MVSC **News**

Summer 2009/2010
www.melbvet.com.au

Melbourne Veterinary Specialist Centre

Message from the General Manager

Welcome to the summer edition of our specialist newsletter, aimed at keeping you informed about all the new developments and additional services offered by the Melbourne Veterinary Specialist Centre (MVSC).

As a multidisciplinary specialist centre, our main aim is to ensure and maintain excellence in veterinary care and outcome for patients and clients. Compassion for our patients, as well as commitment, work ethic and communication are all fundamental values of the MVSC. Our referring veterinarians are also a key focus for the MVSC as we move forward.

I am pleased to report that we have numerous corporate initiatives and projects underway that will improve communication and the transfer of information to all veterinary practices throughout the State. We have the benefit of having a full time marketing and communications specialist within our dedicated team, which now comprises 50 staff members.

The MVSC is well on its journey of organisational transformation and growth. While this has been introspective in nature, the by-products and effects of the internal change management practices will have a substantial impact on the way we conduct business with our key stakeholders – our referring veterinarians.

Since the arrival of our third surgeon, Dr Arthur House, the Surgery team has been available to service the MVSC Essendon Fields facility five days a week. This is above and beyond ensuring the availability of two surgeons at Glen Waverley. Increased Surgery services, coupled with the very best levels of care in the specialist disciplines of Internal Medicine, Oncology, Dermatology and Behavioural Medicine are evidence of our vision to be the best veterinary specialist centre in Australia.

The increased staffing levels throughout the business has also been one of our key operational strategies to ensure the level of service provided to our customers is in line with our vision and values statements. The MVSC is proud of its highly experienced and dedicated group of practitioners and nursing staff that continually strive to deliver excellence in veterinary care.

I would like to take this opportunity to thank our referring veterinarians for their referrals to us over the recent months and say that I look forward to working with you in the near future. If you have any queries or require any information on our specialist services please do not hesitate to contact me directly; otherwise, a member of our team will be more than happy to answer your questions. As always we encourage ongoing feedback from our referring veterinarians regarding our levels of service. You can contact the Centre on (03) 9887 8844, or email: office@melbvet.com.au.

Chris Potaris

General Manager
Melbourne Veterinary Specialist Centre

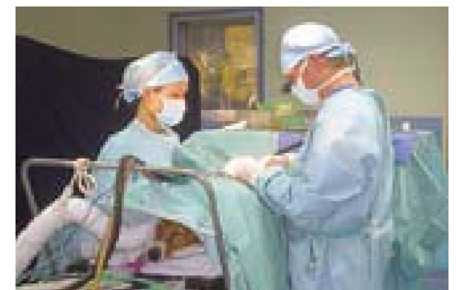
Research into triple tibial osteotomies published

Dr Arthur House's article on triple tibial osteotomies (TTO) for surgical management of cranial cruciate disease was recently published in the British Small Animal Veterinary Association *Journal of Small Animal Practice* (50: 212–221).

The paper titled 'Preliminary experiences of the triple tibial osteotomy procedure: tibial morphology and complications' was a collaboration between two referral institutions in the UK. The research explored the outcome and complications experienced with the technique.

The review demonstrated that dramatic variation exists between the morphology of individual dogs proximal tibias. In 21 dogs that had the procedure, the size of the tibial wedge ostectomy was modified because of variable tibial morphology in four dogs (19 per cent) to avoid over or under correction of the tibial plateau angle (TPA).

This observation led to the conclusion that individual conformations could be better suited to specific tibial osteotomy techniques that have been developed and no specific tibial osteotomy provides the ideal solution for all dogs with cruciate disease. Further findings were that intraoperatively, fracture through the caudal tibial cortex occurred in nine cases (41 per cent) and through the distal tibial crest cortex in four cases (18 per cent). Major complications occurred in five cases (23 per cent) with four (18 per cent) requiring further surgery.



Outcome with this procedure appears to be acceptable with client questionnaire results demonstrating significant improvements in all parameters and no significant difference in the dogs after surgery compared to the preinjury status.

The significance of this research is that tibial plateau angles (TPA) should be measurement when planning a TTO to avoid over or under correction of the TPA. Despite frequent minor complications, it appears that the TTO is an effective procedure for management of cranial cruciate ligament rupture in the dog.

In addition to this research, Dr House in conjunction with the Royal Veterinary College (UK) is co-supervising a PhD student that is investigating hepatic regeneration associated with ligation of portosystemic shunts. This PhD commenced 1 October and research will continue for the next three years.

Dermatology update

The management of atopic dermatitis continues to evolve with increased understanding of the role the skin barrier dysfunction in atopic disease.

Successful management requires a combination of barrier improvement and down regulation of the allergy (allergen specific immunotherapy). Understanding the role of the epidermis in upregulating non-allergy mechanisms of itch and inflammation in atopic dogs has led to an ever-increasing reliance on topical therapies and new technologies for the delivery of these treatments to hairy patients. The Dermatology Department now imports a range of sphingosine products that target skin barrier repair for atopic dogs.

The CO2 laser gives excellent results in the management of benign cutaneous neoplasms in areas that are difficult to surgically excise like face, pinnae, feet and distal limbs. It can also be useful in early SCC and Bowenoid carcinoma and can be used for ablation of sebaceous adenomas, follicular cysts and infectious granulomas.

The dermatology department is looking for a resident to join the dermatology team in January 2010. If interested please submit a CV online on the 'Careers at MVSC' section of the MVSC website: www.melbvet.com.au.

Auctioning off prizes.

Heidi's support night a success

The MVSC hosted a fantastic night in Glen Waverley on Saturday 5 September, with at least 50 people turning up to offer their emotional and financial support to Heidi Hills. Almost $7000 was raised on the night through cash and prizes.

Heidi, a 31-year-old veterinary nurse at the MVSC, was recently diagnosed with a Grade 2 malignant brain tumour, resulting in invasive surgery and a long road to recovery. Her illness has meant she has been and will remain on permanent sick leave, resulting in tremendous hardship as a result of her illness. The hardship certainly relates to her emotional state, but extends to her financial situation.

An email went out to businesses asking for support through donations of products or services to be auctioned on the night or cash donations to go directly to Heidi. The night was a huge success with almost $7000 raised, including:

- $1735 cash raised from Silent Auction items
- $1137 cash raised from raffles
- $2850 raised as direct cash donations
- $1150 raised from gift cards (cash, vouchers and redeemable items)

This is a fantastic result, and the MVSC would like to particularly thank:

- Austvet Pty Ltd
- Cenvet
- Companion Animal Business
- Hills Pet Food
- Kwik Kopy Burwood
- Lyppards Australia Limited
- Medfin Finance
- Mölnlycke Health Care
- Noble Park Animal Hospital
- Pfizer Animal Health – Companion Animals
- Prahran Vet Clinic, Peter Juliff, Kay Wallace and Nicole Hoskin
- Royal Canin
- Rubi Hair (Prahran)
- Stephen Knight, Change Leadership and MVSC
- Therapon
- Two on Rathdowne (Carlton North)
- And staff, family and friends.

We would like to thank everyone that contributed to this special night.

Heidi and her family, with MVSC GM Chris Potaris (second from left).

Dr Labuc elected as ACVS President

Dr Robert Labuc (Specialist Canine Medicine) was inducted as President of the Australian College of Veterinary Scientists (ACVS) at a recent awards ceremony.

Dr Labuc has worked for the College for many years, being on the Board of Examiners and most recently the College Council.

Dr Labuc is hoping the College can lead the way in achieving reciprocal recognition of Australian trained and qualified specialists with similar organisations in Europe and North America, and has assisted in setting up a taskforce to achieve this. He is also keen to improve member benefits to all Members of the College with the most recent innovation being member access to the CABI online abstracting service and online electronic texts.

The College specialist qualification (Fellowship) is viewed as the most important and accessible pathway to veterinary specialisation in Australasia, and accounts for the majority of Veterinary Specialists in small animal medicine fields.

The ACVS is an important aspect of the daily activities of the MVSC Medicine Department. Our senior residents and residents are enrolled with the College for their training program and will ultimately sit the specialist examinations.

President Dr Robert Labuc receives the chain of office from outgoing President Stuart Burrough.

Research published in international journal

Dr Maureen Cooper, DVM, MACVSc (Small Animal Medicine), an Oncology Senior Resident at the MVSC, recently published her research in the journal of *Veterinary and Comparative Oncology.*

Veterinary and Comparative Oncology is the official journal of the Veterinary Cancer Society, European Society of Veterinary Oncology, and Japanese Veterinary Cancer Society.

Dr Cooper's paper, Combination CCNU and vinblastine chemotherapy for canine mast cell tumours: 57 cases, was based on a novel chemotherapy protocol that is used at the MVSC to treat mast cell tumours.

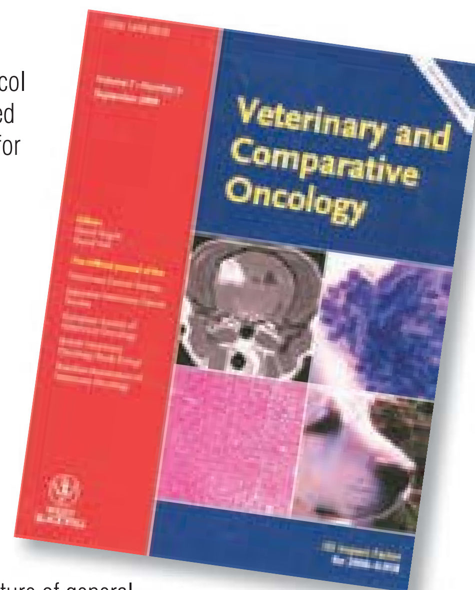
Mast cell tumours are one of the most common and frustrating cancers presented to veterinarians. These tumours range from being relatively benign to aggressive malignancies; thus, offering the most appropriate treatment plan is challenging.

The study evaluated the efficacy and toxicity of a CCNU and vinblastine chemotherapy protocol for canine mast cell tumours. Fifty-seven tumours in 56 dogs were evaluated; 37 had macroscopic disease and 20 had microscopic disease.

Response rates have been favourable and the drugs were generally well tolerated. A 57% response rate was seen in dogs with macroscopic disease for a median duration of 52 weeks. Dogs with macroscopic disease had a median progression free survival time (PFST) of 30 weeks and a median overall survival time (OST) of 35 weeks.

Dogs with microscopic disease had a median PFST of 35 weeks and a median OST of 48 weeks. Toxicity was recorded in 54% of the dogs treated, with the majority of events being mild.

The chemotherapy protocol appeared to be well tolerated and should be considered for canine mast cell tumours.



Dr Maureen Cooper, originally from Canada, obtained her veterinary training at the Western College of Veterinary Medicine in Saskatoon, Saskatchewan, Canada. After completing a combined Medicine/ Surgery internship at Purdue University (Indiana, USA), Dr Cooper spent time in a mixture of general and referral practices in New York. Dr Cooper has completed her residency in Veterinary Oncology under the direct supervision of Dr Peter Bennett, with support from Dr Darren Merrett, Dr Rob Labuc, and Dr Peter Laverty.

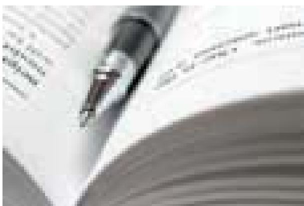
Cooper MA, Tsai XR and Bennett PF (2009). Combination CCNU and vinblastine chemotherapy for canine mast cell tumours: 57 cases. *Veterinary and Comparative Oncology* 7: 197–206.

Oncology update

The Oncology Department is continuing to see more new and interesting cases at its Glen Waverley and Essendon clinics. The team is also very pleased to announce the return of Dr Maureen Cooper from maternity leave.

Pictured is Kammie, a cat with nasal lymphoma. Traditionally radiotherapy has been the mainstay of treatment for this cancer, as it is one of the few anatomical sites where lymphoma can be confined to a single site (i.e. stage one lymphoma). A recent study (Haney et al. JVIM 2009) found that treatment with chemotherapy resulted in similar survival times compared to radiation alone, or a combination of the two. This supports the recommendation that chemotherapy should be considered for treatment of nasal lymphoma either alone or in combination with radiation. When radiation is used alone, full staging is important to rule out systemic disease, as radiation is a local treatment only. A study in 2007 (Sfiligoi et al. Vet Rad and Ultra 2007) showed that 18% of cats with this cancer experienced distant relapse, which further supports the recommendation of using chemotherapy for this cancer. For more information on nasal lymphoma, or any oncology queries, please do not hesitate to contact the Oncology Department via email: oncology@melbvet.com.au or ph: (03) 9887 8844.

Medicine update **Next generation of specialists**



The Medicine and Oncology Departments have a large role to play in the training and preparation of future specialists in these fields.

For this reason we have both senior residents and residents employed to not only assist with current caseload, but with a view to prepare clinicians to take on the ever growing demand for specialist input on the illnesses affecting our clients' dogs and cats.

As part of their training, and to further veterinary knowledge, our senior residents and residents are encouraged to pursue academic interests through publication. Here are the most recently accepted papers due to be published soon:

- Pneumocystis pneumonia in two Cavalier King Charles Spaniel littermates. Meffert, FJ (2009) Aust Vet Practit.
- Lymphocutaneous infection with scedosporium apiospermum in a dog on immuno-suppressant therapy. Brown, JS, Bennett PF, Labuc RL and Merrett D (2009) Aust Vet Practit.

Remaining up-to-date with developments in the field of Medicine can be a daunting task. Apart from perusing journals and then discussing interesting papers at a weekly journal club, staff attend conferences when possible to hear leaders in their fields discuss their latest findings. While this means that clinical duties can become hectic, it is critical to our work that we are aware of the best and most effective ways of diagnosis and treatment. Recent conferences attended include:

- The 19th congress of the European College of Veterinary Internal Medicine (2009) in Porto, Portugal – attended by Dr Peter Bennett.
- The 2009 ACVIM Forum & Canadian Veterinary Medical Association Convention in Montreal, Canada – attended by Drs Kate Heading and Robert Labuc.
- Australian Small Animal Veterinary Association (ASAVA) 2009 conference in Christchurch, New Zealand – attended by Dr Lydia Hambrook.
- ACVS College Science Week 2009 in Brisbane – the entire Medicine Department (minus Dr Lydia Hambrook who held the fort) attended the Friday and Saturday components.

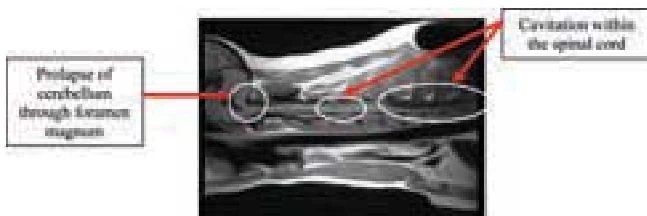
Dr Bennett will also be attending the Veterinary Cancer Society meeting in Austin, Texas and the American College of Veterinary Radiology meeting in Memphis, Tennessee in 2009.

Caudal occipital malformation syndrome

[Chiari-like malformation and syringomyelia]

Pathological findings

Caudal occipital malformation syndrome (COMS) is characterised by displacement of the cerebellum and brainstem into the foramen magnum obstructing cerebrospinal fluid (CSF) flow. A common element of the pathological findings is syringomyelia, i.e. cavitatory lesions within the spinal cord, usually cervical and occasionally more caudal. These spinal cord lesions are thought to contain extracellular fluid (not CSF) and might arise due to pressure variation between the cord and subarachnoid space caused by altered CSF flow.



Breeds affected

The Cavalier King Charles Spaniel (CKCS) is the most commonly affected breed. In one report of 64 dogs (15 clinically affected, 49 asymptomatic), 59 had structural abnormalities at the foramen magnum with 27 of these showing syringomyelia. In another smaller study of 16 clinically normal CKCS, all had cerebellar herniation with seven showing syringomyelia. Other brachycephalic or miniaturised breeds may also be at risk and the condition has been reported in King Charles Spaniels, Yorkshire Terriers, Maltese, Chihuahuas, Brussels Griffons, Bichon Frise, Pugs, Shih Tzus, Pomeranians, Staffordshire Bull Terriers, French Bulldogs, Pekingese, and Miniature and Toy Poodles.

Age at presentation

It is estimated that approximately 45% of affected dogs will become symptomatic prior to one year of age, approximately another 40% between one to four years of age, and the remainder after four years of age.

Clinical signs

There is enormous variation in the nature of the presentation but facial and cervical pain is the most consistent; although the pain may be intermittent and difficult to localise. The pain may manifest as yelping for innocuous or inapparent reasons. Other signs include:

- Scratching, often at one side of the neck, without making contact with the skin.
- Thoracic limb weakness and atrophy.
- Pelvic limb ataxia.
- Seizures, facial nerve deficits and deafness are also reported in dogs with the malformation but a direct link has not been proven.

The disease runs a variable course, in some dogs signs remain at a low level and static for some time while in others rapid progression over weeks-months can be seen.

Diagnosis

Magnetic Resonance Imaging (MRI) is essential for the diagnosis of COMS where the cerebellar herniation and other foramen magnum defects can be seen in addition to the syringomyelia in some cases. CT scanning does not provide sufficient soft tissue detail in the diagnosis. The degree of cerebellar herniation is not correlated with severity of signs. However, those cases with a cavitatory cord lesion show correlation with the degree of pain. In the UK, the British Veterinary Association and Kennel Club are developing a screening scheme principally for CKCS (but other breeds can be included) with a central repository of results and interpretation of appropriate MRI images. Other countries can participate in this scheme by contributing appropriate images for assessment and reporting.

Treatment

Surgical decompression via removal of part of the occipital bone and dorsal arch of the atlas is described. In one report, signs were improved in 12 of 15 dogs postoperatively; however, seven of these dogs subsequently deteriorated over the following 0.2–2.3 years presumably due to postoperative scar tissue formation causing re-obstruction. More recently the use of a synthetic mesh at the site of occipital bone removal has been described and seems to decrease recurrence of signs presumably by a decreased incidence of this postoperative scarring.

Medical therapy is often required since some clients decline surgical intervention. In addition, while the surgery might address the obstruction to CSF flow caused by the malformation, syringomyelia may persist and cause ongoing signs despite surgery. There are a number of options for medical therapy and no data to indicate the 'best' agent(s). One can trial:

- Drugs to reduce CSF pressure, e.g. frusemide, cimetidine, omeprazole.
- Analgesics, e.g. opiates or NSAIDs or with suspected neuropathic pain one can trial gabapentin, amitryptylline.
- Corticosteroids.
- Acupuncture is anecdotally reported to be of benefit in some patients.

Prognosis

The prognosis is guarded with reports of 'adequate' control of signs (pain and ataxia) for several years in approximately 50% of cases.

Heritability

The mode of inheritance has not been defined but one report suggests that 70–80% of syringomyelia in the CKCS is genetic in origin, the remainder due to environmental factors. Heritability of occipital malformations are also very high but seem to be controlled by different genes than those controlling syringomyelia. Since the defect is so common in CKCS, removing all affected dogs from breeding does not seem feasible. Current CKCS breeding recommendations are that all dogs that develop cavitatory cord lesions in the first 2.5 years of life are not to be used for breeding, i.e. removal of severely affected individuals.

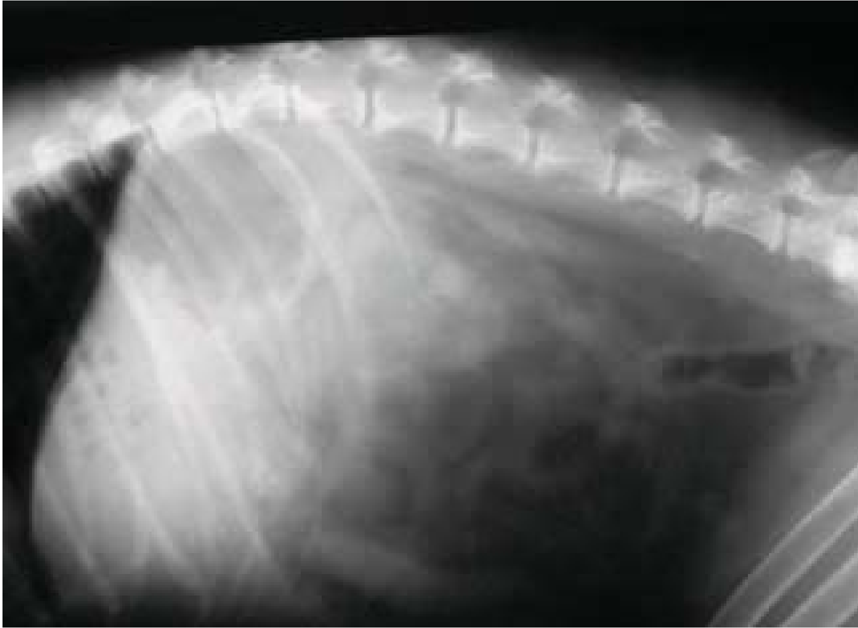
We do not know the incidence of COMS in CKCS (or other breeds) in Australia; however, we have encountered the condition in CKCS and numerous other breeds in Melbourne. The clinical signs can be non-specific, but this diagnosis has to be considered in a wide range of differentials.

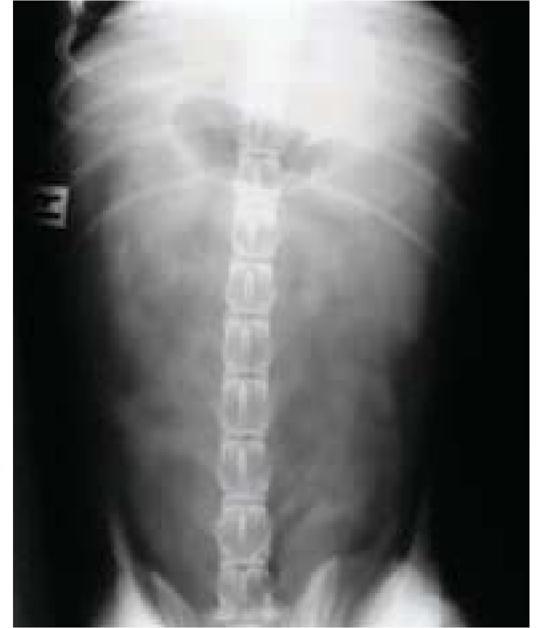
Useful resources

More information is available on the CavalierHealth.com website at: http://cavalierhealth.org/syringomyelia.htm

A succinct but thorough review is: Rusbridge C & Dewey CW (2008). Treatment of canine chiari-like malformation and syringomyelia. Kirk's Current Veterinary Therapy XIV,1102–1107.

Liver abscessation leading to septic peritonitis -





Figures 2a and 2b above: Lateral and ventrodorsal abdominal radiographs. A subtle loss of serosal detail is present, consistent with a small volume of peritoneal fluid. Coalescing gas bubbles are present within the region of the left lateral liver lobe. The presence of gas within a parenchymous organ is consistent with an infection secondary to gas forming bacteria.

A 12-year-old female spayed English Springer Spaniel was presented to the referring veterinarian for lethargy and intermittent vomiting of 48 hours duration.

Physical examination identified abdominal pain. In response to this physical examination finding and the presenting history, a 4-quadrant abdominocentesis was performed that yielded a drop of peritoneal fluid within the hub of the needle on each attempt.

Cytological examination of the fluid revealed large numbers of degenerate neutrophils with intracellular organisms identified (Figure 1). Abdominal radiographs were performed and revealed a subtle loss of serosal detail and coalescing gas bubbles within the region of the left lateral liver lobe (Figures 2a & 2b). A lateral thoracic radiograph was performed to rule out gross thoracic anomalies and demonstrated a small volume of pleural effusion (Figure 3).

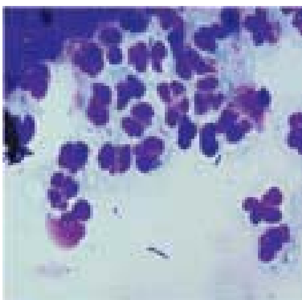


Figure 1: Cytology of peritoneal fluid. Large numbers of degenerate neutrophils are present with the occasional intacellular organisms (rods). Identifying intracellular bacteria confirms the diagnosis of septic peritonitis.

Having reached the diagnosis of septic peritonitis the referring clinician instituted appropriate intravenous fluid therapy and elected to refer this dog to the surgery service at Melbourne Veterinary Specialist Centre for exploration of the abdomen and a possible liver lobectomy. Abdominal exploration was performed and the left lateral liver lobe was found to be grossly distended with a necrotic lesion within the body of the lobe (Figure 4). Additional findings were a mass associated with the left adrenal gland and loss of normal diaphragm tension, consistent with a pleural effusion or pneumothorax. A liver lobectomy was performed using a TA stapling device. The abdomen was lavaged with warm saline and due to an absence of gross peritoneal contamination the abdominal cavity was closed without provision of drainage. Samples of peritoneal fluid, pleural fluid (collected by transdiphragmatic aspiration) and fresh liver were submitted for culture and sensitivity. Samples of liver were preserved in formaldehyde and submitted for histopathology.

Pathology from the submitted tissue and fluid revealed the pleural fluid to be a modified transudate, no growth on 48 hours culture for either the pleural fluid or peritoneal fluid. The Clostridial species cultured from fresh liver and the histopathology were consistent with necrotising hepatitis. The interpretation of this case was a liver abscess secondary to Clostridial species. This organism was predicted as Clostridial spores reside in normal liver tissue. The pleural fluid was interpreted as an extension of the peritoneal inflammation. The adrenal mass was an incidental finding.

Management of the patient with a septic peritonitis presents one of the greatest challenges in veterinary emergency medicine. This case highlights how rapid diagnosis and institution of both medical and surgical management resulted in a successful outcome. Septic peritonitis has a large number of potential aetiologies,

– an interesting case

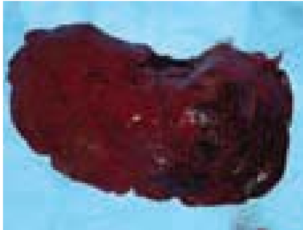


Figure 4: A post resection photograph of the left lateral liver lobes. The left lateral liver lobe was found to be grossly distended with a necrotic lesion within the body of the lobe. The necrotic centre had a consistency equivalent to pate.

all of which require urgent surgical intervention to optimise the chance of a successful outcome. Knowledge of the underlying aetiology causing septic peritonitis allows the surgeon to prepare for and plan an appropriate surgical procedure. However, in many instances it may be inappropriate to pursue a complete diagnosis prior to surgical intervention. Surgical intervention is often as much for diagnostic purposes as for a definitive procedure. Consequently, the surgeon has to be prepared for a spectrum of possibilities at the time of surgery. Acute abdominal pain does not however justify an exploratory celiotomy prior to careful evaluation and stabilisation of the patient. It is essential that differentiation between disease processes that can be managed medically (e.g. acute pancreatitis) and those that are managed surgically (e.g. septic peritonitis) be made prior to exploratory celiotomy.

Approximately 60% of animals with septic peritonitis have contamination from the gastrointestinal tract. Other sources of contamination include the pancreas, genitourinary tract (especially the uterus and prostate) and the hepatobiliary system. On occasion peritonitis can develop as an extension of a lumbar or abdominal wall abscess with the abscess draining into the abdominal cavity. Occasionally an intra-abdominal source of infection is not found.

The goals of surgical treatment of bacterial peritonitis are to identify and eliminate the source of contamination or infection, prevent recurrent intra-abdominal contamination, reduce intra-abdominal bacterial burden and remove any foreign material and necrotic debris. Additional goals of surgery can be to provide drainage of the abdominal cavity and/or enteral access.

Reduction of the intra-abdominal bacterial burden and removal of foreign material is largely achieved by copious peritoneal lavage. Abdominal lavage should be performed with warm physiological saline solution and should be continued until the returning fluid is clear. The addition of antibiotics or antiseptics to lavage solution is not necessary. If the omentum has become grossly diseased, omentectomy may be indicated to prevent ongoing abdominal contamination.

Provision of peritoneal drainage is still controversial. Both open peritoneal drainage and the use of intra-abdominal drains have been reported in the veterinary literature. The selection of cases for primary celiotomy closure versus open peritoneal drainage or the

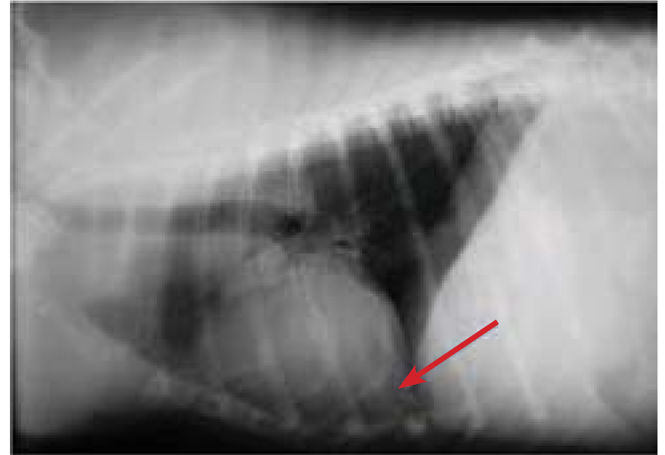


Figure 3: Lateral thoracic radiograph. A fissure line is present between the right middle and right caudal lung lobes (red arrow), indicative of a small volume of pleural fluid.

implantation of peritoneal drains remains the individual surgeon's preference. In this case the abdomen was closed as the degree of intra-abdominal contamination was considered mild. Typically peritonitis develops secondary to contamination from the gastrointestinal tract. Frequently these cases have gross contamination of the peritoneal cavity and require provision of peritoneal drainage.

Open peritoneal drainage facilitates continued drainage of necrotic debris from the peritoneal cavity and gives the surgeon the opportunity to re-explore the abdomen at the time of definitive closure. It also creates an unfavourable environment within the peritoneal cavity for the proliferation of anaerobic bacteria. The disadvantage of open peritoneal drainage is the additional resources required to manage the abdominal bandage. Inability to adequately manage the open peritoneal cavity can lead to either ascending nosocomial infections or abdominal organ herniation.

The use of peritoneal drains similarly facilitates continued drainage of necrotic debris from the peritoneal cavity and has been popularised as a method of overcoming the additional nursing requirement of open peritoneal drainage. If intra-abdominal drains are used then appropriate drain choice and placement is required for affective drainage to be achieved.

Continuous closed suction drains such as the 'Jackson Pratt', are ideal (Figure 5). Drains need to be positioned in the abdomen so as to avoid obstruction by the omentum. Drains are placed in the cranial abdomen between the liver and the diaphragm and in the caudal abdomen. Bandaging of the drains post-operatively to prevent premature removal by the patient is required and handling of the drains in an aseptic manner is needed to reduce the risk of an ascending nosocomial infection.

Figure 5: A Jackson Pratt drain. This drain is ideal for use in the abdominal cavity as it's design reduces the incidence of obstruction by the omentum.

Prostatic carcinoma in dogs

Prostatic carcinoma is an uncommon disease in dogs but is being recognised with increasing frequency.

The disease is different in humans, with much information contradictory or confusing. There can be problems or concerns about confirming a diagnosis, with little information available about treatment options.

Aetiology of prostatic carcinoma in dogs

There is increasing incidence of neoplasia in the prostate of dogs as they get older. However, there is conflicting information in various studies on the level degree of increase. The earliest stage of prostatic carcinoma is called high grade prostatic intra-epithelial neoplasia (PIN). There have been studies that have reported incidences as high as 55% of elderly entire male dogs to others where it has been seen in less than 5% of all male dogs. In humans it is very common, occurring in >80% of men over the age of 80. The incidence of invasive prostatic cancer has been reported as between 0.3% and 0.6% of all male dogs in post mortem studies.

Hormonal status is important in men and the early stages of the disease are hormonally responsive. In dogs there is no hormonal influence in some studies, while others suggest that testosterone might be protective leading to a predilection for castrated dogs in some studies. The difference between the species might lie in the nature of the disease. In men the disease arises from the glandular portions of the prostate, where recent work in dogs has shown the tumour arises from the ductular portion of the gland or the tumour has ductular rather than glandular differentiation. In this way the disease in dogs resembles the advanced, invasive, non-hormonally dependent disease seen in men. It resembles transitional cell carcinoma and the same pattern in seen in entire and castrated males.

Cyclo-oxygenase 2 (COX-2) is not seen in the normal prostate but it is seen in prostatic carcinoma. The role has yet to be fully investigated, but in the prostate it does seem to have a role as expression is not related to inflammation. COX-2 has been shown to have roles in angiogenesis, local immune response, decreased apoptosis as well as inflammation.

'The clinical signs are variable. The most common are difficulty in defaecating, dysuria and lumbar spinal pain.'

Clinical signs of prostatic carcinoma

The clinical signs are variable. The most common are difficulty in defaecating, dysuria and lumbar spinal pain. Blood in the urine can be seen, but it does not appear to be as common as is seen with benign prostatic hypertrophy (BPH). Urinary tract infection can be seen in some cases as a secondary event. This can lead to signs of lower urinary tract infection (pollakiuria, dysuria, pain, etc.).

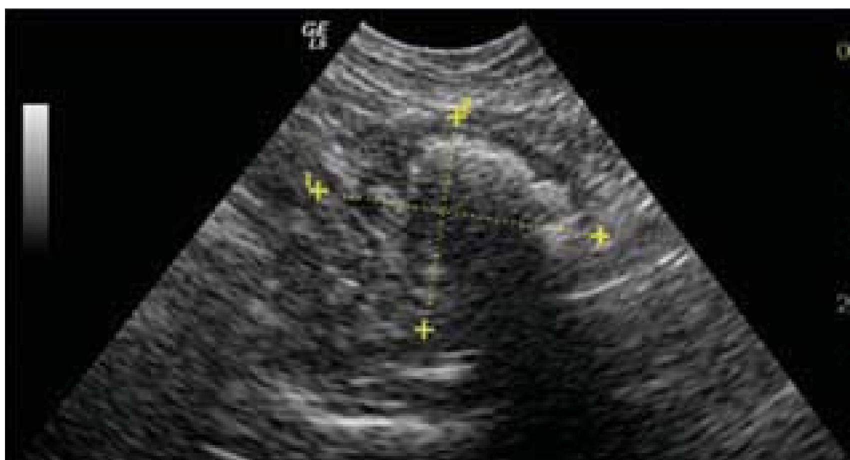
Diagnosis of prostatic carcinoma

Suspicion of this diagnosis is high when a castrated dog is found to have an enlarged, often asymmetrical, prostate on rectal examination. In entire male dogs the prostate is often fixed and infiltration into the surrounding tissue is clearly evident in some cases, whereas in benign disease the gland is usually mobile. Pain is uncommon. There is no canine equivalent to the prostate specific antigen (PSA) blood test that has been used in man.

Radiographs of the abdomen can be helpful. In some all that is seen is an enlarged prostate, which might not be evident on rectal examination in large dogs. Calcification of the prostate is more commonly seen with carcinoma than other diseases, but is has been seen in cases of chronic disease of any form and as a non-specific finding in some dogs. In a few cases there can be changes evident in the lumbar vertebrae, usually a proliferative change on the ventral surface. This is associated with metastatic disease to the vertebrae and is often painful.

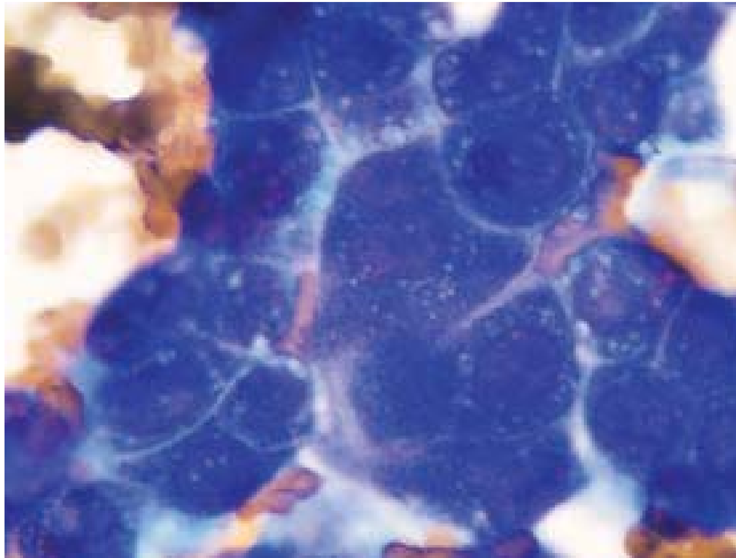
Ultrasonographic examination of the prostate is helpful. There again is overlap between prostatic carcinoma and other conditions of the prostate. The pattern seen most often is of complex echo texture with hyper and hypo-echoic areas. Uniform echo texture and cavitated areas are seen more often with BPH and prostatitis. There have been some reports that suggest BPH will often lead to an increase in the diameter of the prostatic urethra and a decrease is seen with neoplasia, but this is not reliable.

The definitive diagnosis is via biopsy. Cytology of a



Typical appearance of prostatic carcinoma with shadowing evident from an area of calcification within the tumour.

'The literature reports that there is no effective treatment. We have treated three dogs in recent times with chemotherapy. One dog survived three years, one survived one year and the final dog is still alive and well 10 months after diagnosis.'



Prostatic carcinoma cells, an impression smear from a traumatic catheterisation sample.

free catch urine sample can be supportive, but there is overlap between the dysplastic changes seen in response to chronic inflammation and neoplasia. Histological samples are recommended. Even here the pathologist might not be able to clearly differentiate between prostatic carcinoma and transitional cell carcinoma. Biopsies can be obtained in a variety of means. Traumatic catheterisation samples are relatively easy to perform under ultrasound or digital guidance.

With practice, good samples can be achieved. Needle biopsies can be obtained trans-abdominally with ultrasound guidance or pararectally with digital or ultrasound guidance. The final option is a surgical biopsy, but this is the most invasive. Needle and surgical biopsies carry a risk of seeding tumour into the normal tissues.

Once there has been a diagnosis or strong suspicion the patient should undergo screening for distant disease. Abdominal ultrasonography is my preferred means of screening the abdomen as suspect lesions can be sampled. We would also perform three-view thoracic radiographs, as well as a full blood profile with urinalysis and usually a urine culture.

Treatment of prostatic carcinoma

There are few reports of successful treatment of prostatic carcinoma. In a study from Japan, dogs with early prostatic carcinoma were treated with radical prostatectomy. This led to permanent urinary and sometime faecal incontinence and the patients were required to wear nappies after the surgery. The survivals were quite good, but I do not believe that many clients would tolerate the degree of care required in the long term. The prostate in the dog surrounds the urethra and resection requires removal of part of the urethra. This accounts for a lot of the problems. There is also a plexus of nerves in the capsule that go to the bladder and these are also lost.

Other surgical approaches have been used with some success. Transurethral resection, as is done is man, has been tried but requires specialised equipment and there is a very long learning program. Subtotal surgical removal has been used with some success in men, and has been used in a few dogs.

Radiation therapy has been used in a few dogs. This is one of the treatments of choice in man, but high dose, brachytherapy is often used. Brachytherapy is not available routinely in dogs. External beam radiation has been used, but irradiation of this area is associated with a high rate of toxicities to the colon and rectum as well as the bladder and urethra.

Chemotherapy has been used in few dogs; however, most dogs have metastatic disease at the time of diagnosis and this is the only treatment that treats this aspect of the disease. The literature reports that there is no effective treatment. We have treated three dogs in recent times with chemotherapy. One dog survived three years, one survived one year and the final dog is still alive and well 10 months after diagnosis. In all these cases there was metastatic disease present at the time of diagnosis. These survivals are longer than have been reported for surgical or radiation therapy (median of four months) leading us to postulate that this is an effective treatment option, possibly the treatment of choice.

Palliation options are limited. Non-steroidal anti-inflammatory drugs have been used; primarily piroxicam. No responses have been seen, but in some cases it might slow the progression of disease and relieve some of the clinical signs. In dogs with lumbar vertebral metastasis strong pain relief (narcotics or tramadol) and bisphosphonates have been used with limited success.

Urethral stenting

In a select number of patients a further palliative option is urethral stenting. Placing a stent in the urethra can reduce dysuria and improve their quality of life in the short to medium term. Patients need to be selected carefully, it does not always work and in some cases they can become partially incontinent, depending on the extent of the urethra that is involved.

Did you know the MVSC has a new website? Go to www.melbvet.com.au

Surgery update

The Surgery Department has benefited greatly from the addition of Dr Arthur House to the team. We trust this has been evidenced by a more flexible appointment schedule, a more prompt case turnaround and rapid communication to referring veterinarians via email, letters and phone calls.

We continue to pride ourselves on achieving excellence in veterinary surgery with sound postoperative follow-up of cases. Recent initiatives in the department include further development of minimally invasive surgery, alternative options to TPLO for management of cranial cruciate disease, particularly those with an excessive tibial plateau slope, and improved surgical management of intra-hepatic shunts.

Next year we will be also holding monthly case round presentations for referring veterinarians with interactive case discussions in which we will review and discuss surgical cases including diagnostic imaging. There will be more information to come soon regarding these presentations.

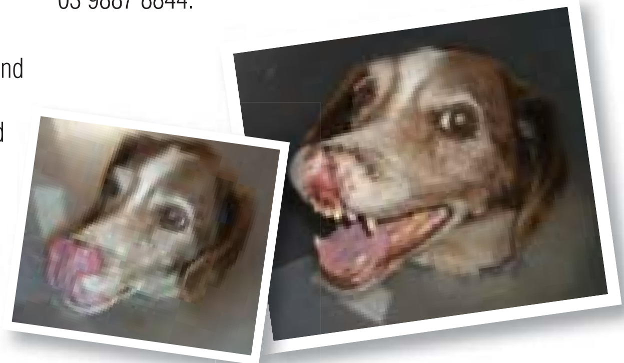
Our recent surgery seminar was well received and we have several more seminars scheduled for the next 12 months. These will include combined seminars with the Oncology and Dermatology Departments, as well as a specific seminar for new graduates reviewing how to avoid complications from routine surgeries such as ovariohysterectomy and castration.

We are also pleased to announce that Gemma Gough is now a full time nurse with the Surgery Department. Gemma is well on the way to completing her Advanced Veterinary Nursing Diploma in surgical nursing and we are very pleased to have her on the team full time.

Oncology quiz corner

1. A tumour that stains positive for CD3 indicates which type of lymphoma?
2. True or false? Malignant ear canal tumours are less aggressive in dogs than they are in cats?
3. What is the number one canine skin cancer?
4. True or false? Approximately 50% of primary skin and subcutaneous tumours in the cat are malignant?
5. Which wavelength range or type of UV is associated with skin cancers?
6. True or false? In canine and feline melanomas ionising sunlight is a causative factor?
7. Name the two most common canine ear tumours?
8. What is the single most important prognostic factor for malignant melanoma in the dog?
9. Which statement is correct?
   a. Melanomas tend to be benign in the Doberman pinscher.
   b. Melanomas located on haired skin behave more aggressively.
   c. A mitotic index <5 is associated with a benign melanoma.
   d. Amelanotic melanomas occur more commonly on cutaneous sites.
10. List at least two tumours that metastasise to multiple digits in the cat?

If you have any questions or wish to discuss these questions, please feel free to call Maureen (Oncology Senior Resident) or Laura (Oncology Resident) on 03 9887 8844.



Rudy after his nasal planectomy.

Answers:
1. T cell lymphoma 2. True 3. Mast cell tumour 4. True 5. UVB – 290-320nm 6. False 7. Ceruminous gland carcinoma; Squamous cell carcinoma 8. Mitotic index or rate 9. a. Correct. b. A haired skin location tends to be a more favourable prognostic factor. c. A mitotic index < 3 is associated with a benign melanoma. d. Amelanotic melanomas are more common in the oral cavity. 10. Pulmonary SCC, cutaneous SCC, bronchiolar adenocarcinoma, apocrine sweat gland carcinoma, bronchogenic adenocarcinoma.

EMPLOYEE PROFILE

Laura Brockley

Laura Brockley was accepted into the Australian Royal College of Veterinary Scientists, Small Animal Medicine Chapter this year.

We are also pleased to announce that she was awarded the chapter medal for outstanding performance in the Small Animal Medicine membership examinations. Laura has accepted the Oncology residency at the MVSC and is looking forward to starting her new role. We congratulate Laura on her fantastic result!

Behavioural Medicine at MVSC

Damage done by a dog that suffers from an anxiety disorder—noise phobia. With behaviour modification, environmental management and often medication, dogs can be taught to cope with thunderstorms.

Aggression is one of the most common reasons for referral to a veterinary behaviourist. However, many other behaviour problems are also presented, including barking, digging, scratching, spraying and grooming.

Although these may all be normal behaviours, these can also indicate a behaviour problem.

Behavioural problems referred to a veterinary behaviourist may be ones exhibited often. For example, excessive grooming, which can result in a skin problem, could be part of an obsessive compulsive disorder complex. Problems referred could also be ones that are exhibited in an inappropriate place; for example, housesoiling may be due to an underlying anxiety disorder. Problem behaviours may also be ones exhibited at an inappropriate time; for example, barking when left alone may indicate the pet has separation anxiety.

Living with an animal with a behaviour problem is hard for the owners and can be life threatening for the animal, especially if aggression is the problem. Veterinary behavioural medicine can help.

Appointments

Dr Seksel and resident Dr Jacqui Ley travel from Sydney once a month to offer behavioural services at the Melbourne Veterinary Specialist Centre (MVSC). Both doctors bring extensive knowledge and experience to our Centre.

Your client can make an appointment by contacting our office via email or by phone. We have limited appointments available on weekends for those people who cannot make it to an appointment during the week. Contact the MVSC on (03) 9887 8844 or email: behaviour@melbvet.com.au

Notification of upcoming events

Have you been receiving information about upcoming MVSC seminars? If not, email your contact details (practice name, address, phone number, fax number, and email address) to office@melbvet.com.au to be added to our distribution list.

Electronic files now available

The MVSC has created generic email accounts for each medical department to improve direct communication with referring veterinarians.

Veterinarians can now email patient histories and reports directly to the following email addresses:

- Surgery Department: surgery@melbvet.com.au
- Oncology Department: oncology@melbvet.com.au
- Medicine Department: medicine@melbvet.com.au
- Behavioural Medicine Department: behaviouralmedicine@melbvet.com.au
- Dermatology Department: dermatology@melbvet.com.au

The use of these email accounts will further ensure that all correspondence and queries are dealt with in a timely manner.

Extended surgical services at Essendon Fields

The Surgery Department at the Melbourne Veterinary Specialist Centre (MVSC) is pleased to announce it is extending its consulting hours for surgical appointments, following the arrival of its third surgeon Dr Arthur House.

Changes will include:

- Evening consultations will be available on Wednesdays until 7.00 p.m. for clients that cannot take time off from work.
- The Surgery team will be available to service the MVSC Essendon Fields facility five days a week. Dr Simon Kudnig will be the principal surgeon at the site, bringing a wealth of experience in surgical oncology, soft tissue surgery and orthopaedics. He will be working closely with the Oncology team at Essendon fields to provide a complete oncology service.
- Two surgeons will always be available at the MVSC Glen Waverley site. This will provide a flexible appointment schedule that can accommodate your pet's needs promptly.
- After-hours 24/7 surgery, for surgical emergencies, will be now shared between the three surgeons.

The multi-surgeon facility at the MVSC will allow our surgeons to perform both surgical discharges and revisits personally.

INTERNAL MEDICINE

Dr Rob Labuc
BVSc, MVS, FACVSc (Specialist in Canine Medicine)

Dr Darren Merrett
BVSc, MVS, Cert SAC FACVSc (Specialist in Canine Medicine)

Dr Peter Bennett
BVSc, FACVSc (Canine Medicine), Dip ACVIM (Small Animal Medicine, Oncology)

Dr Jennifer Brown
BVSc(Hons), MACVs (Small Animal Medicine)

Dr Felicity Meffert
BVSc(Hons), MACVSc (Small Animal Medicine)

Dr Kate Heading
BVSc(Hons), MACVSc (Small Animal Medicine)

Dr Lydia Hambrook
BVSc (Hons), MACVSc (Small Animal Medicine)

DERMATOLOGY

Dr Greg Burton
BVSc (Hons), MACVSc (Small Animal Surgery), FACVSc (Dermatology)

Dr Rebecca Bassett
BScAgr (Hons), BVSc (Hons), MACVSc (Canine Medicine), FACVSc (Dermatology)

Dr David Robson
BVSc (Hons), MACVSc (Small Animal Surgery), FACVSc (Dermatology)

SURGERY

Dr Arthur House
BSc, BVMS(Hons), PhD, Cert SAS, Dip ECVS, MRCVS (Specialist in Small Animal Surgery)

Dr Simon Kudnig
BVSc, MVS, MS, FACVSc, Diplomate ACVS (Small Animal Surgery)

Dr Pete Laverty
BVSc, MACVSc, Diplomate ACVS (Small Animal Surgery)

ONCOLOGY

Dr Peter Bennett
BVSc, FACVSc (Canine Medicine), Dip ACVIM (Small Animal Medicine, Oncology)

Dr Maureen Cooper
DVM, MACVSc (Small Animal Medicine)

Dr Laura Brockley
BVSc(Hons), MACVSc

BEHAVIOURAL MEDICINE

Dr Kersti Seksel
BVSc (Hons), MRCVS, MA (Hons), FACVSc (Animal Behaviour), Diplomate ACVB, CMAVA, Dip ECVBM-CA

Dr Jacqui Ley
BVSc (Hons), MACVS (Animal Behaviour), CMAVA

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