vet|specs
Veterinary Specialists

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THE SPECIALIST CONNECTION

Antarctica – The White Continent

By Dr Helen Milner

Early in December, 2010, my father sent an email to my brother and me entitled "Antarctica Anyone?" with the following YouTube link attached http://www.youtube.com/watch?v=qaij7J0Xvnc.

If you watch it, you will see why I remain grateful that my father never went into an advertising and marketing career. You will also see why I rather quickly dismissed the idea! Then, a Christmas alone on-call and further large aftershocks on Boxing Day led to a sense of reckless abandon….I found myself ringing the National Geographic-Lindblad office in New York City on New Year's Eve. I booked the last solo cabin on a ship called The National Geographic Explorer and how very glad I am that I did.

So, armed with a new found world of thermal accessories, we flew to Buenos Aires and then to Ushuaia, the so called Fin Del Mundo (End of the World). From there we jumped aboard the Explorer with approximately 200 fellow passengers and crew and sailed across the infamous Drake Passage; my first experience of not seeing land for 2 days. This resulted in a "love at first sight" experience between me and the South Shetlands Islands – terra firma!

Weddell seal.

Professional dog walker in Buenos Aires.

I will end with a quote from a sign that sat outside the "Great Apes" exhibit at the Bronx Zoo: "In the end we will conserve only what we love. We love only what we understand. We will understand only what we are taught." (Baba Dioum, 1968).

I would recommend this trip unreservedly to anyone and I would return in a heartbeat.

Dad and me on an ice shelf with ship behind.

Back in NZ, I have been asked several times "what was the best bit?". It is a question I find hard to answer. The isolation and austerity is humbling. It brings new meaning to tales of the early polar explorers such as Scott, Amunsden, Shackleton – their stories interested me greatly before I took this journey; now I stand in complete awe of them. The fact that anything lives there and calls it home is utterly astounding. The innocence of the animals as they approached us humans without fear was a tear-jerking privilege.

Gentoo penguins.

Prequel by David Milner

Circa 1950's. Hunting whales doesn't have a stigma attached. If women wanted lipstick, for example, the manufacturing products came from whales (thank goodness they are now synthetically available). In the 1950's, I was a lab technician in the UK and brought up on great stories of British exploration. Every school child in Britain was taken as a formal school outing to see the newly released movie "Scott of the Antarctic". I was hooked. I learn of a job on a whaling ship – it was to sail to Antarctica from Scotland with Norwegian and Scottish crews aboard; they needed three lab personnel to analyse the various whale products they were to acquire. A nine month trip to the great southern seas would have paid me enough to buy a house on my return (5 or 6 times what could be earned in the UK at that time). I think every lab technician in the UK applied for those jobs - what an adventure!

I didn't get the job…but fast forward almost 60 years and the itch to see Antarctica is still there. It is now early December, 2010, and my neighbour returns from an Antarctic trip on a ship called the National Geographic Explorer. I saw her voyage DVD and that was it – I was hooked again! I booked my solo cabin (S309) for December 2011 and almost tongue in cheek asked my son and daughter by email if anyone was interested in carrying my bags. My wife, Marje, disqualified herself on the basis that she gets seasick on the Auckland to Waiheke ferry!

To my immense surprise I received an email on December 31st, 2010, from Helen that read "Cabin S310 is much better than S309!" and so our adventure began…

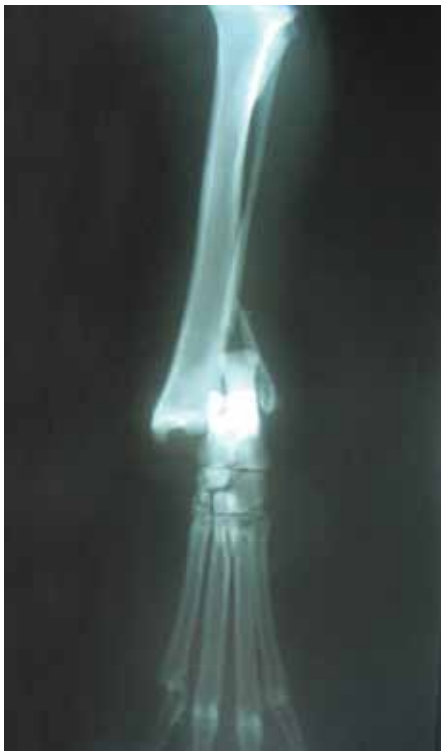
Two month old (aka 'Weaner') elephant seal with Helen reflected in its eyes.

Jess the Wonder Dog

by the Vetspecs Surgical Nursing Team

Jess, a 6.5 year old Labrador, presented to Vetspecs having been hit by a car 3 days earlier. She was non-weight bearing on her left hind with severe swelling, soft tissue loss and exposed bone affecting her hock and foot. Radiographs revealed luxation of her tibiotarsal joint, lateral malleolar and metatarsophalangeal fractures and dislocation of the 1st and 2nd phalanges of her 2nd digit.

TAESF frame applied to Jess's limb during her first surgery.



Pre-operative radiograph demonstrating Jess's orthopaedic injuries.

After discussions regarding amputation versus limb salvage options, the owners agreed to attempts to save Jess's leg. Plans were made to temporarily stabilize her tibiotarsal joint and malleolar fractures with a trans-articular external fixateur frame (TAESF). This was to facilitate comfort and treatment of her soft tissue injuries. This phase was followed by free-skin grafting and finally permanent arthrodesis of her tibiotarsal joint. These staged surgical procedures were to take place over several months.

Jess's first surgery involved the application of a TAESF and soft tissue and osseous debridement. Then, Jess's extensive wound management plan began. The open wounds were dressed once to twice daily during Jess's initial 7-day stay at Vetspecs. During this time, Jess displayed her fantastic nature and tolerance to her ordeal; we soon learned what an amazing patient we had in our midst.

After a further 5 weeks at home with ongoing dressing changes, Jess returned for skin grafting. Her open wounds had contracted and granulated beautifully. Jess's second major surgical procedure entailed removing her TAESF, harvesting two full thickness meshed skin »»

Trans-articular external skeletal fixation

By Dr Brent Higgins

Trans-articular external skeletal fixation (TAESF) can be an invaluable tool in traumatology and orthopaedics.

TAESF may be dynamic or static. Dynamic frames are hinged and allow a joint to move in one plane. A static frame aims to provide immediate total stability to the joint. In Jess's case, the frame importantly allowed improved analgesia and easy daily access to her considerable open wounds. Unphysiological and unwanted tissue movement would have disrupted angiogenesis and tissue repair. By using the TAESF as a prelude to arthrodesis, the need for initial internal implants was avoided in Jess whilst the traumatised soft tissues were appropriately managed.

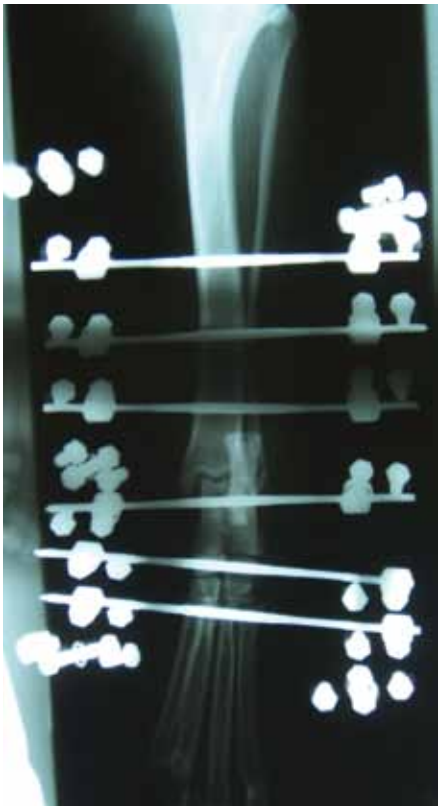
A simple static TAESF frame can be created using 2-4 half or full pins in bones either side of a joint. The pins are connected with clamps to a bar. Each bar is then clamped to another at an apex with a third bar added which spans the joint to create an A-shaped frame. Indications for TAESF are to support ligament and tendon repair, juxta-articular fractures and arthrodesis. TAESF frames can be simple to construct and apply to each patient with minimal orthopaedic equipment required. Joints not amenable to external coaptation can be immobilised using this technique e.g. the stifle. Immediate stability is instituted and post-application frame modifications can be performed.

However, the use of TAESF is not without some morbidity. Joint immobilisation causes muscle atrophy, cartilage thinning and fragility, periarticular fibrosis and stiffness. As such, physiotherapy is strongly encouraged to optimise joint function after TAESF frame removal. Furthermore, the pin-bone interface receives increased transmitted forces compared to non-articular frames. This eventually causes pin loosening and pin tract discharge which is the most common TAESF complication and may result in premature frame removal.

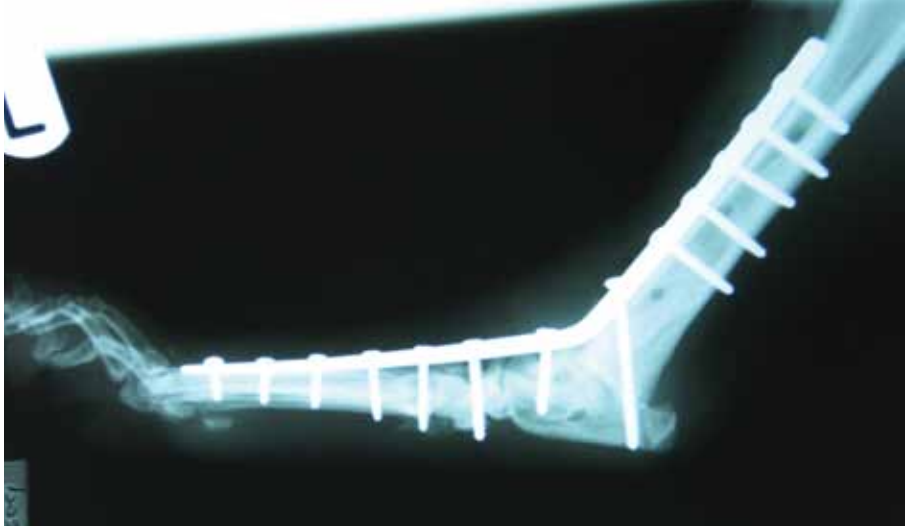
grafts from her lateral thorax, preparing the recipient beds with meticulous debridement and then applying the harvested skin to their new homes. A custom-moulded fibreglass splint was applied to Jess's distal limb to facilitate ongoing tibiotarsal support, minimize movement, protect the skin grafts and allow regular dressing changes whilst the skin grafts "took".

After a few more weeks at home, Jess returned to Vetspecs for her final surgery. Her skin grafts were looking good. Despite good weight bearing and limb usage, palpations revealed a markedly reduced range of movement in her tibiotarsal joint and radiographs showed tibiotarsal subluxation with marked peri-articular osteophytosis. Pantarsal arthrodesis surgery entailed bone grafting and the dorsal application of a custom made 2.7/3.5 plate.

At her six week post-operative check, Jess walked in wagging her tail and acting like she owned the place. Thus, after a long 16-week road entailing three surgeries and countless dressing changes, Jess had completed her many treatments as a happy 4-legged canine! This would not have been possible without the amazing »»



Radiograph taken following Jess's 1st surgery. Note reduction of her tibiotarsal luxation and 2nd digit amputation.



Post-op lateral radiograph taken following Jess's arthrodesis surgery.

Free Skin Grafts (FSGs)

By Dr Yael Schneider and Dr Helen Milner

FSGs can be a great solution for reconstructing large skin defects of the distal limb.

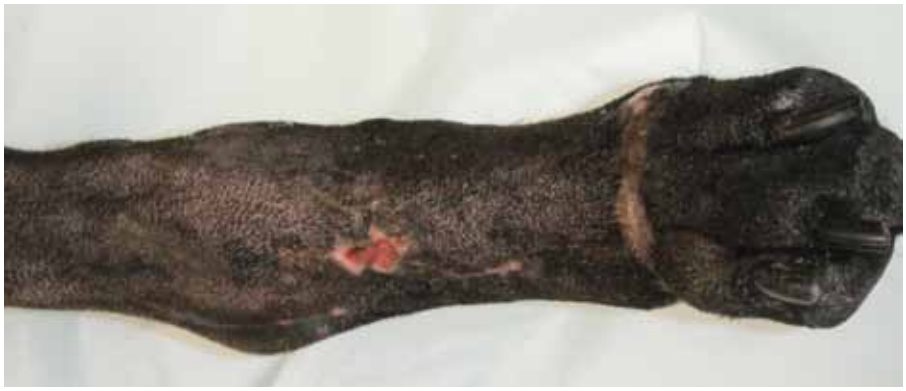
Phases of 'Graft Take':

- Plasmatic Imbibition – first 2-3 days; graft absorbs serum proteins and erythrocytes from recipient surface; graft may appear edematous and bruised.
- Inosculation – 'vascular re-plumbing'; new capillary buds from recipient bed anastamose with old vessels of the donor tissue; graft looks more viable.
- Revascularization – re-establishment of skin circulation by more organized penetration of blood vessels into the grafted tissue.
- Re-innervation – graft sites can be pruritic as sensation is restored; important to prevent patient self-trauma for several weeks.

Some Principles of Success:

- Meticulous pre-surgical wound management of the recipient site until healthy bed of granulation tissue exists; don't rush it.
- Adhere to the Tenets of Halsted eg aseptic technique, haemostasis, gentle tissue handling, minimise tension and dead space.
- Minimise time between harvest and application of FSGs by thorough surgical planning.
- Avoid use of electrocautery.
- Remove subcutaneous fat from donor skin; hair follicle bases should be visible; use skin hooks or hypodermic needles to facilitate gentle handling.
- Try to match donor and recipient coat colour, hair direction and length
- Movement, fluid accumulation (eg haematoma, seroma) beneath the graft, excessive tension and infection are death nails to FSGs.
- Mesh donor skin to facilitate drainage of fluid and optimise tension.
- Use tacking sutures between the donor and recipient tissues and suture the graft under slight tension to minimise deadspace and movement.
- Light pressure dressings minimise fluid accumulation, movement and the risk of self trauma. Avoid excessive bandage compression.
- Dress with a low-adherent contact layer, an absorbent intermediate layer and an outer protective/immobilising layer.
- Dressing changes in the first 10-14days are best performed under sedation to avoid unnecessary patient movement.
- Perform all dressing changes aseptically and take great care to not 'pull' the contact layer off the graft; moisten with sterile saline and gently 'peel' it away.
- Delay the first bandage change for 2 days to reduce the risk of contamination and graft movement. Dressing changes are usually scheduled every 2 days during the first week then twice weekly for 4-6 weeks.
- Assess graft viability (temperature, colour, swelling, discharge) at every bandage change.
- Resect any infected or non-viable areas and perform culture and sensitivity testing.

commitment of her loving owners. Jess too must take much of the credit – her brave attitude remained fantastic throughout. She was always extremely excited to be here … and we are convinced this had nothing to do with the fact she knew exactly where the dog treats live at Vetspecs!



Jess's healed skin grafts.

Recommendations for External Skeletal Fixation

By Dr Brent Higgins and Dr Helen Milner

- Always use full aseptic technique.
- Frame strength must suit patient's assessment score and biomechanical loads it will encounter.
- Most common frames = uniplanar; unilateral (Type 1) and bilateral (Type II).
- Know safe anatomical corridors for pin insertion.
- Use 2-4 bicortical pins per bone fragment; no mechanical advantage after 4.
- Pin diameter should not be >25% of bone's cortical diameter.
- Frame stiffness is proportional to pin diameter.
- Frame stiffness is inversely proportional to pin length.
- Threaded pins increase cortical purchase; smooth pin purchase may be improved by inserting at an angle <or> 90degrees to the cortex.
- Pre-drill with a bit 0.1mm smaller than intended pin size.
- Insert pins with a power drill <300rpm; avoid high drill speeds.
- Saline lavage during insertion to cool pins and drill bits.
- Space pins evenly throughout available bone.
- Insert pins no closer than 3x pin diameter or half bone diameter from fracture lines.
- Place pin clamps 1-2cm from the skin; allow for post-operative swelling.
- Discontinue antibiotics post frame application, unless otherwise indicated.
- Frame should achieve axial micromotion at fracture sites.
- Frames may be dynamised/ disassembled during healing to enhance load sharing between implants and bone; usually delay until 4-6 weeks post-operatively.

Jessica's owners' say

Jessica "Snowball" Whitehead is a very much a loved member of the Whitehead family. In a freak accident, she severely damaged her leg and we were left wondering if she would lose her leg or in fact even survive. After being stabilised at our local vets, she was referred to Vetspecs in Christchurch for intensive surgery to save her leg. This was to be her home away from home on many occasions. Vetspecs were amazing and Jessie was always very happy to stay with the wonderful staff. She was treated as a family pet with lots of love, attention and the odd treat thrown in for good measure. Helen and the nurses did an amazing job of saving her leg. She now walks with a bit of a limp and will often pick up her leg if she is wanting to get up some speed but she is still the happy, active and loving dog we have always known.

Arthrodesis – What, Why, When and How?

By Dr Helen Milner

Arthrodesis is the surgical fusion of a joint which aims to alleviate pain by the total loss of joint movement.

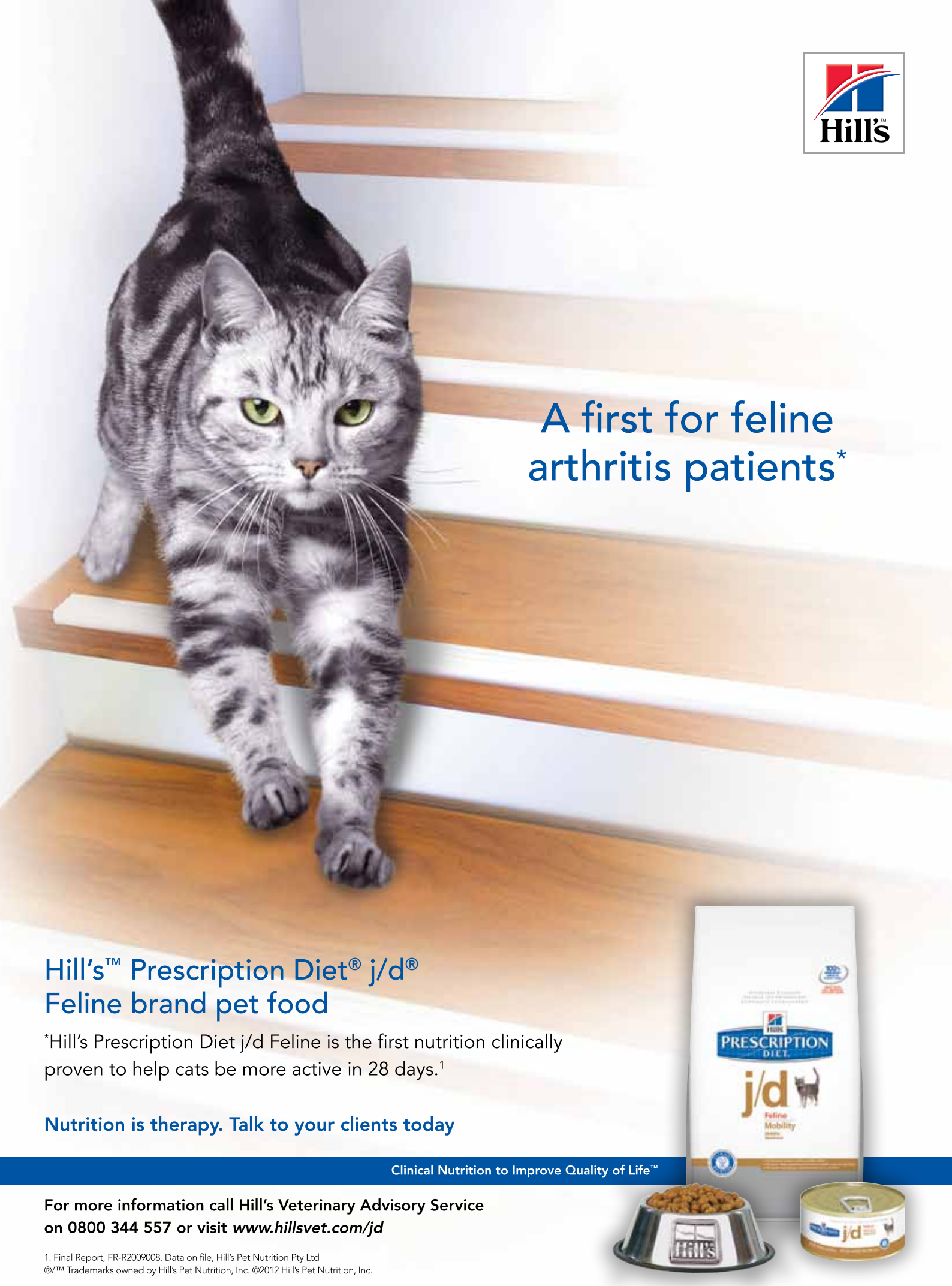
It is a salvage procedure and an alternative to amputation in several clinical situations:

- Severe DJD
- Joint instability
- Irreparable articular fractures
- Immune-mediated joint disease
- Limb deformities
- Limb spare in oncological surgery
- Neurological injury (providing cutaneous sensation preserved)

Arthrodesis results in gait abnormalities. Fusion of the shoulder and of distal joints such as the carpus and tarsus are very well tolerated. In contrast, fusion of the elbow and stifle produce considerable disability. [Fusion of the hip is not performed].

Surgical principles:

- Do not perform in the presence of infection.
- Articular cartilage must be removed from intended fusion surfaces.
- Maximise area of fusion surfaces.
- Fusion must be made at functional angles.
- Rigid internal fixation is needed with compression across contact surfaces preferred.
- Bone grafting with autogenous cancellous bone or with Veterinary Tissue Bank™ allografts (the latter is available from Vetspecs).
- Prudent strategic use of external coaptation – not all arthrodeses require post-operative external support. If used, very careful bandage management is mandatory.
- Implant removal may be necessary once bones have healed to alleviate certain risks eg 'stress riser' related fractures.



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1. Final Report, FR-R2009008. Data on file, Hill's Pet Nutrition Pty Ltd

2011 – A 'Shaky' Internship Year

Dr Yael Schneider, Merial Ancare/SVS Intern 2011

February 22nd, 2011. I had been in Christchurch for exactly one hour and went to Vetspecs for the first time. As luck would have it – I was standing in the Vetspecs reception area when the earthquake hit. When I think back, I can't believe a year has passed since that day… and what a memorable year it has been!

As the 2nd Merial Ancare SVS Vetspecs Intern, I had true "behind the scenes" access to small animal specialist referral practice. I had the opportunity to scrub-in on specialist surgeries and assist with specialist medical procedures. I was able to coordinate and assist with advanced procedures such as radiotherapy, sonography, CT, MRI and fluoroscopy. Furthermore, I really enjoyed working alongside the dedicated team at the Christchurch After Hours Hospital to ensure our patients received around-the-clock care.

Nothing builds confidence quicker than being chief-in-charge of the weekend phone. Yup, when you phoned on a Saturday or Sunday, chances were you spoke with me. It was great getting acquainted with the South Island clinicians and then matching names to faces over the 7am Journal Clubs and/or the 7pm Canterbury Cutting Edge Vets meetings.

At Vetspecs, I've had the privilege of working alongside a professional and dedicated team of doctors and nurses. Not to mention the many special animals and their dedicated owners. From Dr Helen Milner and Dr Brent Higgins, I learned that there is no substitute for thorough surgical planning, meticulous surgical technique and dedicated post-operative care. Working alongside Dr Robin Pullen was enlightening; in addition to sharing a common accent, we also enjoyed sharing stories of the States and our "newbie" impressions of NZ. From her, I learned to appreciate the art and science of internal medicine; never underestimate the importance of thorough history taking! Rain or snow (and we've had our fair share of that too in the winter of 2011!), the Vetspecs team were 100% committed to our patients.

I look forward to implementing the knowledge I have gathered during my internship to the coming years of my career. To the incoming intern, I am sure they will have the satisfaction of helping to shape the programme as it grows and I wish them the best of luck. My sincere thanks goes to Merial Ancare, SVS, everyone at Vetspecs and all the referring clinicians for your combined and continual financial, emotional and collegial support.

Addendum

I wanted the opportunity to thank Yael for her energy, friendliness, intelligence, humour, adaptability and bravery during her internship year at Vetspecs. As we all know, 2011 was quite an exceptional year with extraordinary challenges for everyone in Christchurch and its surrounds. To have been in the building for literally 5 minutes when the February 22nd quake struck and to then still accept the offer of the intern position certainly took some guts! In addition to this, Vetspecs went through some major business transitions this year and, through all of that, Yael remained dedicated and patient. Thank you, Yael. I wish you only the very best for your future endeavours. Helen Milner

The 2012/2013 Merial Ancare SVS Intern

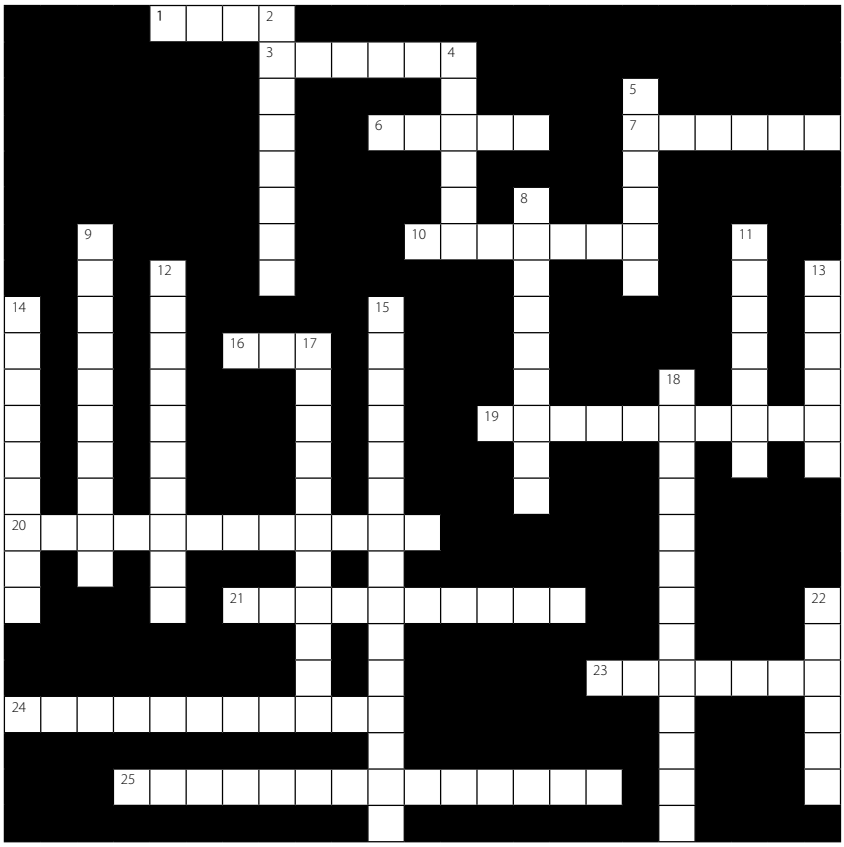
It is with immense pleasure that the team at Vetspecs welcomes, in April 2012, our Merial Ancare SVS Intern for the coming year, Dr Aparna Tikekar.

From early on in her life, Aparna has maintained a brilliant academic record. After graduating from Bombay Veterinary College in 2003, Aparna worked at the Bombay SPCA hospital for two years while studying for a Masters degree in Veterinary Surgery. She then spent a year working at a wild animal rescue and rehabilitation centre in her home town of Pune, India. The desire to further enhance her skills motivated her to move to the UK where she spent two years seeing practice. She obtained membership to the prestigious Royal College of Veterinary Surgeons (MRCVS) by passing the statutory membership examinations in June 2009. Following her time in the UK, Aparna spent a year in general practice in Singapore. Thereon, she moved to Palmerston North, New Zealand and completed a rotating internship at the Massey University Veterinary Teaching Hospital from which she has obtained glowing references from both surgical and medical staff specialists.

Aparna is a true citizen of the world. She has a desire to practice in as many countries as possible before heading home for good. She has a passion for travelling and absorbing cultures into her work. In the future, Aparna aims to complete a surgical residency and become a specialist in small animal surgery in order to be able to achieve her dream of heading a referral surgical facility in India. Vetspecs is excited to be able to assist Aparna in fulfilling her admirable ambitions.

During her spare time, Aparna enjoys connecting with her friends spread across the planet, thanks to video conferencing! She recharges herself with cinema, music, cooking, painting and photography. She dotes on her niece and nephew who are also her travelling companions when in India. On these short visits back home to India, she does as much charitable animal work as possible.

Crossword



ACROSS

1. A respiratory condition usually affecting short nosed dogs and cats (acronym)
3. Cementless hip replacement system offered exclusively by Vetspecs
6. A vessel that bypasses a normal route
7. Artificial colloid
10. Sesamoid bone of the hind limb
16. Type of bone plate
19. Patient's age, breed, sex (for example)
20. Spasm resulting in the head and tail bending upwards
21. Unknown cause
23. Christchurch summer festival held in January
24. Fusion of a joint
25. Spherical gram-positive bacteria

DOWN

2. Film directed by Stanley Kubrick. The .....
4. Suppression of urine formation
5. Wound scab
8. The avulsion of skin from the underlying tissues
9. Loss or amputation of a digit
11. Scale to measure earthquakes
12. Instrument for measuring degrees of joint movement
13. A sedative narcotic
14. Incision into the abdominal cavity
15. A surgical treatment for sphincter mechanism incompetance
17. Inflammation of the abdominal cavity
18. Twitching of the orbicular muscle
22. To change or develop into bone

Fax, email or post your completed crossword to Vetspecs by 13th April 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. The correct answers will be shown on Vetspecs Facebook page from the 20th April 2012.

Vetspecs team

Left to right: Brent Higgins, Helen Milner, Amanda Jones, Becky Clarke, Lauren Keenan, Yael Schneider, Kate Cambie, and Philippa Burns.

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