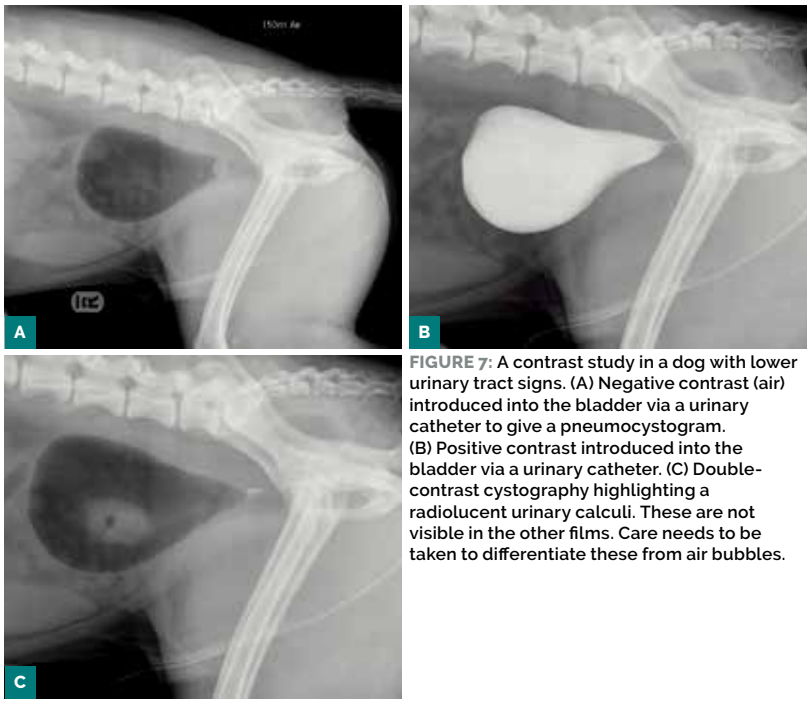


FIGURE 7: A contrast study in a dog with lower urinary tract signs. (A) Negative contrast (air) introduced into the bladder via a urinary catheter to give a pneumocystogram. (B) Positive contrast introduced into the bladder via a urinary catheter. (C) Double-contrast cystography highlighting a radiolucent urinary calculi. These are not visible in the other films. Care needs to be taken to differentiate these from air bubbles.

This procedure involves the insertion of a urinary catheter into the distal portion of the urethra via the penis (male) or vestibule (female). Contrast is then injected rapidly through the catheter and the radiograph taken at the end of the injection to document maximal urethral distention.

Abdominal ultrasound

Ultrasound is an extremely useful tool for identification of abnormalities of the urinary tract. Ultrasound examination of the kidneys provides information of renal architecture and size. Ultrasound examination also enables assessment of the renal pelvis for dilatation (pyelectasis), a finding consistent with polyuria and pyelonephritis (Figure 8). Care must be

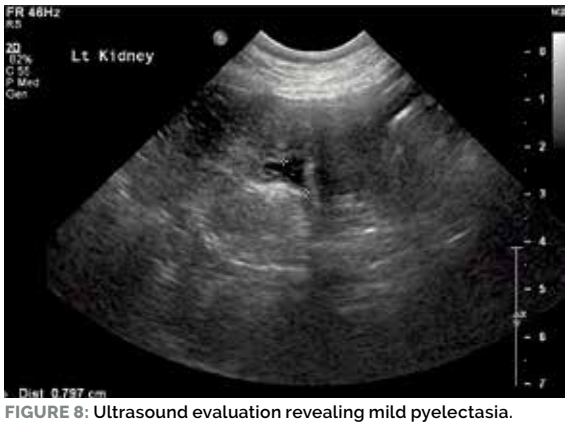


FIGURE 8: Ultrasound evaluation revealing mild pyelectasia. In this dog this is caused by polyuria and there is no evidence of pyelonephritis.

taken to not over-interpret renal pelvis dilatation in patients receiving fluid therapy as up to 70% of dogs will develop pyelectasia secondary to fluid administration.[17] Ultrasound examination of the bladder is often of great diagnostic value due to the bladder's superficial position within the abdomen and the acoustic properties of urine. Abnormalities of the urinary bladder that can be detected using ultrasound include neoplastic lesions, for example transitional cell carcinomas (typically found in the area of the bladder neck and trigone), benign polyps, uroliths and ectopic ureters. In males the prostate can also be examined for evidence of prostatitis, benign prostatic hyperplasia and neoplasia.

Ultrasound also enables visual guidance for accurate fine-needle aspirate collection from abnormal tissue and for the sterile collection of urine via pyelocentesis or cystocentesis. It is important to consider the risk of potentially seeding tumour cells along the needle tract when sampling urinary tract masses with the potential to be urothelial cell carcinomas (UCC). Where UCCs are suspected, less invasive methods of sampling should be employed. This may include cytological examination of urine sediment and samples obtained through urethral/prostatic washes or traumatic suction biopsies with a rigid catheter. Care must be taken not to over-interpret the presence of non-neoplastic reactive transitional cells, which are often seen with inflammatory processes of the bladder.

Cystoscopy

For further assessment of the lower urinary tract, cystoscopy can be performed. Although not widely available in general practice, cystoscopy can provide additional visual information about the architecture and anatomy of the bladder, urethra and vagina. Urinary tract endoscopy aids the diagnosis of urinary tract abnormalities by gross examination (e.g. the presence of calculi, assessing uretic position), but it may also facilitate acquisition of tissue biopsies and allow specific therapeutic procedures to be carried out, for example, laser correction of ectopic ureters and ablation and removal of calculi (Figure 9).

Treatment

Where possible, therapy should be determined by identification of organism type and antibacterial susceptibility following urine culture and sensitivity testing. Often it is indicated to initiate antibacterial therapy while awaiting results of culture and sensitivity. In these cases, antibacterial choice should be based on findings of the urine sediment examination. Bacteria morphology should be identified on sediment examination so that an appropriate antibacterial can be selected.

Appropriate first-line antibacterial choices for a single, uncomplicated urinary tract infection include trimethoprim-sulphonamide and potentiated amoxicillin (Figure 10), both of which are excreted in the urine at high concentrations. Second-line antibacterials, for example fluoroquinolones, should be reserved for susceptible organisms where a resistance has been demonstrated against first-line antibacterials. Third-line antibacterials such as imipenem, amikacin and vancomycin should only be administered in cases where the animal is unlikely to survive if not given.

FIGURE 9: Urinary tract endoscopy confirms narrowing of the proximal urethra due to a urothelial cell carcinoma. Endoscopic biopsy samples were taken allowing a firm diagnosis to be made.

URINARY TRACT INFECTIONS

Antibacterials are not indicated for:
- Feline idiopathic cystitis (FIC)
- Feline struvite urolithiasis and canine non-struvite urolithiasis
- Urinary incontinence
- Subclinical bacteriuria (canine or feline)
- Juvenile canine vaginitis

Uncomplicated, symptomatic, canine urinary tract infection (cystitis):
- ☐ Amoxicillin (± clavulanate)
- ☐ Trimethoprim/sulphonamide

Treat for 7–10 days

Complicated canine or feline urinary tract infection

Reinfection, recurrent and persistent urinary tract infections:
- ☐ Amoxicillin (± clavulanate)
- ☐ Trimethoprim/sulphonamide

If reinfection occurs, use the SAME antibacterial if previously successful
If recurrent/persistent infection, modify therapy on basis of sensitivity data
Review predisposing factors (e.g. urolithasis, anatomical abnormalities)

Prostatitis (entire males):
- ☐ Fluoroquinolones (high dose – see QR code)
- ☐ Trimethoprim/sulphonamide

Treat for 4–6 weeks + medical/surgical castration

Urolithiasis (≠ crystalluria):
Canine struvite urolithiasis (for dissolution)
- ☐ Amoxicillin (± clavulanate) until resolution of urolithiasis confirmed

Dietary modification and urine acidification alongside treatment
Consider surgical removal

Suspected pyelonephritis:
- ☐ Amoxicillin/clavulanate
- ☐ Fluoroquinolones
- ☐ Trimethoprim/sulphonamide

Treat for 2–4 weeks

FIGURE 10: The BSAVA PROTECT ME guidelines provide rationale guidance on antibacterial use for urinary tract infections.

The inevitable development of resistance to third line antibacterials poses the ethical dilemma as to whether they should be used in veterinary medicine at all or reserved solely for use in humans.

Alongside culture and sensitivity testing, and where necessary, assessment of the minimum inhibitory concentration (MIC) of an antibacterial provides useful information for prediction of therapeutic efficacy. The MIC provides a quantitative measurement of the minimum concentration of an antibacterial required to inhibit bacterial growth and helps us determine whether a particular bacteria is sensitive or resistant to the antibacterial at the expected serum concentration. Difficulties arise when drug penetration of tissues is poor, for example in the prostate. The presence of inflammation in these tissues improves antibacterial penetration, however if not inflamed, antibacterials fail to reach satisfactory concentrations to inhibit bacterial growth. It is therefore essential to consider sex and neuter status, as well as the likelihood of prostatic involvement when selecting antibacterials. In cases of prostatitis it may be indicated to use an antibacterial such as trimethoprim-sulphonamide or a fluoroquinolone as a first-line antibacterial as they have good penetration of prostate tissue.

It is essential that antibacterials reach sufficient concentrations in urine and infected tissue for an appropriate length of time in order to reduce the risk of antibacterial resistance. To improve the antibacterial therapeutic effect, dose or dosing frequency can be altered, dependant on the type of antibacterial selected. For example, fluoroquinolones have concentration dependent pharmacokinetics, thus increasing the dose increases their bactericidal activity. Co-amoxiclav and other penicillin derivatives are time dependent and increasing the dosing frequency improves therapeutic effect. It is important to avoid potential side effects associated with increased dose administration, for example aminoglycosides are associated with nephrotoxicity.

In cases of complicated urinary tract infection, identification and management of the underlying disease process is crucial. A thorough history and physical examination is always indicated and further investigations are required to diagnose systemic disease and anatomical variants which may predispose to a urinary tract infection. Without identification of the predisposing condition, UTIs are likely to recur.

Duration of treatment

It is generally recommended that uncomplicated episodes of bacterial cystitis are treated for 7–10 days, with examination of urine sediment after completion of the antibacterial course to ensure treatment has been effective. A minimum of 4-weeks of treatment is suggested for complicated UTIs with the choice guided by culture and sensitivity results.[8] Urine culture should be performed following cessation of therapy to ensure that the infection has been eliminated.

Urinary catheter placement

As discussed previously, the placement of a urinary catheter greatly increases the risk of UTI. Urine culture should be performed for all patients with an indwelling urinary catheter (IDUC) showing signs of UTI. If feasible, the IDUC should be removed and a sample should be obtained via cystocentesis for culture. If the IDUC must remain, it should be replaced and a urine sample taken from the new urinary catheter for culture. Treatment is much more likely to succeed in patients where urinary catheters are removed. Subclinical colonization of the urinary tract also occurs with urinary catheter placement. These patients should be monitored for clinical signs and urinalysis results. Prophylactic use of antibacterials with urinary catheter placement is contra-indicated as it increases the chance of catheter related infections.

Antibacterial resistance

Multi-drug resistance develops when bacteria acquire genes or genetically mutate in a way which enables them to overcome different bactericidal/static mechanisms employed by multiple antibacterials. In veterinary medicine, the frequency of isolation of multi-drug resistant *E. coli* has been shown to be between 9–31% of strains at different academic institutions.[18] A higher rate of resistance has been demonstrated at academic institutions and hospitals in comparison with private practices. This is most likely due to the larger number of complicated urinary tract infections seen in referral practice. Factors that increase the risk of resistance include previous antibacterial use, use of immune-suppressants, underlying disease, and hospitalization and surgery.[19]

Conclusion

Although uncomplicated UTIs are usually straightforward to treat, a logical and through evaluation of complicated and recurrent UTIs will help to reveal underlying causes and allow definitive treatment, allowing resolution of the UTI. As UTIs are common, it's important to use antibacterials responsibly, which is fundamental to reducing the development of bacterial resistance in the future. C

References and further reading are available at www.bsavalibrary.com and in *e-Companion*.

A matter of policy

The BSAVA is an influential organization on the national policy-making stage and with policy as one of the current BSAVA President's themes for the presidency, Head of BSAVA Policy, *Adrienne Conroy*, provides an insight into some of the BSAVA's recent policy activities.

The past year has seen an unprecedented level of government consultations, calls for evidence and parliamentary inquiries. The BSAVA has responded to a variety of those which related to companion animals, many in conjunction with the BVA. Topics have been broad ranging from licensing and third party sales through to responsible pet ownership and the use of electronic shock collars. Responses have also been provided to both European and RCVS consultations and BVA Position Statements. In all, well over 30 responses or contributions have been provided ensuring that the BSAVA views are represented and can influence policy which affects national and international issues of relevance to our sector of the profession (Box 1).

Box 1: Consultations and briefings: some of the issues BSAVA responded or contributed to during 2017–18

Westminster activities

- Defra's Animal Welfare (Licensing of Activities Involving Animals) Regulations 2018
- Canine Feline Sector Group (CFSG)/ Defra Guidance documents to support licensing regulations:
  - Breeding Guidance
  - Boarding Establishments Guidance
  - Day Care Guidance
  - Vending/Sale Guidance
  - Animal Exhibits Guidance
- Defra's Call for Evidence on the proposed ban of Third Party Sales
- The use of electronic training collars (England)
- Dangerous Dogs and Breed Specific Legislation – Environment, Food and Rural Affairs Committee (Efra Com) Inquiry and request for evidence

Scottish Government activities

- Rehoming Activities and Animal Sanctuaries Registration and Licensing proposals
- Pet Rabbit Welfare Guidance
- Proposed Pet Shop Licensing Bill
- Breeding and Ownership of Dogs, Private Members Bill (Scottish Parliament)
- Petition PE1674 on preservation of the Scottish wild cat and the control of cat population

  Available in the BSAVA Library: DOI: 10.22233/20412495.0119.16

Welsh Government and Animal Welfare Network for Wales (AWNW) activities

- Code of Practice on Welfare of Dogs
- Code of Practice on Welfare of Cats
- Code of Practice for Animal Sanctuaries/Establishments

RCVS

- Exemption Orders and Associates Working Party
- RCVS Vet Nurse Prescriber role consultation

BVA Position Statements

- Brachycephalic dog breeds
- Extreme conformation
- Pet Travel

Europe

- FVE/FECAVA consultation on Breeding Healthy Dogs
- Briefing for FECAVA on proposed Third Party Sales Ban (England)

External stakeholder groups

The BSAVA is represented on many groups which discuss and agree strategies that influence some of the topical issues impacting on the health and welfare of pets. To give members a flavour of this work, some of the groups and their activities are outlined below.

Canine Feline Sector Group

The Canine Feline Sector Group (CFSG) comprises veterinary organizations, the leading charities and NGOs including the Kennel Club. Its aim is to discuss and provide input on the following:

- New Defra legislation i.e. Animal Welfare (Licensing of Activities Involving Animals) Regulations 2018
- Guidance to support the legislation covering licensing and standards of premises involved in companion animal activities. These include breeding establishments, places of sale, day care and boarding facilities
- Codes of Practice that provide practical advice and guidance to relevant stakeholders.

CFSG reports to Defra through the Animal Health and Welfare Board for England (AHWBE). The AHWBE is the principle source of departmental advice to Defra ministers on strategic health and welfare matters relating to all kept animals in England. The Board also has strategic oversight of Defra policy in England in relation to the public health implications of those diseases that fall within Defra's remit.

Defra's timescale for input into the legislation and completion of the Guidance was extremely tight during the last quarter of 2017, with the expectation for the majority of the work to be completed by the end of 2017 so the parliamentary process could begin early in 2018.

The BSAVA provided input into eight of the nine Guidance documents. Final comments on the legislation and guidance were provided by CFSG to Defra in January 2018 and the parliamentary process began later that month. The Animal Welfare (Licensing of Activities Involving Animals) (England) Regulations 2018 transited through Parliament and became law on 1 October 2018 with Defra Guidance and Codes of Practice (CoPs) to support the legislation being issued beforehand. Given the challenging timescale for delivery, this was a huge achievement for CFSG.

> "The BSAVA is represented on many groups which discuss and agree strategies that influence some of the topical issues impacting on the health and welfare of pets."

The Prime Minister's announcement in December 2017 supported the drive for change reflected in the legislative changes and the Guidelines for the related animal licensing activities. The BSAVA was thanked for its valuable input, with Lord Gardiner thanking CFSG for driving forward standards to improve health and welfare in the companion animal sector. For BSAVA members who have an interest in this area either through their own work or that of their clients, the resulting Regulations and supporting Guidance can be accessed via **https://www.legislation.gov.uk/ukdsi/2018/9780111165485**.

BSAVA also attended the annual CFSG stakeholder event where all sector groups which participate in CFSG were represented and which considered some of the priority areas for CFSG to focus on moving forward. Subsequently the CFSG Strategy for 2018 has been agreed for the next 12–18 months and working groups have been formed to take this work forward.

Brachycephalic Working Group

The focus of the Brachycephalic Working Group (BWG) is on improving the health and welfare of

brachycephalic dog breeds. The BWG agrees shared actions and aims to ensure greater overall progress and outcomes for the health and well-being of brachycephalic dog breeds. Goals include highlighting the importance of generating evidence for, and awareness of, the related health problems and addressing their causes and effects. Desired outcomes include a reduction in the number of dogs affected by BOAS and other brachycephaly-related health problems. The BWG works collaboratively towards ensuring existing and potential owners of brachycephalic dog breeds are better-informed and aware of the health challenges associated with these breeds.

Members of the BWG include representatives from the Kennel Club, dog breed health co-ordinators, academic researchers, animal welfare charities and veterinary associations including the BSAVA. Activities have been broad and varied over the past year.

- To ensure the Group maximizes its influence, BWG members penned an open letter asking companies to refrain from using brachycephalic breeds on products and in advertising materials. This obtained media coverage in over 40 articles in the national and specialist press in the UK and Ireland resulting in an overall audience reach of over 20 million. This raised the profile of the BWG resulting in some high profile companies reviewing their policies and no longer intending to feature brachycephalic breeds. European and global veterinary associations also expressed their interest in BWG's activities and a desire to take action to support similar work and initiatives in their own countries.
- In advance of the launch of the Disney movie *Patrick*, where the star of the film was a Pug, the BSAVA, along with other BWG members engaged with Disney to produce communication materials intended for use at the time of release of the film. These highlighted the importance of responsible dog acquisition, ownership and the care of specific dog breeds. With commitments of support from Disney, a BWG position statement was prepared for inclusion on the BWG website which outlined the BWG's position on brachycephalic dog conformation.
- To support the BWG Framework agreement, the BSAVA included preparations for a debate on brachycephalism at BSAVA Congress (available in the BSAVA Library – **https://www.bsavalibrary.com/content/journals/10.22233/20412495.0618.12**)
- The Big Issues stream at BSAVA Congress featured a session on the Illegal Puppy Trade which highlighted the puppy import trade in particular, the exponential rise in imports of brachycephalic breeds (available in the BSAVA Library – **https://www.bsavalibrary.com/content/journals/10.22233/20412495.0818.8**). The session additionally provided useful tips and guidance to support vets when taking action to address the issues relating to this trade.
- Input was also provided into the Federation of Veterinarians of Europe (FVE) Consultation on 'Breeding Healthy Dogs' that shaped FVE policy, supported recommendations and also proposed actions regarding the supply and demand of brachycephalic breeds.

The BSAVA support for BWG has been well-received and the Association's input has been recognized for the value it brings to the Group and its aims.

Dog Health Group

The BSAVA is also represented on The Dog Health Group (DHG), a Kennel Club-led group made up of vets, geneticists, breeders, researchers and Kennel Club representatives. Its remit is to develop strategy for the Kennel Club's work on matters relating to canine health. It does so by means of coordination and monitoring of related work; supervising some of the Kennel Club's public campaigns; and advising on health schemes, the Assured Breeder Scheme (ABS) requirements and other breeding strategies.

> “Given the ongoing need for responses to consultations and the formulation of policies, the BSAVA has the potential to impact on many areas across society where vets are involved.”

Animal Welfare Network Wales

BSAVA Policy supports some of the activities undertaken by the Animal Welfare Network for Wales (AWNW), an independent initiative set up to bring together all organizations in Wales where their activities relate to animal welfare. The aim is to facilitate effective communication and activities between these organizations and input into Welsh Government policies relating to companion animals. The work of the Group is similar to that of the CFSG and members include veterinary, animal welfare and farming organizations. BSAVA Policy ensures

succession of the BSAVA Welsh Region representative and both contributes to and coordinates BSAVA's input to consultations.

Veterinary Medicines Directorate strategy on antimicrobial resistance

As activity on antimicrobial resistance (AMR) continues to build, the Veterinary Medicines Directorate (VMD) is keen to ensure communication, collaboration and cooperation between cross-sector groups is managed so that any good work is recognized, promoted and shared and also, that duplication is avoided. Part of their focus is on developing work on AMR for companion animal sectors. BSAVA Policy contributed to VMD's future AMR strategy which aims to achieve a long term sustainable culture-change in relation to AMR. VMD is also aiming to continue to develop the One Health approach by working with medics, pharmacists and nurses.

BSAVA Policy Groups

Given the ongoing need for responses to consultations and the formulation of policies whether for the UK, Europe or globally, the BSAVA has the potential to impact on many areas across society where vets are involved. To facilitate membership engagement and leverage wider BSAVA expertise in providing responses or contributions, policy groups with allocated topics were set up and members invited to express an interest in joining a Group. Group members have already begun to add value by sharing their expertise on a range of policies. By involving members in these activities it offers them the opportunity to understand how the BSAVA engages with external organizations and influences decisions that matter, making a difference not just to our profession but to related sectors. Not least it ensures the veterinary viewpoint is considered and resulting policies are both effective and pragmatic. This new approach to policy-making for the BSAVA has so far engendered enthusiastic input from involved members and the aim is for it to evolve and provide a valuable resource that influences national initiatives affecting our profession.

BSAVA Policy Groups

- Professional regulation
- Cross-sector veterinary topics
- Medicines and AMR
- Research and Education
- Licensing of Premises
- Brexit
- Animal Welfare and Ethics
- Non-traditional companion animals
- Specific ad-hoc topics
- Scottish Region topics and initiatives
- Welsh Region topics and initiatives

Events and external engagement

A range of additional external meetings and events were attended by BSAVA Policy including meetings on the illegal puppy trade attended by representatives from both the House of Commons and Lords, veterinary organizations, international transporters, central government and enforcement authorities. Other events focused on a broad spectrum of topics, from the impact of Brexit on the future availability of medicines and the potential impact on animal health through to meetings on improving national disease surveillance. The latter was highlighted to BSAVA members asking for their participation in related surveys which resulted in an exceptional response rate. This added value to the final recommendations which ultimately were presented to government.

Meetings with other organizations also included BVA and veterinary associations, the RCVS, government, and both sector and trade organizations. BSAVA Policy also considers requests from NGOs to work in collaboration with them on projects or initiatives. As a result, BSAVA supported the Bella Moss Foundation in producing guidelines for the selection of specific disinfectants appropriate for use in companion animal practice.

To launch the proposed ban on Third Party Sales, Defra's Secretary of State Michael Gove hosted an event at No. 10 Downing Street where he emphasized the government's commitment to improving animal welfare relating to the sale of companion animals, also known as 'Lucy's Law'. Defra also hosted an annual external stakeholder event which showcased the range of stakeholders Defra engages with and the breadth of the activities covered, from animal welfare and the environment to food production and flood defences. In addition, BSAVA attended the AGM for the Animal Health and Welfare Board for England (AHWBE) where, with Brexit on the horizon, the Chair of AHWBE reminded attendees that the exceptional demands on stakeholders' resources in making preparations for Brexit continued unabated and would do so well into the future.

To sum up...

BSAVA policy is broad-ranging as it keeps pace with an often rapidly and ever changing landscape. It highlights the influence BSAVA and its membership can have improving animal health and welfare not just in the UK but farther afield. Not least, it ensures the voice of companion animal vets is heard and that their views and input are recognized for the better of the Profession and society as a whole. C

CPD by the sea

Vets Cymru

Môr o addysg | CPD by the sea

BSAVA CYMRU/WALES

Canolfan Milfeddygaeth Cymru Wales Veterinary Science Centre

The British Small Animal Veterinary Association (BSAVA) and the Wales Veterinary Science Centre (WVSC) have launched Vets Cymru, a 2-day event offering both large and small animal 'CPD by the sea' for vets and vet nurses.

Vets Cymru is a mixed practice event taking place in Aberystwyth on Friday 28 and Saturday 29 June 2019. It has a 'Welsh stamp' across the programme, plus an exhibition of around 25 companies and an exciting social calendar which includes a traditional Welsh Twmpath, a dance night on the seafront.

The event features four streams of clinically-led CPD for small and large animal vets and vet nurses. Highlights already confirmed include vet David Church giving a lecture on companion animal endocrinology and leading a small animal medical mystery tour, and Sue Paterson lecturing on dermatology for vets and vet nurses. Fyrnwy Equine Group will provide a half day of equine lectures in the large animal stream, Burtons Veterinary Equipment is sponsoring a practical endoscopy event and BVA will lead discussions on antibiotic resistance and medicine control.

The Chief Veterinary Officer for Wales, Christianne Glossop, will give a welcome address at the drinks reception on the Friday evening.

BSAVA Welsh regional committee chair Kate O'Sullivan said: "We are delighted to launch this

  Available in the BSAVA Library: DOI: 10.22233/20412495.0119.20

exciting weekend of CPD by the sea, which has a very Welsh stamp on it and is packed full of interesting content and ideas.

"This 2-day CPD event is the first of its kind in Wales and promises to be a great opportunity to meet up with colleagues to enjoy this beautiful town, which has lots of family-friendly activities to keep the kids occupied as well.

"Our core ethos is to meet the needs of veterinary practitioners and nurses in mixed practice, who often work in relative isolation and travel long distances to boost their training. We felt it was important to give a strong Welsh flavour as part of this innovative new event, and we look forward to saying 'Croeso I bawb!' (Welcome to all!)."

Registration opens soon with around 100 delegates expected. You can register your interest now by emailing **regionalsupport@bsava.com**.

More programme information will be unveiled in the spring. Anyone interested in becoming involved in any aspect of the BSAVA volunteer community, or specifically in the Vets Cymru event, can email **volunteer@bsava.com**.

BSAVA Welsh regional committee chair Kate O'Sullivan.

The obesity disease

Obesity in a dog is not a sign of moral weakness in either the animal or its owner – but a genuine disease requiring prompt and effective veterinary attention, delegates attending BSAVA Congress 2019 will hear.

Alex German of the Liverpool vet school will tell colleagues that practice staff need to rethink their approach to dealing with overweight pets. Vets and VNs have a responsibility to encourage the owner to adopt a weight management plan for their pet that is tailored to its individual needs.

They should not ignore the evidence of a condition with profound implications for the animal's health for fear of upsetting owners. Nor should they indulge in 'fat shaming' by dismissing the signs of obesity as an indicator of a greedy dog in the care of a lazy human, he will suggest.

Scientific principles of weight management

Alex will deliver a lecture in Birmingham on the scientific principles underlying a successful weight management programme. He was one of the team responsible for drawing up the American Veterinary Medical Association (AVMA) policy document agreed in September 2018 on obesity in cats and dogs. This classified obesity as a genuine disease in its own right, rather than simply a predisposing factor for other problems like osteoarthritis and diabetes.

Due to be published in the AVMA official journal in early 2019, this global pet obesity position statement has since been endorsed by numerous veterinary and animal organizations, including the BSAVA. It explains that obesity fulfils all the criteria that characterize any other disease, in that it impairs the normal function of some bodily system, shows consistent clinical signs and causes harm or morbidity.

  Available in the BSAVA Library: DOI: 10.22233/20412495.0119.22

The statement proposes the universal use of a nine-point body condition scoring system which would allow practitioners to better interpret the latest research findings, to accurately and consistently assess the animal's condition and communicate their finding with colleagues and clients.

Raising awareness

While the benefits of losing excess weight are well appreciated in both humans and companion animals, Alex believes that the consensus achieved through the global statement will have significant benefits for animal health and welfare. "We hope that it will raise awareness and ensure that people take this condition seriously, so that more pets start to get the care that they need. This will mirror what has happened in the human medical field over the past decade. With most international medical bodies now supporting this approach, it has helped in fighting the stigma surrounding this issue and has opened the door to more widely available treatment."

> "We need to be better at spotting those patients that are at risk of developing obesity and intervene at an earlier stage."

Working with colleagues at the University of Glasgow, Alex's team was the first group to provide evidence of demonstrable improvements in quality of life scores for dogs as a result of successfully completing a weight management programme.[1]

However, as with human dieters, often the improvements are not sustained, with around 50% of dogs that lose weight undergoing a rebound weight gain. Alex says this is partly a result of the owners slipping back into their old habits of overfeeding and under-exercising their dogs, although there is also a physiological explanation, as dieting may lead to a lower metabolic rate and a reduction in the amount of energy needed by the animal in the maintenance phase. Owners who continue to give their pet the same weight loss diet in the right quantities are about 20 times less likely to suffer the disappointment of seeing their pet regain that lost weight, he says.

In his presentation at Congress, Alex will emphasize the importance of following a weight control plan that takes account of the pet's individual needs. It is essential to bear in mind any coexisting health issues. If the pet has early-stage renal disease, for example, this may influence the type of diet formula that it is given. The vet and client may also need to adjust the target weight. They may decide that just a 10–15% weight loss may be all that is needed and will bring improvements in mobility, pain control and general health without the risk of exacerbating the kidney problems.

Also crash diets are as inadvisable in companion animals as they are in their owners. Alex warns that the client should be looking for an initial reduction in the pet's bodyweight of between 1% and 1.5% of its starting weight per week. But they must be aware of the law of diminishing returns and the risk that the animal may begin to lose lean body mass when it has shed around 20% of its starting weight. "We are looking for better quality of life, not the canine equivalent of a bikini-body," he points out.

Starting the obesity conversation

One of the potential benefits of redefining obesity as a 'proper' disease is that it should make it easier for vets and VNs to begin the conversation that will attempt to persuade the client that losing weight is important for the pet's health. "Some clinicians are worried that they might offend the owner by drawing attention to the pet's body condition, especially if the owner is also overweight. But that should never be a problem if you can show that what you are doing is in the animal's best interests."

Alex will also emphasize that as in many other medical conditions, prevention is much better than a cure. "The strategies that we use in treating obesity are not perfect and at the moment we are as likely to fail as we are to succeed. So we need to be better at spotting those patients that are at risk of developing obesity and intervene at an earlier stage. We do now have a system of growth charts which will show when an animal is growing too quickly and which may go on to become clinically obese."

However, the first step towards tackling a condition which many experts regard as the single biggest health and welfare issue affecting dogs (and to a lesser extent cats) is to see it in a different light. "We need to reconsider the way that we talk about obesity. At the moment, we may say that a person or their pet is obese, rather than they have obesity. You wouldn't say that about any other condition – a patient has cancer, not they *are* cancer. If we can shift the terminology that we use, then we can change the way that we think about this disease."

References and further reading are available at www.bsavalibrary.com and in *e-Companion*.

Full details of the Congress 2019 Obesity stream of lectures scheduled for Thursday 4 April (Hall 3) can be viewed at **www.bsavacongress.com/programme**.

And the 2019 Bourgelat winner is...

For the winner of this year's BSAVA Bourgelat prize for outstanding international contributions to advancing small practice, the journey to Birmingham will be shorter than that for many of his predecessors. The award is being given to Mike Herrtage from the University of Cambridge veterinary school, a longstanding supporter and former president of the association.

Professor Herrtage's face will be familiar to most members of the UK veterinary community as a regular speaker at professional meetings and his name as that of a clinical scientist who has pushed back the frontiers of current knowledge in a broad range of different directions.

If asked to explain his professional role, Professor Herrtage would probably describe himself as a veterinary endocrinologist who has also maintained an active interest in imaging. But that hardly does justice to the range of disciplines in which he has worked.

In an age when veterinary specialisms have narrowed, he has remained a generalist – his 215 publications include studies on infectious disease, orthopaedic and soft tissue surgery, dermatology, neurology, nutritional science, genetics, cardiology… "I do think that we specialize too early in this profession. There is a danger that you can become disenchanted because the area you have chosen is not progressing fast enough. Moving around between different fields has meant that I have been able to retain the same curiosity and excitement that I felt at the beginning."

Nearly every item on that list addresses an issue of concern to small animal practitioners. Indeed, the only study that seems out of place was an abattoir survey of cull ewes carried out for a student project at Liverpool vet school.

Growing up in south London, he had wanted to be a dairy farmer, but harsh economic realities meant that he had to choose what he then saw as the next best thing, veterinary medicine. A career in farm work was on the cards until midway through his course, when he crossed the Atlantic to see practice in New York State. "At that time, small animal practice in the United States was so far ahead of what we had here. That trip really was an eye-opener, it showed me what we could achieve if we tried."

So he recalibrated his professional sights, and got a job as house surgeon at the Cambridge vet school where he has remained ever since. Opportunities for greater financial rewards might have been available to him if he moved into private referral practice but Professor Herrtage says he has enjoyed the wider intellectual challenges available in the purely academic environment.

It helps that he continues to view his teaching duties as a challenge rather than the chore it can become to many senior academics. "It might be different if I was doing repetitive didactic stuff but what I am teaching incorporates real clinical cases, with all the variability that involves. Also, the students at Cambridge have a really good scientific training in their preclinical years and they are challenging you all the time – you want to be able to answer their questions and that remains a major driving force for me."

Keeping the research grants rolling in is the other preoccupation for anyone working in the university system. Over the years, Professor Herrtage has helped attract more than £1.5 million in training and research grants for his department. His funders include a range of companies in the pet food and animal health industries, charitable foundations like the Alice Noakes Memorial Trust, and the BSAVA's own charity, PetSavers.

Getting money for clinical research in small animal medicine has never been a simple task – has it got easier as his career progressed? "The funding environment isn't noticeably worse than it was, but it is always a struggle. I have sat on a few funding committees and it seems to me that it is more challenging getting relatively small amounts of money for clinical work than it is to get much bigger grants for basic research."

As the Bourgelat award winner, Professor Herrtage is responsible for organizing a special stream of four lectures on adrenal disease at the 2019 Congress in

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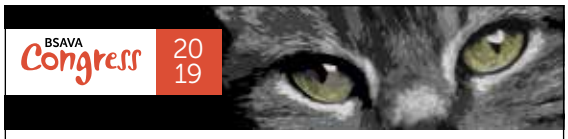
Birmingham. He will deliver two lectures on diagnosing this condition and on atypical presentations, while two of his former students give the others. Dr Raquel Salguero will talk on imaging the adrenal gland and Professor Ian Ramsey on monitoring treatment for canine Cushing's patients.

The Bourgelat award is only the latest in a succession of professional honours that Professor Herrtage has received over the years. Apart from this prestigious award from an organization in which he has been closely involved throughout his career, are there any other honours that have given him particular satisfaction?

"Two that stand out were the WSAVA International Award in 2014 and the Kennel Club Lifetime Achievement Award in 2016. It is very pleasing to feel that you have made a contribution that is recognized by your peers. But it is also a little alarming – a lifetime achievement award reminds you that you are getting perilously close to falling off the end of the perch."

Professor Herrtage did officially retire from the University of Cambridge in September 2018 but that may be news to some of his colleagues in the faculty of veterinary medicine. "I am still supervizing postgraduate students and only live about a mile away and so I pop down there most weeks, when I am in the country."

So he has no plans to retire completely and will no doubt be back in Birmingham for the 2020 congress. "I can't remember who said it, possibly Mark Twain. 'I have nothing against retiring as long as it doesn't get in the way of my work', and I'm still enjoying what I do."



The Bourgelat (State of the Art) stream of lectures is scheduled for Friday 5 April (Hall 8) at Congress 2019.

- 08:30–09:15
  Imaging the adrenals
  Raquel Salgüero (SP)
- 09:25–10:10
  Atypical hypoadrenocorticism
  Michael Herrtage (UK)
- 11:05–11:50
  Diagnosis of canine hyperadrenocorticism: is it always straightforward?
  Michael Herrtage (UK)
- 12:00–12:45
  Monitoring treatment in canine hyperadrenocorticism
  Ian Ramsey (UK)

Further details at **www.bsavacongress.com/programme**.

Congress – in case you missed it

BSAVA launches crèche for Congress 2019

BSAVA Congress 2019 will introduce a crèche facility ensuring all vets and nurses can focus on access to more than 450 hours of world-leading education.

BSAVA has chosen award-winning childcare experts Nipperbout to run the crèche facility for children aged 0–8 years, helping parents to explore a wide range of lectures, practical sessions and abstract presentations.

The move follows a BSAVA survey this summer including responses from Congress delegates, members and the wider profession, where more than 50% of respondents said they would use a crèche at Congress.

Angharad Belcher, BSAVA's Head of Congress said: "We recognize that veterinary professionals, especially working parents, are facing increasingly complex time demands – it can be tricky to find flexible solutions that meet the needs of the practice, without compromising on personal time.

"Congress is the perfect place to get high quality CPD suitable for all levels and educational needs, while reducing concerns around childcare."

Places are available for children aged 0–8 at £30 a day (including lunch and refreshments) when registering for Congress online at **www.bsavacongress.com**.

Congress practical sessions: filling up fast

Don't miss your opportunity to get hands-on at Congress and practice essential techniques with experts. Choose from 16 unique sessions covering a range of popular hot topics, priced between £20–£100 a session. Find out more and book today at **www.bsavacongress.com**.

Gender bias alive and kicking

Female vets continue to be paid a lower salary than male colleagues with identical qualifications. Yet the biggest barrier to achieving better gender equality in the veterinary profession is made up of bosses who believe that discrimination is no longer a serious problem, BVA members were told at their annual congress in London on 16 November.

Social psychologists Chris Begeny and Michelle Ryan from the University of Exeter outlined the latest results of research commissioned by the BVA to understand why large numbers of younger veterinarians appear to be unhappy with their choice of career.

At the same meeting last year (reported in *Companion* January 2018), Professor Ryan explained how male and female veterinary graduates start off with equal reserves of ambition for their careers. But a greater proportion of women vets seem to lose their appetite to succeed and may even choose to leave the profession.

Ongoing work by the Exeter team has been examining issues such as the need for staff to believe that they belong at work, and feel valued and admired by their colleagues and employers. "These are strong predictors of motivation, job satisfaction and retention," she said.

Why the salary differential?

One easily measurable indicator of a staff member's value to the organization is salary, and in this area, there is plenty of evidence that male vets are better treated. Two separate studies by the Society of Practising Veterinary Surgeons and the agency CM Research published in early 2018 highlighted a significant gender pay gap at all stages of a veterinary career. The data showed that the average salary for a female vet, at £41,152 was around 12% below that of the typical male vet. Later in their careers, the difference becomes even more marked, with women partners earning £51,315 and men £69,755, or around 36% more.

Begeny and Ryan's project has looked deeper into this salary differential. They asked a group of 266 owners, senior partners and practice managers to assess a performance review of a young vet, Elizabeth and another named Mark, with the same strengths and weaknesses in terms of experience and qualifications. Indeed, in this the experimental study, the wording of the report was identical apart from the first names and gender-based pronouns.

The employers' group was also asked about their attitudes towards gender discrimination within

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the veterinary profession and whether they believed that it was still a significant issue. Overall, they suggested offering a salary for 'Elizabeth' that was on average around £800 a year lower than that which they were prepared to pay 'Mark' but this rose to £2,400 per annum among those members that felt strongly that sex discrimination was a thing of the past. The proposed salary differential actually disappeared in the evaluations of those senior vets who acknowledged that gender bias was still an issue in veterinary practice.

Women are still underrepresented at the higher managerial levels within the veterinary profession and so there was a higher proportion of males than females in the group that was prepared to offer lower salaries to the female candidate. But a similar proportion of female managers were equally willing to turn a blind eye to the concept of sisterly solidarity when it came to their junior colleagues' salaries, Professor Ryan explained.

She said that this bias over salary prospects reflected persistent gender stereotypes over the attitudes and capabilities of men and women. In their responses to further questions, this same subset of managers said that their interpretation of the performance review suggested that 'Mark' was a more competent clinician than 'Elizabeth'.

> "There are objective ways of carrying out performance evaluations but there are also biases that are deeply embedded in all of us."

These respondents went on to say that this difference in perceived competence would be reflected in the way they would treat these two junior colleagues in their own practice. It was suggested that they would be offered fewer opportunities to take on new managerial opportunities, receive less encouragement to pursue promotion and it was also less likely that veterinary colleagues would be urged to seek their advice, Dr Begeny explained.

Subtle, insidious stereotypes

He said it was not exactly clear why those who believe that discrimination is not an issue in the veterinary profession should be those responsible for perpetuating the problem. "I think it is possibly because this subset of the profession may be less vigilant to the ways that these subtle, insidious stereotypes about men and women can creep into the way that we assess competence. Of course, there are objective ways of carrying out performance evaluations but there are also biases that are deeply embedded in all of us."

Studies by the Exeter team and other social scientists have looked at gender issues in other professional groups and Dr Begeny reassured his audience that the veterinary profession is not unique in displaying these biases. Similar attitudes exist in all professional groups but views have changed more slowly in those professions, like surgery, that are traditionally male-dominated.

Professor Ryan argued that a key factor in improving this situation was to give young women greater confidence by providing suitable role models. However, experience with a sister organization, the Royal College of Surgeons, has showed that it is not sufficient to simply offer one outstanding individual as encouragement to everyone else. A range of different role models are needed to persuade younger colleagues that anyone with the talent and application can make a successful career, whatever their gender, class or race, she said.

Tackling gender bias

In a panel discussion following the Exeter researchers' presentation, speakers from diverse elements of the veterinary profession offered suggestions on practical steps that individuals and organizations can take to tackle gender bias. Jane Simpson, people development manager for the XLVets group, insisted that "awareness is curative" and that the first step towards overcoming any problem was to recognize that it does actually exist.

Speakers acknowledged that those people questioned in the research project would be dismayed to be accused of practising discrimination towards their colleagues. One of the important ways to prevent this would be by carrying out a thorough system of staff appraisals. This should involve 360-degree feedback to ensure that junior staff are allowed to offer suggestions on the attitudes and performance of their more senior colleagues, Ms Simpson said.

Professor Ewan Cameron, head of the school of veterinary medicine at the University of Glasgow, pointed out that in recent years, training in recognizing unconscious bias has become widely available in large organizations like universities. However, Professor Ryan warned that simply attending training sessions was not enough, as it was vital that these lessons were applied in the workplace.

Examining the history of efforts to establish gender equality, she said it was clear that this was not an inevitable process and most significant advances usually followed legislative change. She hoped that the rules introduced obliging large companies in the UK to publish details of gender pay disparities would provide an incentive for all employers to review their policies for assessing and rewarding staff. C

Grace Dickinson

Grace Dickinson is the founder of Reptiles etc, a company that trains animals for film and television work. As the company name suggests, her work doesn't just focus on the more familiar species of four-legged thespians like dogs or horses, but a wide range of other taxa, including invertebrates. She told *John Bonner* about her job and how the methods that she uses could make life easier for veterinary staff.

FILM STAGES AREN'T THE ONLY PLACES THAT YOUR ANIMALS PERFORM – YOU ALSO WORK IN SCHOOLS GIVING CHILDREN HANDS-ON EXPERIENCE OF EXOTIC ANIMALS, AND YOU HELP PEOPLE WITH PHOBIAS TO OVERCOME THEIR FEAR OF SNAKES, SPIDERS, ETC. SO HOW WOULD YOU DESCRIBE YOUR ROLE?

Over the years I've been "zoo keeper", "education officer", "interpretations officer", "animal handler", "animal wrangler", "presenter", "snake charmer", "herpetologist", "aquarist", "lecturer" and "consultant". But at heart, I'm a zoo keeper and always will be. After all, the job of a modern zoo keeper encompasses all these skills.

WHERE DID THIS INTEREST IN EXOTIC SPECIES BEGIN?

I was born in Cambridge and my family lived in Cottenham on the outskirts of the city. I spent my early years on a farm where I had lots of pets and numerous orphaned or injured wildlife that my mother taught me how to look after. She wouldn't let us have any animals unless we first proved we could care for them properly – she made sure we had read books to know how to look after them, that we could afford the costs of keeping them and knew where to go for specialist veterinary advice.

AND HOW DID THAT DEVELOP INTO TRAINING ANIMALS?

I spent hours teaching our ferrets to come when called, to jump, walk to heel and to beg. I recall one young female ferret called Flossy that I acquired as a teenager when I was doing work experience at the Welsh Mountain Zoo. They had got her from the RSPCA but soon found she was unsuitable for working with the education team because she was considered too vicious. But she was just young and frightened, and she taught me a lot about putting in time with an animal to gain its trust. She also helped my Dad to lay new wiring when he was renovating the house. To save ripping up all the floorboards, we took up just a couple at each end of the room, I popped her down, called her from the other side, and she ran straight for me, with a piece of string tied to her collar that we then used to pull all the new electrical wires through after her!

WHERE DID YOU GO FOR YOUR PROFESSIONAL QUALIFICATIONS?

After leaving school, I took the BTEC national diploma in animal care at the College of West Anglia in Cambridge. Then I received a work experience placement at Heythrop Zoological Garden (HZG)s, a private collection specializing in providing wild animals for TV, film, media and live events. Later I went on to do a degree in animal behaviour at the University of Liverpool and continued working at HZG in my holidays. I have worked at various places since then – including Honolulu Zoo in Hawaii and Shepreth Wildlife Park in Hertfordshire, where I was responsible for the falconry demonstrations. I also went to work at Reaseheath College in Nantwich as a keeper instructor where I achieved a teaching qualification.

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WHEN DID YOU SET UP THE COMPANY?
I have been working full time with Reptiles etc since 2017 but I had been working on a freelance basis for many years. The company is really just me but I am supported by a dedicated team of friends, former colleagues and volunteers. I also have a very understanding partner who helps me with the day-to-day care of my own collection of reptiles, amphibians, invertebrates, birds and rodents.

CAN ANYBODY DO THIS SORT OF WORK?
In Britain any type of commercial activity involving wild animals should be covered by a performing animals licence, animal transport certification and insurance. I never work with anyone who isn't a qualified animal professional or a dedicated trainee in the case of work experience placements. Regrettably, there are many amateur enthusiasts doing similar work who don't have full licensing, whose animals have not been habituated or properly trained, and even the basic welfare needs of the animals are not catered for. There are reptiles on display at live events that are not provided with a heat pad, have no water available, are not monitored with thermometers and thermostats and have no hiding places provided for them. This is much more common than you would think.

WHAT CAN YOU TELL ME ABOUT YOUR TRAINING METHODS?
It is all about relationship building, knowing your animal's motivations and needs, and using force-free methods alongside positive reinforcement. Your readers will be familiar with clicker training for dogs, that is a fantastic tool and a real gateway to achieving a lot of useful behaviours. But the real basis of my training is positive reinforcement. Trainers talk about a "bridge" – a signal that marks the moment when the animal achieves what the trainer is looking for. That may be a click, a whistle or just the word 'good' but a mechanical bridge works best because of the differences in volume, tone and timing. I also use a target, a stick or light beam to attract the animal to where I want it to go. Often with birds and animals their natural curiosity will cause them to approach this target, which you then mark with the click and reinforce with a tasty treat.

THIS APPROACH WORKS FOR ALL SPECIES?
Yes, but the timing varies between different groups. So for example, tortoises, monitor lizards and crocodilians are faster to investigate something new than bearded dragons or skinks. Body temperature and being accustomed to the presence of humans is also very important. Lizard species that rely on hunting by tracking the movement of prey may require the target stick to move or jiggle to attract their attention, whereas birds or mammals will often respond quickly to just seeing the target stick. But the principles work with most species. For example, I have worked with poison dart frogs, which you can put a small platform in the enclosure and flash a laser pointer on the platform every time before you drop food in. Before too long, just flashing the laser pointer on the platform will cause the frogs to hop on to it expecting to be fed.

WHAT IS THE MOST UNUSUAL SPECIES YOU HAVE WORKED WITH?
I once trained 10 Egyptian scarab beetles to run on a specially built race track for a scene in the BBC drama series Atlantis. The beetles had to run down the track in a particular sequence and repeat the performance over several takes while the actors cheered, placed bets and remembered to get their lines and positions right for the camera. The beetles did the exact right thing every take and I got a standing ovation for their performance when we cut!

ACTORS SAY YOU SHOULDN'T WORK WITH ANIMALS AND CHILDREN – WHICH ONES ARE PARTICULARLY DIFFICULT?
Hedgehogs can be challenging as they can be a bit short-tempered and of course they can curl into a ball whenever they've had enough which can make them quite difficult to work with! On the other hand, I once worked with a cobra who was very happy at work and very clever – if you guided her in the right direction across a set she would learn a route and repeat it for a film or photography set-up.

COULD THIS APPROACH HAVE APPLICATIONS IN VETERINARY PRACTICE?
Training animals to allow clinical procedures is really rewarding. My favourite example is that of a colleague who has trained some zebras to walk calmly alongside their trainers without a collar or restraint and also wait on a station and accept vaccination injections voluntarily – really impressive. The same techniques could easily be implemented with horses or other companion animals to take away fear or manhandling when the vet comes. I also really enjoyed working with Emma Hunt at Reaseheath College and the rabbits under her care in the small animal department. It's an ongoing project and her rabbits now hop onto the weighing scales on vocal command alone. They will run into a carry box on cue, and we're working on a paw present to allow voluntary nail clipping.

CAN ANYONE LEARN THESE METHODS?
Vets or VN's with an interest in behaviour and training could certainly learn the basic principles of training in a very short space of time. They can then offer guidance and advice to pet owners to make both vet trips and administering basic treatments less stressful for their pets through a combination of habituation work and training techniques. It would be wonderful I'm sure for vets (as well as pets and their owners!) to be able to work with animals that are less stressed and more willing to be a part of their own health care. C

JSAP Research Review

REVIEW
JSAP's commissioned reviews address problem areas in clinical practice

Ureteral ectopia and urethral sphincter mechanism incompetence: an update on diagnosis and management options

L. J. Owen

The two leading causes of urinary incontinence in dogs are ureteral ectopia in juveniles and urethral sphincter mechanism incompetence in adults. While the accuracy of diagnosis of ectopic ureters has improved due to increased use of CT and/or cystoscopy, the diagnosis of urethral sphincter mechanism incompetence largely remains one of exclusion. New treatment options have been developed for both conditions, which have reduced morbidity and mortality, although the rate of long-term urinary continence has not significantly improved for either and neither has our understanding of the pathophysiology behind these failures. This review provides updates on the management of both of these conditions, with discussion of controversial areas and thoughts for future directions.

ESSAY

Development of non-governmental organisation-academic partnership to tackle rabies in Africa and Asia

L. Gamble, A. Gibson, S. Mazeri, B. M. de C Bronsvoort, I. Handel, R. J. Mellanby

Rabies kills approximately 60,000 people each year, mainly in sub-Saharan Africa and Asia, of which 40% of victims are less than 15 years old. Once clinical signs develop, the disease is almost invariably fatal. Globally, rabies has been estimated to cause 3·7 million disability-adjusted life years and $8·6B in economic losses annually. The vast majority of human rabies cases are caused by bites from rabies infected dogs. Despite this loss of human life and resultant economic and societal costs, rabies can be prevented in both humans and dogs by vaccination. This has been demonstrated in many countries, notably in Central and South America, where large-scale, high coverage mass dog vaccination programmes have dramatically reduced the incidence of rabies. Even in parts of Africa and Asia, projects have shown that rabies can be eliminated locally. Nevertheless, rabies remains an important cause of mortality in many sub-Saharan and Asian countries. The reasons why some countries have been able to effectively eliminate rabies whereas others have not are complex and often impossible to definitively identify; commonly cited explanations include political, economic, logistical and societal barriers.

PAPERS

Gastrointestinal effects following acupuncture at Pericardium-6 and Stomach-36 in healthy dogs: a pilot study

D. I. Radkey, V. E. Writt, L. B. C. Snyder, B. G. Jones, R. A. Johnson

Objectives

To quantify changes in gastric and intestinal emptying times in the conscious dog following gastrointestinal acupoint stimulation.

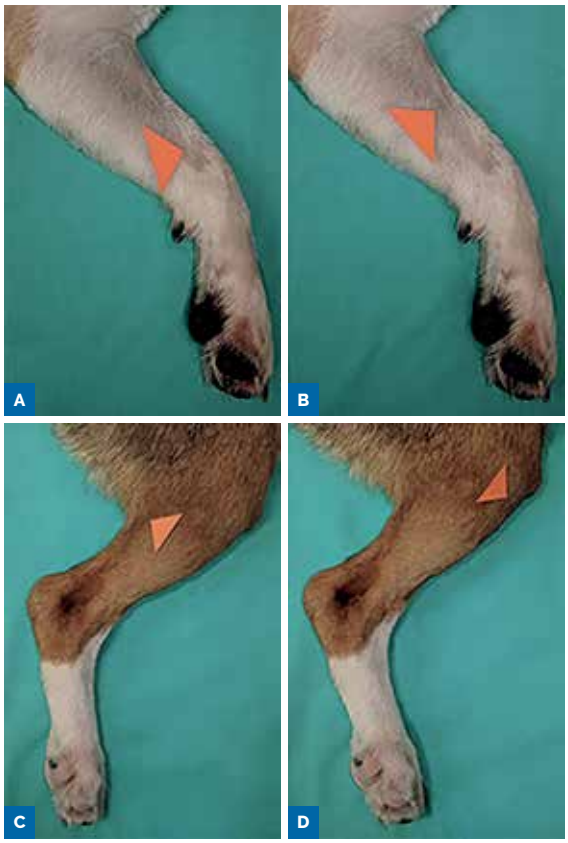
Materials and Methods

In a randomised, blinded crossover study, six dogs were fed 30×1.5 mm barium-impregnated polyethylene spheres and underwent: (1) no acupuncture (*Control*); (2) stimulation of target points PC6 and ST36 (*Target*) and (3) stimulation of non-target points LU7 and BL55 (*Sham*). Abdominal radiographs were assessed immediately after feeding the spheres and every hour for 12 hours and their number in the stomach and large intestines was counted.

Results

The number of barium-impregnated polyethylene spheres found distal to the stomach was less in the *Target* group compared to the *Control* and *Sham* groups between hours 2 and 4, but no differences between groups were seen for the remainder of the treatment period. The number of spheres found within the colon/rectum was less in the *Target* group compared to the

  Available in the BSAVA Library: DOI: 10.22233/20412495.0119.30



Arrows indicate the specific acupoints used in the Radkey DI *et al.* study. (A) Lung-7; (B) Pericardium-6; (C) Bladder-55 and (D) Stomach-36.
(Reproduced with permission from JSAP)

Control and *Sham* groups between hours 4 and 6, and compared to the *Sham* group only at hour 7 but no differences between groups were seen after hour 8.

Clinical Significance

Acupuncture targeted at the gastrointestinal tract of dogs was associated briefly with slowed gastric emptying and gastrointestinal transit time. This foundational study lays the groundwork for additional studies of acupuncture effects associated with altered physiologic states.

Health-related quality of life following surgical attenuation of congenital portosystemic shunts *versus* healthy controls

P. Bristow, V. Lipscomb, A. Kummeling, R. Packer, H. Gerrits, K. Homan, V. Ortiz, K. Newson, M. Tivers

Objectives

To design a health-related quality of life questionnaire for dogs with congenital portosystemic shunts, use it in a cohort of dogs treated with suture attenuation and compare results with those obtained from a healthy control cohort.

Materials and Methods

Data were collected from the hospital records of dogs treated with suture ligation of an intrahepatic or extrahepatic congenital portosystemic shunt at two referral centres. Owners were asked to complete a questionnaire assessing their dog's health-related quality of life preoperatively (retrospectively) and at the time of follow-up. Owners of control dogs also completed the questionnaire.

Results

One hundred and twenty-eight dogs with congenital portosystemic shunts and 131 control dogs were recruited. Median follow-up time was 64 months (range 19.7 to 157.2). The median long-term health-related quality of life score was excellent for both intrahepatic and extrahepatic shunt cases and similar to that of control dogs. The long-term portosystemic shunt clinical sign scores for both intrahepatic and extrahepatic congenital portosystemic shunt dogs were significantly worse than the those of the control group.

Clinical Significance

Suture attenuation of congenitial portosystemic shunts is associated with an excellent health-related quality of life score at long-term follow-up.

The addition of metronomic chemotherapy does not improve outcome for canine splenic haemangiosarcoma

C. K. Alexander, K. L. Cronin, M. Silver, H. L. Gardner, C. London

Objectives

To determine whether the addition of metronomic chemotherapy improved outcome for dogs with splenic haemangiosarcoma treated with splenectomy and adjuvant maximum tolerated dose chemotherapy.

Materials and Methods

Medical records were examined retrospectively for dogs with splenic haemangiosarcoma that had undergone splenectomy followed by anthracycline-based chemotherapy. Thirty-nine dogs underwent splenectomy followed by maximum tolerated dose chemotherapy with an anthracycline, cyclophosphamide, or both (Group 1). Twenty-two dogs underwent splenectomy followed by adjuvant maximum tolerated dose chemotherapy with an anthracycline, cyclophosphamide, or both, plus metronomic chemotherapy (Group 2). Dogs in both

groups were further separated into those treated with either maximum tolerated dose anthracycline or maximum tolerated dose anthracycline and cyclophosphamide.

Results

Median progression-free survival was 165 days and median overall survival time was 180 days in Group 1. Median progression-free survival was 185 days and median overall survival time was 212 days in Group 2. In both groups, the overall survival was shorter in dogs that had received maximum tolerated dose cyclophosphamide.

Clinical Significance

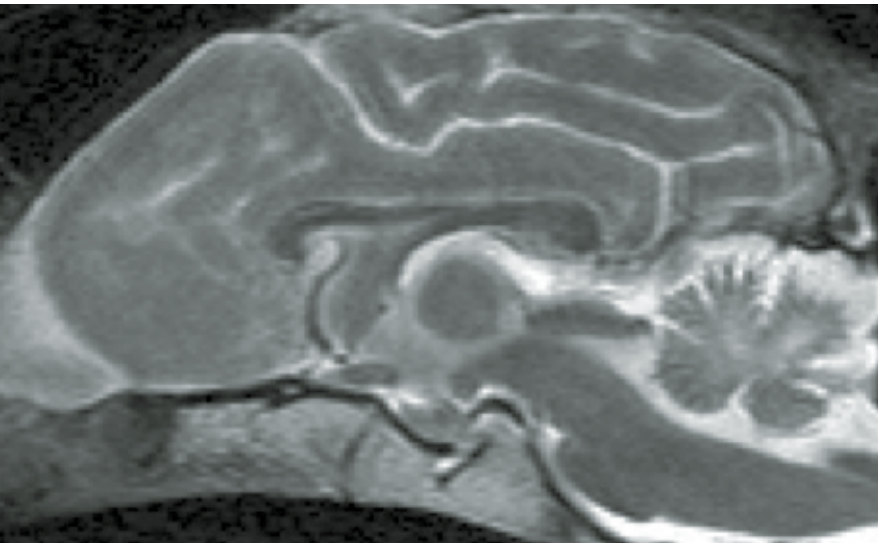
The addition of metronomic to maximum tolerated dose chemotherapy protocols does not appear to improve outcome in dogs with splenic haemangiosarcoma treated with splenectomy and maximum tolerated dose chemotherapy.

Serological prevalence of toxoplasmosis and neosporosis in dogs diagnosed with suspected meningoencephalitis in the UK

A. M. Coelho, G. Cherubini, A. De Stefani, A. Negrin, R. Gutierrez-Quintana, E. Bersan, J. Guevar

Objectives

To assess the prevalence of antibodies to *Toxoplasma gondii* and *Neospora caninum* in a population of dogs with a diagnosis of suspected inflammatory meningoencephalitis.



From the Coelho AM *et al.* study. MRI: T2WI sagittal view of the brain of one of the five dogs with positive titre for *Neospora caninum* and abnormal cerebellar MRI findings; here revealing diffuse intra-axial hyperintensity and peripheral hyperintensity with widened cerebellar sulci. (Reproduced with permission from JSAP)

Materials and Methods

Medical records of three referral centres were reviewed from 2008 to 2016 to identify a cohort of dogs diagnosed and treated for suspected inflammatory meningoencephalitis after testing for evidence of exposure to these pathogens.

Results

In our sample of 400 dogs the prevalence for exposure (IgG>1:50) to *Toxoplasma gondii*was 8/201 (3·98%). Active infection (IgG titre >1:400 or/and an IgM titre >1:64 and/or positive PCR in CSF) was suspected in 1/400 (0·25%). The prevalence for exposure [Indirect fluorescent antibody (IFA) titre >1:50] and active infection (IFA titres ≥1:400 and/or positive PCR in CSF) with *Neospora caninum* were 14/201 (6·96%) and 9/400 (2·25%), respectively.

Clinical Significance

In view of the low prevalence of protozoan infections, the risk associated with starting immunosuppressive medication in dogs with evidence of inflammatory meningitis or encephalitis in the UK appears low.

Evaluation of compounded aqueous milbemycin oxime: issues with formulation potency and reproducibility

Z. N. Cochrane, D. J. Berger, A. K. Viall, D. Schrunk, J. F. (Hans) Coetzee

Objectives

To determine the potency and reproducibility of milbemycin oxime when compounded as an aqueous suspension (20 mg/mL).

Materials and Methods

Preparation choice reflected current prescribing practices. Samples were acquired by prescription from two national veterinary compounding pharmacies at three time points. Two different storage conditions were evaluated and sampled at four time points from the order date (day 7, 14, 21 and 28). Milbemycin oxime recovery was performed by solid-phase extraction and concentration strength measured *via* high-performance liquid chromatography.

Results

The average concentration on day 7 for Pharmacy A samples was 16.29 mg/mL [confidence interval (CI): 15.66 to 16.92] with a coefficient of variation (CV) = 11%, while for Pharmacy B it was 20.46 mg/mL (CI: 19.83 to 21.08) with CV = 22%. The mean decrease

in concentration over 28 days for Pharmacy A was 22% (CI: 9% to 34%) while Pharmacy B was 18% (CI: 2% to 35%).

Clinical Significance

The compounded milbemycin oxime suspensions evaluated in this study deviated by more than 10% from their labelled strength in five of the six lots. Clinical efficacy of compounded milbemycin oxime suspensions remains unknown and the use of these products should be discouraged at this time.

Comparison of short-term complications between unilateral and single-session bilateral surgery for medial patellar luxation in small/medium breed dogs

L. B. Sanders, J. M. Bevan

Objectives

To compare the short-term complications of unilateral *versus* single-session bilateral medial patellar luxation surgery in small dogs.

Materials and Methods

The medical records of dogs weighing less than 13·6 kg that underwent medial patellar luxation surgery were reviewed. Dogs were included in one of two groups based on the type of surgery performed (unilateral or single-session bilateral). Postoperative patellar luxation grade and complications were compared between the groups.

Results

Two hundred and fifty-one dogs were included. In the bilateral treatment group, there was less improvement in patellar luxation grade and postoperative medial patellar luxation grade was higher. The frequency of major complications was higher in the bilateral group (23%) compared with the unilateral group (12%).

Clinical Significance

Single-session bilateral medial patellar luxation surgery was associated with a higher complication rate compared to unilateral surgery in this non-randomized observational study. Staged rather than single-session bilateral surgery should be considered in dogs with bilateral medial patellar luxation to improve clinical outcome and reduce the chance of major complications.

CASE REPORT

Presumptive migrating gall bladder mucocoele in two dogs with gall bladder rupture

R. K. Burchell, L. Thornton, C. K. Lim, M. Murakami, Y. Nakamura, A. Gal

A 10-year-old neutered female soft-coated wheaten terrier and a 10-year-old, entire female Pomeranian were presented for vomiting and anorexia. Using ultrasound, an oval structure with a stellate, kiwifruit-like appearance typical of a gall bladder mucocoele was observed in the caudal abdomen of the soft-coated wheaten terrier and adjacent to the liver in the Pomeranian. There was also a moderate volume of abdominal effusion in both dogs. Cytology of the peritoneal fluid indicated a sterile exudative process but varied between the two dogs, with an absence of bile pigment in the soft-coated wheaten terrier and marked bile peritonitis in the Pomeranian. An entire free-floating ectopic mucocoele was confirmed via exploratory laparotomy with concomitant gall bladder rupture and common bile duct obstruction. Both dogs recovered completely after surgery. This is the first report of cases of gall bladder rupture with entire free-floating gall bladder mucocoeles in dogs.

IMAGES IN SMALL ANIMAL PRACTICE
Sometimes a picture tells the story…

Right atrial aneurysm in a dog

L. A. Murphy, N. J. Russell, R. K. Nakamura

This case of a 9-year-old Boston Terrier is accompanied by additional illustrations and videos available with JSAP online.

LETTER TO THE EDITOR

Life-threatening arterial haemorrhage following venous occlusion during nephrectomy for renal carcinoma

T. Charlesworth

A report of a 33 kg, 11-year-old Weimaraner.

BSAVA BUSINESS

British Small Animal Veterinary Association Annual General Meeting

Read the full articles online

All BSAVA members have full access to JSAP, visit **www.bsava.com/JSAP** and (once logged in) click on the link.

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JSAP welcomes submissions of original research that contributes to small animal veterinary practice. All papers are subject to peer-review. Further information and a link to the submission system can be found at **www.wileyonlinelibrary.com/journal/JSAP**

Regional accents

VOLUNTEER VOICE

Eleanor O'Leary

Southern Region Committee Secretary

Athbhlian faoi mhaise daoibh! (Now you know how to write "Happy New Year" in Irish!)

I graduated from University College Dublin in 2014. Not long after, I settled down in Hampshire and I haven't looked back. I work as a full-time small animal general practitioner and I am set to start a BSAVA certificate in Small Animal Medicine this January.

Outside of work, my interests include gardening, yoga, baking, travelling and scuba diving.

I joined the Southern committee in 2016 as a volunteer because I was interested in being involved in the veterinary community outside my own work. I became the secretary in 2018. Having had the opportunity to attend the Regional Forum in Glasgow in 2018, it really made me realize just how much happens in the background that I was previously unaware of and how much volunteers make a difference.

Times are changing in how CPD is provided. Though webinars provide such a plethora of topics from amazing speakers and can be very convenient in that you can watch on demand while on the exercise bike or from the couch and be able to nip to the fridge for snacks as required, they do not, however, replace the social aspect.

I really enjoy local CPD for many reasons, from meeting the speakers, going to new places, practicing new skills and engaging with vets and nurses from other practices.

We are very fortunate in having a very passionate committee who dedicate a huge amount of effort into organizing first rate CPD. Last year we provided day meetings for topics such as Well-being in practice, ECC, Endoscopy, General medicine for chickens, and some of our evening meetings included Ocular emergencies, an Update on Leishmaniasis and "A dummies guide to lumpectomies".

2019 is set to be a jam-packed year with topics including Social media, Oncology, Dermatology as well as a day meeting of Ophthalmology. Do save the dates in the diary and book as spaces tend to go quickly!

As part of this Volunteer Voice section, I would like to take the opportunity to thank all the wonderful speakers who have supported us in providing top quality CPD to our members over the past few years. I wish there was space to individually name all of them, they have also been integral to what we can do and what makes BSAVA great!

Being involved as a volunteer has been very rewarding. I would definitely recommend that people get involved with the BSAVA; it is nice to feel part of a community and knowing you are contributing to the development of others as well as yourself.

If you are interested in joining us and being a part of our committee do get in touch, we would love to get to know you! Please email **volunteer@bsava.com**.

From emerging parasites to that itchy feeling

The final North West regional CPD event of 2018 was an evening talk on Emerging Parasites and Diseases by Ian Wright held in Preston. This highly topical course proved a really helpful update for those of us in companion animal practice.

The first CPD event in the New Year is scheduled for Tuesday 29 January and is an evening intended for vets focusing on canine anaemia. The session entitled 'The pale dog' will be led by Dan Batchelor, at the Macdonald Tickled Trout Hotel, Preston from 20:00 to 22:00. The event is FREE for BSAVA members and £40 (incl. VAT) for non-members.

On 8 March, Sue Paterson and Alison Wilson will be visiting The Mere, Knutsford, Cheshire to 'Fix that itch', a 1-day course focusing on some of the newer therapeutics available for managing ectopic/itchy dogs, the importance of appropriate antimicrobial prescribing and when and how to use topical therapy. The day starts at 10:00, finishes at 17:00, costs £200 (incl. VAT) for BSAVA members and for non-members £300 (incl. VAT).

We are always keen to hear from local BSAVA members with feedback and suggestions for events, so contact **regionalsupport@bsava.com** and let us know what you think!

Sarah Hart, BSAVA North West Regional Committee

Pancreatitis – what you need to know!

Penny Watson will be visiting the South East region on 24 January to give a 1-day course update on how to diagnose, approach and manage pancreatitis; cases which often prove to be difficult in general practice. This course is intended for both vets and VNs, will be held at the Holiday Inn, Gatwick and is kindly being sponsored by Protexin. We would love for you to join us!

For more information about South East region, getting involved, and to see our upcoming courses, please visit **https://www.bsava.com/Education/CPD/Regional-CPD/South-East**.

Ellie Groves, BSAVA South East Regional Committee

  Available in the BSAVA Library: DOI: 10.22233/20412495.0119.34

Coping with road traffic accident cases

The Metropolitan region has a choice of evening CPD meetings in January, February and March 2019.

- On 14 January, Dan Chan, specialist in Veterinary Emergency and Critical Care and Veterinary Nutrition, will be speaking about the approach to the road traffic accident patient. Do you get stressed when an RTA patient arrives at your practice? This meeting will give you a logical approach to these cases, and help you understand how to deal with the many problems these patients can have. Up-to-date information on optimum treatment and care will be described as well as a pragmatic approach for a first-opinion setting.
- On 5 February, Lindsay Kellett-Gregory, specialist in Emergency and Critical Care, will talk us through tricky toxicology cases: how to recognize them and how to treat them. This course is aimed at anyone in first-opinion practice or those working in a vet ER.
- On 9 March, David Neilson, a veterinary anaesthetist, addresses that common and difficult question: is my patient ever too old for a general anaesthetic? He will help everyone build confidence in how to improve anaesthetic technique for older patients and those with co-morbidities. Not to be missed!

All three meetings with be held at the Brookmans Park Golf Club in Hertfordshire and hot food will be provided. Please visit **www.bsava.com/Education/CPD/Regional-CPD/Metropolitan** for more information and to book. We would love to welcome as many of you as possible!

The BSAVA Metropolitan regional committee would also like to invite all its members to join them for an evening of relaxation and fun for their Annual Regional Meeting. There will be a very small bit of official business, alongside a pub quiz and a chance to catch up and network with vets and vet nurses in your region. A glass of wine and pizza will be provided for all. Come along and join us on 23 January at Brookmans (Herts), and book your place online!

Rebecca Geddes, BSAVA Chair of Metropolitan Region

Behavioural considerations

The North East region is hosting 'Canine and feline behaviour' a 1-day course on Wednesday 20 January at the Great Yorkshire Showground in Harrogate.

By the end of the workshop delegates should have an understanding of:

- Emotional motivations and behavioural responses
- Environmental optimization for cats and dogs living in a domestic environment
- Species-specific communication and its role in understanding emotional health
- Consideration of behavioural factors in decisions about neutering
- Stress audits and their importance in the veterinary practice.

The course costs £200 (incl. VAT) for BSAVA members, and for non-members, £300 (incl. VAT).

Then on Wednesday 6 February, Aidan Raftery with be hosting an evening update on tortoises.

Sarah Heath, BSAVA North East Regional Committee

Getting down to the raw facts

Two excellent speakers will be visiting the East Anglia region on Wednesday 6 February to discuss whether we should be feeding raw food to dogs and cats, or not. Isuru Gajanayake, Head of Internal Medicine at the Willows and Morkel Pienaar, First Officer of the Raw Feeding Veterinary Society, will take part in the debate, which will focus on the evidence for and against the practice of raw feeding with a view to helping inform delegates in this controversial area.

The evening course being held at Wood Green, The Animals Charity, from 19:30–21:30, is FREE to BSAVA members, costs £40 (incl. VAT) for non-members and £20 (incl. VAT) for non-member VNs. This course is kindly sponsored by the Pet Food Manufacturers Association.

James Warland, BSAVA East Anglia Region Chair

Confronting the reptile patient

The South West region will be welcoming Elisabetta Mancinelli to Bath Racecourse on Thursday 7 March to provide an overview of how to approach a reptile patient from not only a clinical and surgical perspective but also to highlight points relevant for emergency room veterinary professionals. Delegates will also be encouraged to seek additional species-specific information to better medically diagnose and treat these patients.

The evening session, from 19:30–21:30, is intended for both vets and VNs and the learning objectives and topics covered include:

- How to deal with a reptile patient from the waiting room to the hospitalization area
- How to perform a complete clinical evaluation
- How to perform common and useful clinical techniques
- How to approach and care for the reptile surgical patient.

The course is FREE to BSAVA members, costs £40 (incl. VAT) for non-members and £20 (incl. VAT) for VN non-members.

Jim Hughes, BSAVA South West Region Chair

REGIONS

For further information about courses in your area, please contact **regionalsupport@bsava.com**.

To book a place on a regional course, please visit **www.bsava.com/cpd** or call 01452 726700 for more information.

CPD diary

For course bookings visit www.bsava.com/education

For further details on any course please email regionalsupport@bsava.com

January

WEST MIDLANDS
Tuesday 8 January
Reg: 09:30, Course: 10:00–17:00
Managing multiple medical problems
Kit Sturgess
The Punch Bowl Inn, Bridgnorth, Shropshire

EAST MIDLANDS
Thursday 10 January
Reg: 19:30, Course: 20:00–22:00
Small animal dentistry: rabbits
Bob Partridge
Cedric Ford Pavilion, Newark Showground

METROPOLITAN
Monday 14 January
Reg: 19:30, Course: 20:00–22:00
24 hours in Vet ECC: approach to the road traffic accident
Dan Chan
Brookmans Park Golf Club, Hatfield

WEST MIDLANDS
Tuesday 15 January
Reg: 08:30, Course: 09:00–13:00
General practitioner echocardiography: how to do it in an EPIC way?
Chris Linney and Brigite Pedro
Rodbaston Campus, South Staffordshire

WEST MIDLANDS
Tuesday 15 January
Reg: 13:00, Course: 14:00–18:00
General practitioner echocardiography: how to do it in an EPIC way?
Chris Linney and Brigite Pedro
Rodbaston Campus, South Staffordshire College

SOUTH WEST
Tuesday 15 January
Reg: 19:00, Course: 19:30–21:30
Back to basics: first-opinion approach to the spinal patient
Nicolas Granger
Engineer's House, Bristol

LEARN@LUNCH WEBINAR FOR VETS
Wednesday 16 January
Time: 13:00–14:00
How to talk to clients about anaesthetic risk
Details from webinars@bsava.com

SOUTHERN
Wednesday 16 January
Reg: 19:30, Course: 20:00–22:00
Holistic rabbit anaesthesia: it's more than just drugs!
Jo Hinde
The Potter's Heron, Romsey

NORTH EAST
Sunday 20 January
Reg: 09:30, Course: 10:00–17:00
Canine and feline behaviour
Sarah Heath
Pavilions of Harrogate, Great Yorkshire Showground

LEARN@LUNCH WEBINAR FOR VNs
Wednesday 23 January
Time: 13:00–14:00
Wounds and bandaging
Georgie Hollis
Details from webinars@bsava.com

WEST MIDLANDS
Wednesday 23 January
Reg: 19:30, Course: 20:00–22:00
Chicken consultations for first-opinion small animal vets and nurses
Victoria Roberts
RSPCA Frankley, Birmingham

METROPOLITAN
Wednesday 23 January
Reg: 19:30, Course: 20:00–22:00
EVENING SOCIAL EVENT
Pub quiz and social event for Metropolitan region Annual Regional Meeting
Brookmans Park Golf Club, Hatfield

SOUTH EAST
Thursday 24 January
Reg: 09:30, Course: 10:00–17:00
Pancreatitis: what you need to know!
Penny Watson
Holiday Inn, Gatwick

NORTH WEST
Tuesday 29 January
Reg: 19:30, Course: 20:00–22:00
The pale dog
Daniel Batchelor
The Tickled Trout, Preston

February

METROPOLITAN
Tuesday 5 February
Reg: 19:30, Course: 20:00–22:00
24 hours in vet ECC: everything you need to know about toxicology
Lindsay Kellet-Gregory
Brookmans Park Golf Club, Hatfield

EAST ANGLIA
Wednesday 6 February
Reg: 19:00, Course: 19:30–21:30
Should we be raw feeding dogs and cats?
Isuru Gajanayake and Morkel Pienaar
Wood Green, The Animals Charity, Godmanchester

NORTH EAST
Wednesday 6 February
Reg: 19:30, Course: 20:00–22:00
Tortoises
Aidan Raftery
IDEXX Wetherby

BSAVA EDUCATION
Thursday 7 February
Reg: 09:30, Course: 10:00–17:00
Developing confidence in feline practice
Feline neurology: taking the 'n' out of can't
Mark Lowri
Leeds
Details from courses@bsava.com

SCOTTISH REGION
Sunday 10 February
Reg: 09:30, Course: 10:00–17:00
Anaesthesia in first-opinion practice
Pat Pawson, Madonna Livingstone, Zamantha Marshall and Lissann Wolfe
Glasgow University Vet School

WEST MIDLANDS
Wednesday 13 February
Reg: 09:30, Course: 10:00–17:00
Creative anaesthesia and pain management
Alessandra Mathis and Gwen Covey-Crump
Hillscourt, Birmingham

LEARN@LUNCH WEBINAR FOR VETS
Wednesday 13 February
Time: 13:00–14:00
Updates in management of the BOAS patient
Jane Ladlow
Details from webinars@bsava.com

NORTHERN IRELAND
Saturday 23 February
Reg: 09:30, Course: 10:00–17:00
Fracture management: kintsugi for the canine (and feline)
Philip Witte
Slieve Donard Resort and Spa, Newcastle, County Down

Available in the BSAVA Library: DOI: 10.22233/20412495.0119.36

LEARN@LUNCH WEBINAR FOR VNs
Wednesday 27 February
Time: 13:00–14:00
How to help a cat with flu
Suzanne Rudd
Details from webinars@bsava.com

BSAVA EDUCATION
Thursday 28 February
Reg: 09:30, Course: 10:00–17:00
Developing confidence in canine practice
Cardiology: mitral valve disease and dilated cardiomyopathy in dogs: bringing cardiology into the 21st century
Keiran Borgeat
Woodrow House, Gloucester
Details from courses@bsava.com

March

EAST ANGLIA
Sunday 3 March
Reg: 09:30, Course: 10:00–17:00
GI medicine and surgery
Ian Battersby and Ronan Doyle
Radisson Blu, Stansted

CYMRU/WALES
Tuesday 5 March
Reg: 19:30, Course: 20:00–22:00
Head tilt in rabbits: causes and cures
Livia Benato
Carmarthen Veterinary Centre

SCOTTISH
Thursday 7 March
Reg: 18:30, Course: 19:00–21:00
Wildlife regulations and rehabilitation
Colin Dunlop
Deer Park Golf and Country Club, Livingstone

SOUTH WEST
Thursday 7 March
Reg: 19:00, Course: 19:30–21:30
Clinical approach to the reptile patient
Elisabetta Mancinelli
Bath Racecourse

NORTH WEST
Friday 8 March
Reg: 09:30, Course: 10:00–17:00
Fix that itch! Advances in the diagnosis and management of the itchy cat and dog
Sue Paterson and Alison Wilson
The Mere, Knutsford, Cheshire

SOUTHERN
Saturday 9 March
Reg: 09:30, Course: 10:00–17:00
Eye can do that! Practical ophthalmic surgery for the GP vet!
Heidi Featherstone
Sparsholt College, Hampshire

BSAVA EDUCATION
Monday 11 March
Reg: 09:30, Course: 10:00–13:00
First steps in the clinic
Dentistry: encouraging a healthy mouth: top tips for a successful dental
Woodrow House, Gloucester
Details from courses@bsava.com

BSAVA EDUCATION
Monday 11 March
Reg: 13:30, Course: 14:00–17:00
First steps in the clinic
Behaviour: dogs don't bite because they are bad: understanding aggression in dogs
Helen Zulch
Woodrow House, Gloucester
Details from courses@bsava.com

CYMRU/WALES
Tuesday 12 March
Reg: 09:00, Course: 09:00–16:00
Practical endoscopy
Kit Sturgess
Welshpool Livestock Market

BSAVA EDUCATION
Tuesday 12 March
Reg: 09:30, Course: 10:00–13:00
First steps in the clinic
Prevention is better than cure: packing a punch with prophylaxis
Vicky Black
Woodrow House, Gloucester
Details from courses@bsava.com

BSAVA EDUCATION
Tuesday 12 March
Reg: 13:30, Course: 14:00–17:00
First steps in the clinic: exotics
From chameleons to iguanas: how to successfully negotiate the clinical exam of a reptile patient
Tom Dutton
Woodrow House, Gloucester
Details from courses@bsava.com

LEARN@LUNCH WEBINAR FOR VETS
Wednesday 13 January
Time: 13:00–14:00
Sedation for the challenging cat or dog
Matthew Gurney
Details from webinars@bsava.com

NORTH EAST
Sunday 17 March
Reg: 09:30, Course: 10:00–17:00
Not just a stab in the dark! Shining the light on surgical challenges
Liz Welsh
Gomersal Park Hotel, West Yorkshire

METROPOLITAN
Tuesday 19 March
Reg: 19:30, Course: 20:00–22:00
Are they ever too old for GA?
David Neilson
Brookmans Park Golf Club, Hatfield

LEARN@LUNCH WEBINAR FOR VNs
Wednesday 27 March
Time: 13:00–14:00
Biochemistry basics
Details from webinars@bsava.com

SOUTH WEST
Wednesday 27 March
Reg: 19:00, Course: 19:30–21:30
10 important things about lymphoma that you may not know
Owen Davies
Darts Farm, Exeter

April

BSAVA EDUCATION
Tuesday 16 April
Reg: 09:30, Course: 10:00–17:00
Developing confidence in canine practice
Approach to common respiratory diseases
Mike Martin
Woodrow House, Gloucester
Details from courses@bsava.com

EAST ANGLIA
Tuesday 16 April
Reg: 19:00, Course: 19:30–21:30
Bothersome bottoms
Sue Paterson
Swayne & Partners, Bury St. Edmonds

LEARN@LUNCH WEBINAR FOR VETS
Wednesday 17 April
Time: 13:00–14:00
How can I help my nurses?
Matthew Rendle
Details from webinars@bsava.com

LEARN@LUNCH WEBINAR FOR VNs
Wednesday 24 April
Time: 13:00–14:00
How to understand pet food labels
Marge Chandler
Details from webinars@bsava.com

WEST MIDLANDS
Thursday 25 April
Reg: 19:15, Course: 20:00–22:00
Case based CPR
Matt Gurney
Willows Veterinary Centre, Solihull

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Extra £5 discount on all BSAVA publications for members attending any BSAVA CPD event.

All dates were correct at time of going to print; however, we suggest that you contact the organizers for confirmation.

Developing confidence in canine practice

Mitral valve disease and dilated cardiomyopathy in dogs

Thursday 28 February 2019

Kieran Borgeat

Gloucester

Acquired heart disease is common in dogs, and poses a clinical challenge especially in the asymptomatic patient. This course will cover the recent thinking in how to deal with surprise heart disease in your clinic, as well as discuss the up-to-date management of heart disease and how to treat the very worst patients with heart failure.

Learn@Lunch webinars

These regular monthly lunchtime (1–2 pm) webinars are FREE to BSAVA members – just book your place through the website in order to access the event. The topics will be clinically relevant, and particularly aimed at those in first-opinion practice. There will be separate webinar programmes for vets and for nurses.

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Coming soon...

- 16 January **How to talk to clients about anaesthetic risk**
- 23 January **Wounds and bandaging**
- 13 February **Updates in the management of the BOAS patient**
- 27 February **How to help a cat with flu**

First steps in the clinic – Woodrow House, Gloucester

The first steps in the clinic courses are aimed at new graduates or those new to small animal practice.

Dentistry: encouraging a healthy mouth: top tips for a successful dental

Monday 11 March: 10:00–13:00

Visit **www.bsava.com/Education** for further details

Behaviour: dogs don't bite because they are bad – understanding aggression in dogs

Monday 11 March: 14:00–17:00

Helen Zulch

Preventative care: prevention is better than cure – packing a punch with prophylaxis

Tuesday 12 March: 10:00–13:00

Dominic Barfield

Exotics: from chameleons to iguanas – how to successfully negotiate the clinical exam of a reptile patient

Tuesday 12 March: 14:00–17:00

Tom Dutton

For more information or to book your course

www.bsava.com/cpd

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BSAVA cpd KNOWLEDGE THAT MATTERS

Holter recording

This month *Kieran Borgeat*, Clinical Lead in Cardiology at Langford Vets presents notes on Holter recordings.

A Holter recording produces an ambulatory electrocardiogram (ECG) which is performed by a device attached temporarily to the thorax. In veterinary patients, this is most frequently performed in dogs, but horses, cats and other species have been monitored. Since Dr Jeff Holter's original 38 kg device was developed in 1947, monitors have become smaller and lighter, now recording digital data on a storage card which is later analyzed using specialist computer software.

Indications

- Syncope or exertional dyspnoea
- Episodic weakness or collapse, or unexplained signs such as panting heavily for no apparent reason
- Unexplained echocardiographic evidence of cardiac remodelling
- Diagnosis of dilated cardiomyopathy in a breed considered at-risk for ventricular arrhythmias, such as the Boxer, Dobermann or Great Dane
- Assessing average heart rate in atrial fibrillation, outside of the hospital environment and during exercise
- Screening for cardiomyopathy in the Dobermann or Boxer prior to breeding
- Further evaluation of an incidentally detected arrhythmia to assess risk of clinical signs or sudden death
- Serial monitoring of response to antiarrhythmic treatment

Markers of risk

Holter variables are associated with a poor prognosis in dogs with arrhythmias and provide information that is not available using other diagnostic tools. In dogs with ventricular arrhythmias, the presence of runs of ventricular tachycardia and R-on-T phenomenon (Figure 1; top) are associated with an increased risk of cardiac death. In patients with atrial fibrillation, a high mean 24-hour heart rate is associated with a shorter survival time.

Decision making

Holters allow clinicians to make decisions on whether to treat a patient, based on a uniquely thorough knowledge of heart rate, rhythm and risk factors. If high-risk or symptomatic tachyarrhythmias are identified, treatment with antiarrhythmic drugs may be indicated. After starting treatment, a repeat Holter is recommended to assess response. Since all antiarrhythmic drugs can theoretically be pro-arrhythmic, at least one follow-up Holter should be performed, even in patients that have apparently responded well. It is worth pointing out that the day-to-day variability of ventricular arrhythmias has been estimated at up to 80% even without treatment. Owing to this, most cardiologists assess response to treatment based on a reduction in the complexity of arrhythmias, rather than frequency alone.

Alternatively, intermittent bradyarrhythmias may be detected (Figure 1; bottom). This may be an indication for pacemaker placement, as medical treatment is rarely effective.

Pitfalls

Even if a practice owns equipment and runs its own recording service, a Holter provides data on over 100,000 heartbeats in a 24-hour period. The complexity of this data and lack of evidence-based guidelines on antiarrhythmic treatment mean that all recordings should be interpreted by an experienced cardiologist. If a Holter does not detect an abnormality, the clinician cannot exclude an arrhythmic cause of clinical signs unless an episode is reported by an owner during Holter monitoring. In such cases, use of an implantable ECG loop recorder may be useful.

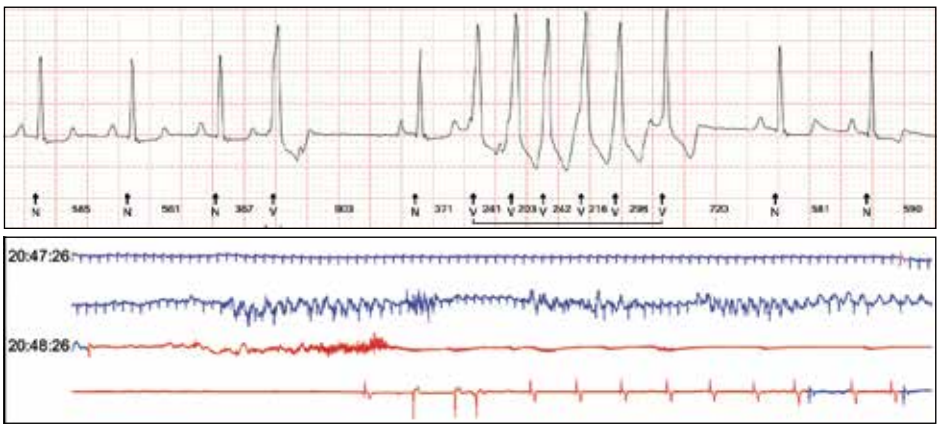

FIGURE 1: Strips of ECG from two Holters showing different pathological arrhythmias. Top: a short run of ventricular tachycardia from a dog with syncope. R-on-T phenomenon is identified by a lack of return to baseline between the wide and bizarre complexes (numbers seven to ten from the left). Bottom: a severely long pause identified during an episode of syncope and cyanosis with limb paddling in a Boxer dog. The pause (in red, followed by a slow ventricular escape rhythm) lasted for 39 seconds. Transvenous pacemaker implantation resolved clinical signs in this case.

Available in the BSAVA Library: DOI: 10.22233/20412495.0119.39

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