



vetspecs

Veterinary Specialists

ISSUE 6 • December 2012

# THE SPECIALIST CONNECTION

## Vetspecs and Continuing Professional Development

The Year in a Nutshell – by Miss Kate Cambie

Part of the Vetspecs ethos is to generate a compassion-driven collegiality amongst the veterinary community in the South Island. After all, we are in this vocation together. The pressures we place upon ourselves, being caring and empathetic people by nature, can be considerable. Having a support network is so important. As such, the team at Vetspecs are committed to providing a variety of CPD events throughout the year – these are obviously intended to be educational but they are also there to promote friendships, mentorships, relaxation and laughter. Vetspecs could not provide these activities without the very generous support of Hills Pet Nutrition, Southern Veterinary Supplies (SVS), Merial Ancare and Pfizer.

So, what did we get up to in 2012? Lots! Here are some of the highlights...

Journal Club kicked off at the beginning of March with a presentation on the importance and management of perioperative hypothermia, given by our outgoing surgical intern, Dr Yael Schneider. From there, it has continued to be a popular monthly event and we are always very impressed by the number of committed Canterbury vets who rise early on those dark Friday mornings for a 7am start! The talented baristas at Coffee Culture reward us early risers with hot drinks and muffins and these are kindly sponsored by Pfizer and SVS – thank you to Chisholm Lunn and Megan Fisher for their bright smiles and regular attendances. Dr Brent Higgins' presentations uncovered his hidden acting and cinematography talents and revealed the musical and dance skills of his Vetspecs co-workers. Who knew! See the 'Uprising' and 'No Scrub' music videos on Youtube's "Brent Higgins TV". The journal article topics were many and varied and selected from the current and international peer-reviewed literature, including:



Helen, Aparna and Brent take a few moments to enjoy the stunning scenery in Arthurs Pass on their way to the Greymouth Roadshow.

- modern analgesia concepts,
- waterless surgical preparation techniques,
- safe ways to achieve secure ovarian pedicle ligation,
- effects of neutering on canine urinary incontinence,
- a selection of hot topics (neurology, emergency care, radiation therapy) from June's Gold Coast Science Week conference,
- diagnostic approaches to those pesky and persistent lameness cases,
- scintigraphy

Our Canterbury Cutting Edge Vets (CCEV) evening meetings started in June with Dr Alison Stickney, from Massey University, presenting "ECG's Made Easy" and she had a very attentive and appreciative audience. July saw Ms. Donnay Tisch, a medical imaging manager from FujiFilm NZ Ltd, entertain a room full of vets and nurse technicians on "The art of the beautiful radiograph". Many take-home-tips were provided on how to improve the quality of our radiographs. Dr Duncan Graham was September's presenter and he discussed "The approach to the pruritic dog". Duncan's talk generated much discussion on this prevalent issue. Our last presentation for 2012 introduced Mr.

Colin Clapp. Colin is the Chief Thinking Officer at Accountable Business Progress and he helps individuals and businesses achieve "more meaning, more money and more freedom". Thank you to all our wonderful 2012 speakers. We are already excited about and looking forward to the CCEV meetings for 2013 – watch out for Dr Sam Long, a specialist veterinary neurologist and neurosurgeon from Melbourne University, heading our way in April!

Throughout the month of August, Vetspecs took our show on the road! Dr Helen Milner, Dr Brent Higgins and our SVS/Merial 2012/13 Surgical Intern, Dr Aparna Tikekar, all presented lectures to an expecting crowd of both veterinarians and nurses in 5 beautiful locations throughout the South Island. We kicked off the tour presenting to a full house in Christchurch with over 80 guests. We then headed to Dunedin, followed by Greymouth, Invercargill and Nelson. Dr Milner spoke in depth about surgical principles of oncology, Dr Tikekar on the use of steroids in neurological patients and Dr Higgins rounded the evening off talking about the new and exciting possibilities in veterinary prosthetics and orthotics (the feature of our last newsletter). It was an extremely successful event, enjoyed thoroughly by our speakers and we are looking forward to next year already. We would like to thank our major sponsor for this event, Hills Pet Nutrition. Without their help, the event would not be possible. Thank you Hills!



Thank you to all the vets and nurses who attended our events and made it a very successful year. We cherish your ongoing support. We look forward to hosting you all again next year! Until then, we wish each and every one of you health and happiness over the Christmas and New Year holidays.



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# Leo's Story

by Anna Fraser



Finding out there might be something wrong with our 6 month old puppy was devastating news for us. He was part of the family with such a special personality. To imagine life without him was just too difficult for us to contemplate. Luckily for us, our local Dunedin vets referred us on to Vetspecs in Christchurch. There was a month gap between our vet diagnosing Leo and us making the trip to Vetspecs. Everyone we spoke to who had had experiences with Vetspecs raved about them.

The day of Leo's operation was especially difficult. We willed the phone to ring with good news but also knew that a phone call could be the bearer of some very devastating news. We were aware of the risks of the surgery but knew that if we didn't give Leo a chance, we were back to square one, not knowing what the future would bring for him and ultimately how long he had left. We tried to distract ourselves during the day of Leo's surgery; we visited Cashel Street Mall, we drove (half way) to Pegasus Town in a bit of a daze, we walked and walked and walked thinking the longer it took for the surgery news to come to us, the better. It wasn't until later on Friday afternoon that Helen called us to say that Leo had made it through the surgery without issue, that he was an 'absolute trooper' and for us to go and have a beer! Leo's recovery from his surgery has been amazing although initially it was hard to see him with catheters and tubes hanging out of seemingly everywhere. Plus, who was responsible for that buzz cut! We are in absolute awe of him and the whole team at Vetspecs. The time, effort and devotion put into Leo during his time there will continue to amaze us. It may not be the end of the treatment-road for Leo but, for now, we have the upper hand.

# Leo the Legend

by Dr Aparna Tikekar, Merial Ancare SVS Vetspecs Intern

Leo, a 6 month old Maltese cross puppy, was presented to his referring clinic for routine castration. Leo was deemed to be a clinically normal puppy but, at his initial examination, Leo was found to have a retained left testicle and a large cranial abdominal mass. An abdominal ultrasound revealed a markedly enlarged right kidney (renomegaly) and a dilated renal pelvis (hydronephrosis). In addition, the left kidney was not visualised sonographically, both ureters were enlarged (hydroureter) and neither ureter could be found to enter the bladder. Leo was thus referred to Vetspecs for further investigation of renomegaly, ureteral ectopia and ureterocele.

Leo had normal haematological and serum chemistry findings with isosthenuric and sterile urine. A positive contrast abdominal CT (Figs 1 & 2) confirmed severe enlargement of the right kidney and both ureters. The right renal cortex was compressed to a thin rim of contrast enhancing tissue. The left kidney was shrunken and demonstrated only a small amount of functional cortex, compatible with an obstructive atrophy. As suspected, the ureters were ectopic and were found to be inserting at the level of the prostatic urethra. The retained left testicle was located intra-abdominally at the level of the internal inguinal ring.

In an attempt to relieve ongoing ureteral obstruction and progressive renal dysfunction, Leo was scheduled for surgery with Dr Helen Milner in which new openings between the ureters and urinary bladder would be created; a procedure known as ureteroneocystostomy (Figs 3 & 4, see over page for illustrations).

A ventral midline laparotomy was performed. Both ureters were identified to be ectopic and located intramurally.



Figure 1 Positive contrast coronal CT view of Leo's abdomen showing marked dilation of Leo's right kidney (arrow head) and the bilaterally dilated ureters (arrows). The left kidney is not apparent.

A ventral cystotomy was performed to allow the bilateral ureteroneocystostomy procedure to be completed. The right scrotal testis and the left retained testis were removed by standard methods. No other abnormalities were detected on examination of the remaining intra-abdominal organs. No intraoperative or anaesthetic complications were encountered and Leo had an uneventful recovery from anaesthesia.

Leo's vitals were monitored very closely peri- and post-operatively. Noninvasive blood pressure and urinary output assessments were normal throughout his time in hospital. Repeat serum biochemistry results at 12, 24 and 48 hours post-operatively showed no abnormalities. Intravenous antibiotics were administered every eight hours and opioid analgesia was provided as required. The use of NSAIDs was avoided due to concerns over their potential to affect renal function.

Leo quickly regained a healthy appetite and his happy puppy disposition! Advice from Hill's nutritionists regarding the ideal diet for Leo was sought in order to offer optimal renoprotection. As such, Leo was started on Hill's I/D and subsequently L/D diet (pers comms, Dr Pru Galloway).

Brave little Leo returned back home to his loving family on his 4<sup>th</sup> post-operative day. Despite his surgery and how admirably he coped with it, Leo does face an uncertain future with respect to his renal function, given the severity of the presenting renal changes. He will require follow up blood and urine tests and abdominal imaging but we are confident he will not let that get in his way of having fun in the here and now. Long may that continue. >>>

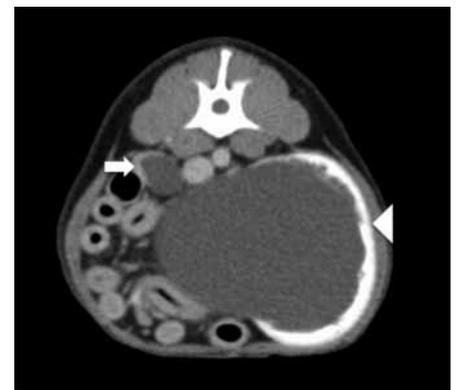
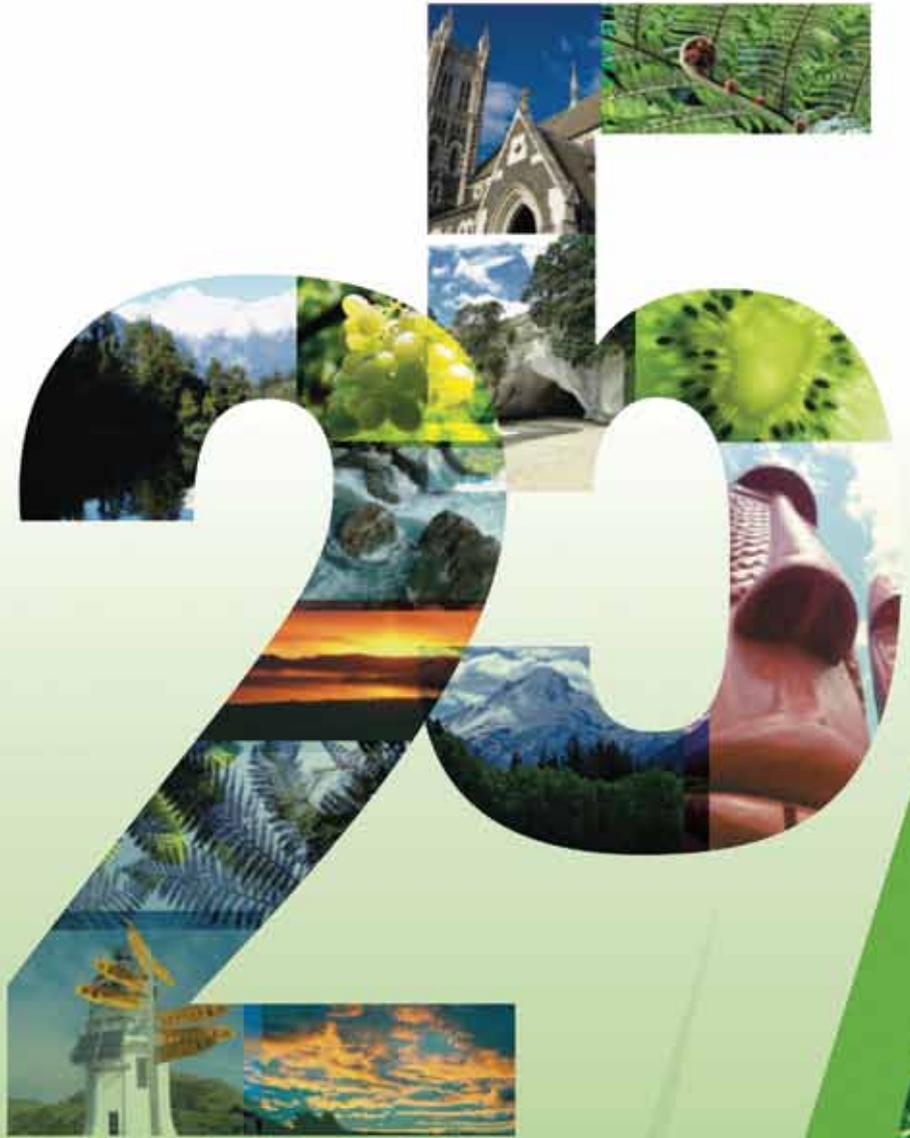


Figure 2 Positive contrast axial CT view of Leo's abdomen showing the right renal cortex as a thin rim of contrast enhancing tissue (arrow head) while the left kidney is shrunken with only a small amount of functional cortex (arrow).



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## So, why does ureteral ectopia happen?

Ureteral ectopia is a congenital anomaly in which one or both ureters empty outside the urinary bladder. It results from an abnormal development of the metanephric ducts *in utero*. Normally, the mesonephros becomes vestigial in female mammals and remains as the deferent duct in males. The metanephric duct becomes the ureter and is derived from a bud of the distal mesonephros close to the cloaca. The meso- and metanephric ducts share a common excretory duct and opening when the bladder first forms. The metanephric duct continues to grow toward the metanephros (or kidney). As the bladder grows, the common duct is absorbed and the meso- and metanephric ducts acquire individual openings. The mesonephric ducts are displaced caudally and open on a prominence on the dorsal urethral wall while the ureteral

openings remain in the bladder.

If the metanephric duct originates more cranially than normal on the mesonephric duct, the metanephric duct will not reach and establish an individual opening into the bladder. The metanephric duct is then carried caudally with the mesonephric duct to open in the bladder neck or urethra of females or the deferent duct or urethra in males. The more laterally deviated the bud is along the duct, the more aberrant the final position of the terminal segment of the ureteral orifice.

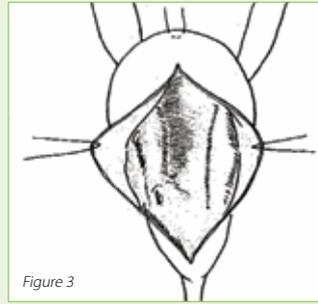


Figure 3

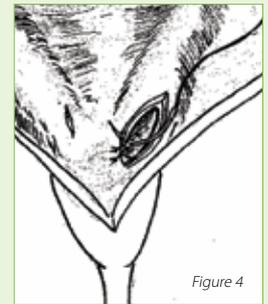


Figure 4

**Figures 3 & 4: Ureteroneocystostomy.** Via a ventral cystotomy (left), a 5-10mm longitudinal incision is made through the dorsal bladder wall into the ureteral lumen. Ureteral and bladder urothelia are sutured together to create a permanent opening (right).

Illustrations by Dr A Tikekar.



Intra-operative photograph taken during Leo's surgery showing the right hydronephrosis and hydroureter.

## Radiation Therapy at Vetspecs

In our 2<sup>nd</sup> issue of the Specialist Connection, April 2011, we announced the ability of Vetspecs to offer radiation therapy (RT) to the New Zealand-wide veterinary population utilising a sophisticated and state of the art linear accelerator (linac) situated at the St George's Cancer Care Centre (SGCCC) here in Christchurch. We are incredibly grateful to the skilled and compassionate team at the SGCCC who have facilitated this special and precious relationship with Vetspecs. Since that issue, we have been privileged to treat four patients, we have had many enquiries about the service and have seen many more that were good candidates for RT. In this issue of the Specialist Connection, we thought we would highlight a little on how RT works, the logistics of how cases are treated here in Christchurch and why we feel offering this cancer treatment modality to your clients is so important.

In 1895, Wilhelm Conrad Rontgen addressed the Wurzburg Physical and Medical Society with his talk entitled 'On a new kind of rays', so announcing his discovery of X-rays. A few years later, X-rays were being used therapeutically and RT is now accepted as a principal way of treating cancer in humans and veterinary patients. In North America, Europe and Australia, the availability of RT has increased substantially for animals over the last 20 years. In 1994, the American College of Veterinary

Radiology created a specialty board in veterinary radiation oncology promoting training and specialist board certification in this field. In New Zealand, we have certainly lagged behind the rest of the world; the reasons are not due to a lack of medical indications but, perhaps not unexpectedly, due to expense and lack of available expertise in our wonderful but small country. However, we are excited to state that times have changed!

Linacs are capable of delivering very high-energy radiation beams for very precise and consistent treatment of tumours. When radiation interacts with tissue, energy is deposited which 'excites' or ionises tissues leading to the formation of free radicals and the subsequent direct and or indirect damage of DNA. This DNA damage kills cells or renders them incapable of reproducing, an event termed 'mitotic catastrophe'. It is true that the radiation response of normal tissues parallels that of tumours and, like any medical intervention, we are always faced with a balancing act of maximal efficacy against a disease process and minimal adverse effects. The sophisticated planning by the SGCCC team and their exquisite equipment focuses on balancing this equation such that normal cells are minimally exposed to radiation (and those that are exposed are capable of repairing themselves) whilst tumour cells are preferentially sterilised.

### An Update by Dr Helen Milner

The transfer of radiation energy to tissues is measured in units of energy deposited per weight of tissue (joules/kg) known as Grays (Gy). In the 1920s, it was realised that RT is more effective and better tolerated when the radiation dose is delivered in small but numerous treatments compared to giving the same dose all at once. This is known as fractionation and it helps spare normal tissue whilst simultaneously controlling tumour cells. In general, RT efficacy is optimised when as high a dose as possible is delivered in multiple fractions over the shortest possible time. This fact forms the basis of our fractionation schemes but variations arise based on tumour biology and intent (curative or palliative).

At Vetspecs, we are fortunate to have some wonderful support from veterinary neurologists, veterinary oncologists and veterinary radiation oncologists in North America and Australia. Skype, emails and the internet make the world a small place! Case details, including advanced imaging (CT and or MRI) files, are viewed remotely by these specialists and they provide us with invaluable information on the most current treatment thoughts pertaining to the case on hand. This includes discussion on surgery, chemotherapy and or RT and, where combination therapies are to be instigated, the timing of each with respect to the other – that is, optimal adjuvant (after surgery) and neoadjuvant (before surgery) strategies.



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## NEW INDICATION

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**References:** 1. Ryan W, Moldave K, Carithers D. Clinical Effectiveness and Safety of a New NSAID, Firocoxib: A 1,000 Dog Study. *Veterinary Therapeutics*, Vol 7, 119–126, 2006. 2. Pollmeier M, et al. Clinical evaluation of firocoxib and carprofen for the treatment of dogs with osteoarthritis. *Veterinary Record*; 159: 547–551, 2006. 3. Freedom of Information Summary, Supplemental new drug application, NADA 141–230, PREVICOX. 4. Merial Data on File PR&D 0102001–11 and 13. 5. Lever, et al. Management of peri-operative pain associated with soft tissue surgery in dogs treated with Firocoxib. *Proc ACVIM June 9–12 2004*; Abstract 134.



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With our "RT recipe" in hand, we contact the amazing team at SGCCC for a treatment quote and to arrange an initial planning CT for those cases needing multi-beam 'high-tech' schedules (e.g. brain and most nasal tumours). This necessitates attendance at the centre during which the patient is sedated and placed into a mouldable vacuum bag. This customised 'vac bag' is re-used for every subsequent RT session that particular patient attends. The advanced RT unit at SGCCC permits the use of three-dimensional conformal RT. CT and or MRI images are combined with treatment planning software to produce complex treatment plans utilising multiple beam energies and precisely shaped treatment fields. The RT dosing starts approximately a week following the planning CT and, before every RT session, the area in question is re-imaged to ensure correct alignments of the radiation beams. Typically, curative intent treatments entail daily (Monday-Friday) dosing over 3-4 weeks

whilst palliative protocols are weekly over 4-6 weeks. For adjuvant RT, the timing between surgery and RT can be very important to the outcome so, for cases in which you are considering performing surgery first, please contact Vetspecs ahead of time due to the planning that is needed before we can start RT.

RT is the treatment of choice for many tumour types. The best examples are probably nasal and brain tumours. RT should be considered in post-surgical situations when a pathology report reveals a close or incomplete resection; RT may be effective in preventing recurrence in the same location and or prolonging the disease free interval. Mast cell tumours and soft tissues sarcomas are good examples of this adjuvant use of RT. Similarly, some tumours may be deemed non-resectable and RT may be a viable alternative or permit a previously non-resectable mass to be surgically removed. (Note that irradiated tissues can behave differently to 'normal' tissues so surgeons should be aware of potential pitfalls and complications that may arise when operating in a previously irradiated field). Osteosarcomas are known to be very painful conditions and palliative RT can help provide effective analgesia.

We have established that there are many clinical indications for RT, that our RT



knowledge is advanced and developed by a collaborative, international and multi-specialist approach and that we have access to the most state of the art facility here in Christchurch. So, why have we only proceeded with 4 patients? Well, the simple answer is cost. RT is not inexpensive. For a 'simple' superficial skin cancer, treatment costs may be as low as \$2000 and, for palliative symptom control, estimates are likely to be in the region of \$3000. However, for complex and curative-intent treatments, we may have to consider fees of \$8000-12,000. Hence, we can understand that many owners will find this cost prohibitive. Regardless, we owe it to our clients to inform them of all their options. Similarly, pet insurance uptake should be increasingly encouraged.

Please contact Vetspecs if you have cases you would like to discuss. The field of RT is expanding and we are living in exciting times. The ability to offer more to our worthy patients is a thrilling reality.

## STAFF PROFILE

### Becky Clarke, Qualified Veterinary Nurse

#### Where did you complete your nursing studies?

I graduated from the Nelson Marlborough Institute of Technology in 2009. I was in a small class of 14 students which gave a great teacher-student ratio for learning. We had our own onsite theatre and we were regularly involved in small animal anaesthesia and de-sexing surgeries. I graduated with a Certificate in Veterinary Nursing and I was awarded the Merial Ancare Meritorious Award. I really enjoyed spending time in sunny Nelson. The beach was a great place to hold my study breaks!

#### What do you like about your job at Vetspecs?

I enjoy working with our many orthopaedic cases. Providing pain relief and being involved with fracture repair is very cool. Seeing the progress of our

patients post-op and watching them walk out the door after surgery is so rewarding. Reuniting a pet with their owner is a very special moment and it always puts a smile on my face! The vets that I work with really encourage nurse involvement and push us to learn new skills.

#### Tell us a bit about your life outside the clinic.

I am kept busy with my two rascal dogs, Meg and Charlie. Over the winter I have started going to spin and boxing classes. I really enjoy bashing the boxing bag after a hard day's work! My Saturday nights are spent with my girlfriends on the dance floor ;o).

#### Where was the last place you went on holiday?

My boyfriend and I went to Hawaii. We spent 9 amazing nights on Waikiki



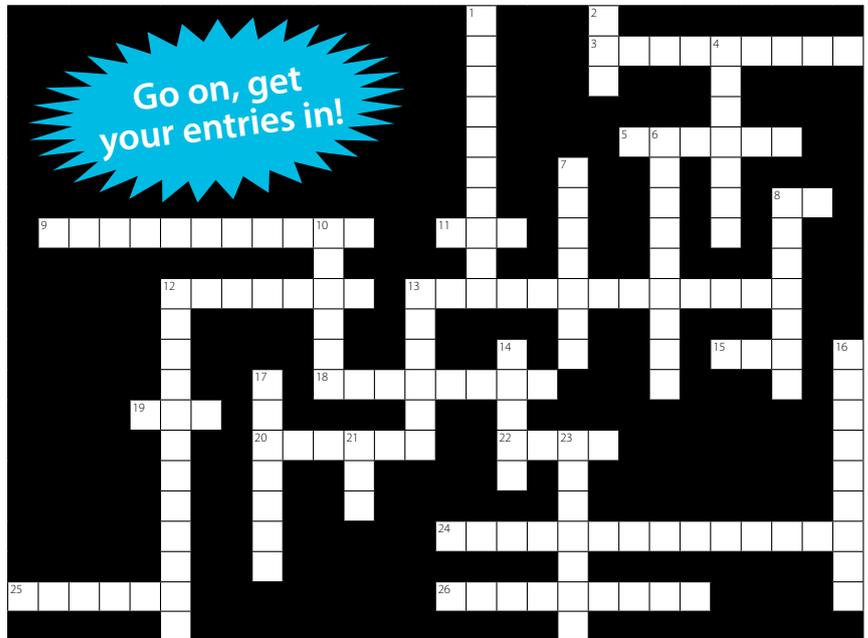
Beach. My days were filled with sun bathing, shopping and eating delicious American food including "build your own pancakes" at Denny's - they were fantastic. The peanut butter sauce was to die for! We went snorkelling at Hanauma Bay, a marine-life reserve that the Hawaiians are working hard to protect. It is compulsory for visitors to watch a very interesting and educational video about this protected reef before entering the waters. I highly recommend this to anyone planning a trip to Hawaii.

# Crossword

## ACROSS

3. Who stole Christmas? (3, 6)
5. What did Frosty the Snowman have for a nose? (6)
8. Abbreviation for an advanced imaging technique commonly used at Vetspecs for the diagnosis of urinary tract disorders (2)
9. Congenital and localised ureteric dilation that may be associated with an ectopic ureter is known as \_\_\_\_ (11)
11. What piece of clothing caused Frosty the Snowman to come to life? (3)
12. In an effort to keep from \_\_\_\_\_, Frosty the Snowman travelled to the North Pole (7)
13. Radiation therapy is more effective and better tolerated when radiation dose is delivered in multiple small treatments. This is known as \_\_\_\_ (13)
15. If a cancer treatment is given before surgery, it is known as \_\_\_\_-adjuvant treatment (3)
18. What Hill's-sponsored Vetspecs-delivered event happens typically in August? (8)
19. What was the Grinch's dog's name? (3)
20. Radiation interacts with cells through the transfer of what? (6)
22. Acronym for CPD evenings presented by Vetspecs (4)
24. Abnormal dilation of the renal pelvis is also known as \_\_\_\_ (14)
25. What was Rudolph's father's name? (6)
26. Sensitivity of cells to irradiation varies with the cell cycle. Late G2 and M are the most \_\_\_\_ (9)

**Fax, email or post your completed crossword to Vetspecs by 31st December 2012. All correct entries go into the draw to win a \$100 hamper, kindly supplied by SVS. Remember to include your name, clinic name and contact number so you can be notified. Winner will be drawn on the 12th of January 2013 and put on our facebook page.**



## DOWN

1. Name the New Zealand Christmas Tree (10)
2. Acronym for infection affecting the urinary system (3)
4. In 1895, Wilhelm Conrad \_\_\_\_ announced his discovery of x-rays to the medical world (7)
6. IVU stands for intravenous \_\_\_\_ (9)
7. What was the name of the young doe reindeer that told Rudolph he was cute? (7)
8. What was Frosty the Snowman's pipe made from? Also an intestinal foreign body! (4, 3)
10. The most common variety of particle accelerator in clinical use is the \_\_\_\_ accelerator (6)
12. The Vetspecs Intern position is sponsored by \_\_\_\_ and SVS (12)
13. Journal club meetings are held on which day of the week? (6)
14. During radiation treatment, a patient must remain still on the treatment table, known as a \_\_\_\_\_. Also found in your living room (5)
16. Journal club coffee and muffins are sponsored by which companies; \_\_\_\_ and \_\_\_\_ (abbr)? (9)
17. Radiation dose is measured in units of energy deposited per mass of tissue. What is the name of the standard unit of radiation dose? (3, 4)
21. What was the colour of Rudolph's nose? (3)
23. A ureter which bypasses the normal entry point is known as \_\_\_\_ (7)



## Vetspecs team

Left to right: Helen Milner (Owner & Director), Brent Higgins, Amanda Jones, Becky Clarke, Lauren Keenan, Aparna Tikekar, Kate Cambie, and Philippa Burns.



**vetspecs**

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