The Pfizer Internship at Veterinary Specialist Group

VSG in conjunction with Pfizer New Zealand are pleased to welcome Dr. Kyle Clark as the 2007 Pfizer Intern @ VSG. Kyle completed her veterinary degree at Massey University in 2006. Following the completion of her twelve-month internship, she hopes to pursue further clinical specialist training through the North American residency system.

The Pfizer Internship is offered to new graduates of Massey University annually and is a fixed twelve-month position from December to December of the following year. The position offers concentrated, supervised, in-hospital training through services in small animal surgery, internal medicine and diagnostic imaging. Pfizer New Zealand has been a key contributor to the success of the programme.

The objectives of the programme are:

1. To prepare the intern for postgraduate specialist training (internship, residency, research) at university teaching hospitals overseas.
2. To provide the intern with an opportunity to develop an understanding of the clinical management of challenging small animal medicine and surgery cases.
3. To allow the intern to learn professional publication and presentation skills.
4. To provide the intern with an opportunity to develop skills in client communication, medical record keeping, and literature review.

The intern has no primary case responsibility but works alongside the specialist during the admission of complex cases referred to the Veterinary Specialist Group hospital. During the year, the intern will develop the clinical skills required to assess, diagnose, and treat these patients with the opportunity to refine fundamental skills including catheter placement, blood collection, fluid therapy, anaesthesia management, analgesia, transfusion medicine, and the acquiring and interpretation of imaging studies and clinical pathology.

If an animal proceeds to surgery, the intern is scrubbed in as surgical assistant, getting first-hand experience of general surgical principles and specific techniques. The monitoring, management, and care of hospitalised patients are a major part of the intern's duties that extend to weekends and after hours.

Dr. James Sutherland-Smith, the 2003 Pfizer Intern @ VSG is in the final year of his residency-training program in radiology (diagnostic imaging) at Tufts University in Massachusetts, USA. This is a three-year program that will ultimately allow James to sit the Board Certification examinations for the American College of Veterinary Radiology.

Dr. Wendy Archipow, the 2004 Pfizer Intern @ VSG is currently completing a residency position in Small Animal Surgery at Purdue University in Indiana that began in July 2006. This is a three-year program that will ultimately allow Wendy to sit the Board Certification examinations for the American College of Veterinary Surgeons.

Dr. Thurid Freitag, the 2005 Pfizer Intern @ VSG has completed her PhD from Massey University and is currently in the first year of a residency in Small Animal Internal Medicine at the University College of Dublin. This program will ultimately allow Thurid to sit the Board Certification examinations for the European College of Veterinary Internal Medicine.

Dr. Ben Wernham, the 2006 Pfizer Intern @ VSG has been accepted into a rotating internship position at Kansas State University in the United States. His position commences in June 2007 and we at VSG along with Pfizer New Zealand wish Ben the best of luck in his goal to achieve a specialist qualification.

Dr. Kyle Clark and VSG would like to acknowledge the invaluable support of Pfizer New Zealand in making the Internship Programme a success. We wish Kyle all the best for 2007 and beyond.

Pfizer Animal Health

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The Veterinary Specialist Group hospital is located on the Unitec campus situated between Gates 2 and 3 on Carrington Road.

Veterinary **Specialist** Group

The Next Step

Issue 7. April 2007

EXPERTISE • TECHNOLOGY • COMPASSION

VSG and the Referring Veterinarian; A Symbiotic Relationship

- by Mark Robson

Dr Mark Simpson

The availability of dedicated specialist veterinary centres is a relatively recent phenomenon in New Zealand compared with other countries. Our veterinary community is unique, and to a great extent facilities such as VSG have grown organically with few opportunities to copy the trends elsewhere. However one consistent feature around the world is that strong partnerships between the specialist hospital and referring veterinarians are essential for success.

It takes a great deal of trust to pass on one of your dedicated clients to another veterinarian, and at VSG we are privileged to hold the trust of many excellent veterinary practitioners. The successful management of a complex medical, surgical or imaging case brings great benefits to the specialist, the generalist, the owner and the animal. Veterinary economic journals from the USA are consistent in their analyses that general practices that readily refer cases are usually the most profitable and are often the least stressful of practices to work in or own.

It has been shown repeatedly that having a general practice veterinarian work at the limits of his/her knowledge with an animal is a recipe for lost time (= lost money), aggravation, and disgruntled clients. It has been reliably shown that readiness to refer correlates well with client satisfaction with the general practice, and this leads to high levels of client retention. As we see too often at VSG, delayed referral or antagonism to referral can lead to the dreaded question "we don't want to go back to our veterinarian, who would you recommend".

At VSG we have voluntarily chosen to work only by referral, and to avoid the practice of general medicine and surgery except in very specific negotiated circumstances where such work is combined with a specialist procedure. We feel that the strength of our relationship with many excellent veterinary professionals means that we do not have to consider doing away with the requirement for referral, as has happened in human medicine.

One of our most consistent and long-term veterinary supporters, Dr Mark Simpson from Auckland Veterinary Services comments;

"In our experience, we find referring our clients to a specialist beneficial to all parties involved.

Patients receive the most advanced health care available, typically at a higher level of care than we are able to provide. This higher level of care is due to the knowledge of the specialists, their access to advanced equipment and because they are seeing these complex cases on a regular basis.

The client is able to obtain the high level of care that they want for their companion. Clients appreciate the offer of referral early in the process. Early referral ensures the shortest possible delay before appropriate treatment is initiated and also avoids repetition of diagnostic tests or procedures, which can result in a considerable financial saving to the client.

The referring practice can benefit through reduced stress levels to all parties, apart from the specialist. Clients that we have previously referred, tend to come back with more confidence in us. This increased confidence leads to better compliance with our future recommendations and improves our practice turnover. Referral also reduces investment in expensive equipment and training that may not be financially profitable. The referring vet also becomes more educated, through communication with the specialist, and may be able to deal with a future case without referral.

To me, referral is a positive experience for all those involved."

VSG in the Community

All of the VSG partners are parents, and in the current social environment of rapid change are fully aware of the challenges facing both the parents of teenagers and the teens themselves. VSG is the major sponsor of the Pathways to Manhood Program, an annual camp for men and their teenage sons, nephews or guardian children. Up to 25 boys and their supporting adult attend the camp for 5 days in the April school holidays. As well as providing physical adventures, Pathways challenges all the participants on an intellectual and emotional level.

Teenage boys are feeling their way in the world and their relationship with the adult males in their lives can be difficult. By providing a memorable opportunity for emotional growth the program has been shown to improve parent-teen communication for long periods after the end of the camp.

Program director Rex McCann comments; "Pathways is an inner and outer adventure that strengthens boys' identity as positive healthy young men, and supports them through the most dangerous transition of their lives. We create the circumstances for a boy to value his unique contribution, reach for his potential and awaken his sense of belonging to a wider community."

VSG sponsorship of the Pathways program is approaching $15,000 and is ongoing, and we are proud to be associated with such an innovative initiative. If anyone else is interested in contributing, contact Mark at medicine@vsg.co.nz for more information.

Peripheral Nerve Sheath Tumours - by Chris Warman

Peripheral nerve sheath tumours (PNST), account for approximately one quarter of tumours of the nervous system. Whilst these tumours can occur anywhere in the peripheral nerves, they have a predilection for both the brachial and the lumbosacral plexuses. The antemortem diagnosis of these tumours can be extremely challenging. Frequently the onset of clinical signs associated with these tumours is insidious and the initial diagnostic process has often been directed at looking for an orthopedic entity as the cause of a persistent lameness.

With time, more features of a neurogenic disease entity become apparent. Muscle atrophy, paraparesis, lower motor neuron signs in the affected limb, possible upper motor neuron signs in the hindlimbs, (if there is invasion of the spinal canal from a brachial plexus lesion), lower motor neuron signs involving the tail, and occasionally urinary or fecal incontinence are some of the signalments. Pain, either of the plexus or the spine, is a consistent feature in the majority of these patients.

The imaging diagnosis of these lesions can be extremely challenging. Plain and contrast radiology, electromyography and surgical exploration of the site of a suspected lesion, were the traditional methodologies of diagnostic investigation. In more recent times, ultrasonography, computed tomography and magnetic resonance imaging have increased the detection rate of these lesions. Radiographic findings associated with peripheral nerve sheath tumours are typically minimal. The most consistent radiographic finding, if the tumour invades the spinal canal, is widening of the foramina. Occasionally significant bone destruction of the vertebra may be identified. In my experience, vertebral body destruction is more likely to occur with tumours in the lumbosacral plexus rather than the brachial plexus. Myelography is only useful if the tumour has invaded the spinal canal in the brachial plexus region. The most common finding on myelography is a unilateral mass effect revealing an extramedullary-intradural lesion.

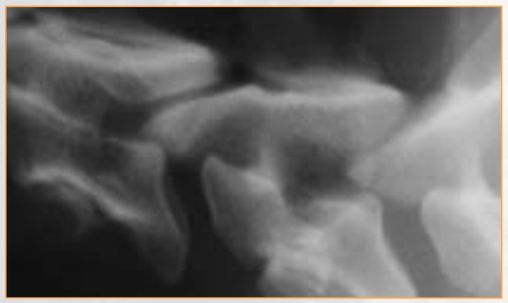


Figure 1. *Cervical spine revealing foraminal widening associated with a brachial plexus nerve sheath tumour.*

Occasionally PNSTs can be detected with ultrasound. The lesions vary in size and shape. Nerve sheath tumours tend to reveal either a homogeneous or heterogeneous hypoechoic echogenicity. Ultrasonography can be extremely useful in assisting the clinician in obtaining a biopsy from the lesion. An excellent understanding of the sonographic anatomy of the region of interest is necessary in order to make the most of this imaging modality. Imaging of the cervical region can be challenging for the novice.

Computed tomography is extremely useful in identifying many peripheral nerve sheath tumours. The transverse axial images allow the clinician to readily make comparisons with the contralateral side of the patient. Historically, small tumours, i.e. those less than 1 cm diameter, can be difficult to identify without contrast. The use of contrast is likely to increase the detection rate of smaller lesions. In my experience, the use of multislice computed tomography, with multiplanar reconstructions and contrast, has improved the ability to confirm the presence of a peripheral nerve sheath tumour. In excess of 80% of PNSTs reveal contrast enhancement. The contrast enhancement may be inhomogeneous. Approximately 50% of tumours reveal peripheral or rim enhancement.

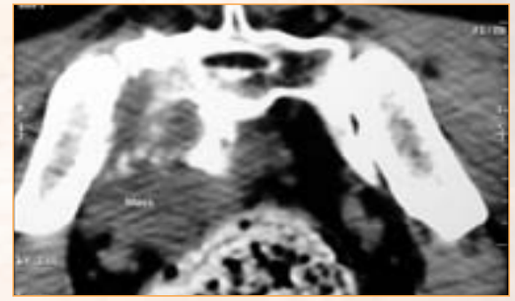


Figure 2. *Right-sided lumbosacral plexus mass, revealing some contrast enhancement and destruction of the right sacrum.*

Magnetic resonance imaging is undoubtedly the gold standard in imaging of the nervous system. Magnetic resonance imaging has superior contrast resolution and is significantly more sensitive at detecting peripheral nerve sheath tumours in humans. Both T2 weighted and pre-and postcontrast T1-weighted images through the region of interest are necessary for the detection of these mass lesions. T2 weighted Inversion Recovery (STIR) images are favored for the detection of small tumours, as often smaller mass lesions may have similar intensity to fat on the standard T2 weighted images. Recent recommendations suggest using a large field of view in the initial scout images and then optimizing resolution with a small field of view once the lesion has been detected.

When utilizing either magnetic resonance imaging or computed tomography, it is extremely important to position the patient symmetrically, so that it is possible to readily make comparisons with the contralateral side.

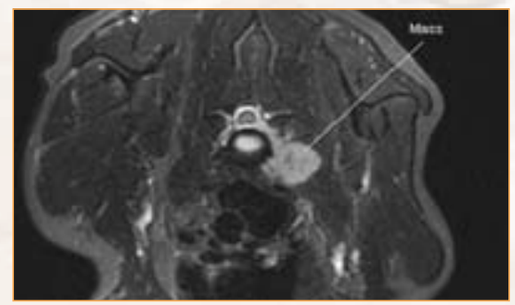


Figure 3. *T2 weighted STIR image of a nodular mass in the left brachial plexus with enlargement of the associated proximal nerve sheath.*

Enteral Feeding Options for Cats - by Mike Coleman

Some cats are fussy eaters at the best of times. When cats are ill it is common for them to not eat at all. Maintaining nutrition through illness results in reduced metabolic derangements, improved recovery times, maintenance of body weight and avoids complications of not eating. One of the big complications we want to avoid in cats is development of hepatic lipidosis. This occurs more commonly in overweight cats that stop eating (although not all are overweight!). Fatty acid mobilisation to the liver causes an obstructive hepatopathy. This, combined with inadequate protein intake contributes to this debilitating disease. Enteral feeding (placing food into the gastrointestinal tract) is preferable to parenteral (intravenous) feeding when a cat has sufficient gastrointestinal function to be able to digest and absorb nutrients. Various techniques are available for enteral feeding. A brief description of some of these follows.

Naso-oesophageal Tubes

These are indicated for short term nutritional support (less than 5-10 days) for cats that have a normal nasal cavity, pharynx, oesophagus and stomach. The tip of the tube is located in the oesophagus, not the stomach (around the eighth rib). This helps prevent reflux oesophagitis. The tube is either glued or sutured in place using a tape tag. Cats need an Elizabethan collar to prevent self-removal! Correct placement of the tube is confirmed by instillation of 3-5 mLs of sterile saline (no coughing expected) or by thoracic radiographs. The main disadvantages are the short term nature and the narrow width of the tube. Also some cats do not tolerate these tubes and will continually try to remove them.

Oesophagostomy Tubes

These are placed under general anaesthetic and do not require any specialised equipment. They are suitable for long term feeding. A larger tube can be placed compared with naso-oesophageal tubes. The main complication is inflammation around the stoma site.

PEG Tubes

PEG (percutaneous endoscopic gastrostomy) tubes are used frequently at Veterinary Specialist Group to provide long term nutritional support whenever cats are not eating. This technique was ideal for Stimpy Hill as he had inflammatory changes in his oral cavity, pharynx and the cranial 2/3rds of his oesophagus. PEG tubes can be used for months if necessary. Complications of placement are rare. The cat is anaesthetised and placed in right lateral recumbency. The endoscope is used to insufflate the stomach with air. An 18 gauge needle is pushed through the abdominal wall into the stomach and nylon line placed through it. The nylon is visualised and a biopsy instrument placed through the endoscope is used to retrieve the line via the oral cavity. The PEG tube is attached to the nylon and is pulled down through the oesophagus into the stomach and then through the stomach and abdominal wall. Flanges on either side of the tube help hold it in place. Additionally the tube is sutured on the skin surface and covered with a bandage.

Enterostomy Tubes

These are indicated in patients that cannot tolerate food into the stomach or proximal duodenum. They are more commonly placed surgically. Recently an endoscopic technique has been described.

Staff Focus: - Carla Dawson

Carla is part of the veterinary nursing team, working in the radiology department.

How long have you worked at VSG?
6 years - 5 with surgery & 1 with radiology.

What do you enjoy about working at VSG?
The team. I work with a really great bunch of people.

What do you enjoy doing on the weekends?
Mountain biking, canoe polo, reading - just started training for adventure racing.

Tell me about your family
Which one? I'm lucky to be part of 4.

What inspired you to become a veterinary nurse?
I was interested in the medical side of things and frankly, cleaning up after people scared me!

How many animals do you have at home?
2 kids (2 cats) - they have me, rather than the former.

What is your favourite meal?
Like I said, I'm training. I no longer dream of food. I can tell you that tuna has the taste, look and feel of cardboard pulp.

And your favourite TV programme?
House!

What is you favourite holiday destination?
Wherever the sun is!

If you won Lotto tomorrow, what would you spend the money on?
Follow the sun for a little bit and then establish a foster home for less fortunate kids.

Carla Dawson

Spring Cleaning Nightmare for Stimpy - by Jane Finlayson, Backbone Marketing

Stimpy Hill is a 14 year old, male tabby cat who was a gift to Shona Hill from her children. He's always been an overtly affectionate cat who provides lots of laughs for Shona and her family.

Stimpy shares his home with the feline matriarch Miffy in Remuera, Auckland. Late last year Shona got a distressing call from her 18 year old daughter to say that Stimpy was convulsing and in extreme pain. Shona met them at Remuera Veterinary Medical Centre where their vet Stephanie Shaw administered supportive therapy.

"When Stimpy arrived at the clinic he was seizuring and in respiratory distress. I wondered at the time if this was to be my first case of slug bait poisoning in a cat. On physical examination, I found Stimpy's mouth to be ulcerated and swollen, which ruled out slug bait poison, but indicated some other form of toxic insult" says Stephanie.

Stimpy was given medications to stabilize his condition as Stephanie and Shona tried to ascertain the possible scenarios that lead to Stimpy's distress. Stimpy was transferred to the after hours vets for overnight care, his life was in the balance.

Stimpy did survive the night however his condition had not improved. He had not had any seizures and his vital signs were fairly normal, therefore it was unlikely that slug bait poisoning had occurred.

It was when Shona went home that day that she noticed a commercial moss and mold remover container in the garage and remembered that her father had been cleaning her decks for her the previous day. It transpired that Stimpy had lain on the decks shortly after the treatment went on and then groomed himself to remove the offending chemical.

Even with the pain and swelling under control this would take some time to heal and Stimpy would not be able to eat or drink for some time. Given that Stimpy was a solid cat, Stephanie had concerns that without nourishment he would go into liver failure. The only option to keep him alive was to feed him through a tube, but Stephanie suspected damage to his throat so it would need to go straight into his stomach - a procedure that Stephanie preferred to leave to the specialists who would be able to use endoscopy for placement and provide the 24 hour nursing care needed if he was to survive.

Shona, under pressure from her children to save him, agreed that it was worth a try and took Stimpy to see Mike Coleman at VSG. Endoscopic examination of the oesophagus and stomach revealed extensive oesophageal inflammation. A PEG feeding tube and supportive therapies were put into place and Stimpy stayed in VSG with overnight nursing care for 8 days. "The VSG staff were all excellent, not only to Stimpy who was thoroughly spoiled but also to me and my children."

Stimpy is home now and is doing much better. Looking back, Shona sometimes questions the decision to save him as it was a real ordeal for Stimpy and he showed signs of stress for quite a period afterwards. "He went through an awful lot of trauma and recovery has been slow - however recovery has been complete and we are delighted that he is still with us. It was a difficult time and the investment in both time and money was significant - however, how can you put a price on your pet? We are lucky to have him still in our lives and are making the most of it."

Total Hip Replacement - The Long and Short of it - by Alex Walker

In 1990 total hip replacement (THR) was first offered on a true commercial basis to New Zealand clients. The technique had been used successfully in humans since 1951 and in dogs since 1976. The BioMedtrix Canine Modular Hip System has been used successfully over this period. The BioMedtrix Hip separates the femoral component into a stem and separate head. This allowed three different head designs that could vary the length of the femoral neck. Initially femoral implant sizes were #5, #6, #7, #8 for the femoral stem and only dogs over 20-23kg were able to be operated on because of implant size.

Over the last few years smaller and larger protheses have allowed implantation into small and giant dogs. Femoral stems sizes #2 through to #10 are now available but require special instrumentation kits for implantation.

Recently we have had the opportunity to operate on, what I believe is, the smallest dog to receive a total hip replacement in NZ. This was Fergus, a Kerry Blue terrier weighing 16kg. Fergus suffered from unilateral left hip dysplasia with secondary DJD. The hip was painful and causing a marked lameness. Pain was present on extension and abduction of the left hip. The rest of the orthopaedic examination was normal.

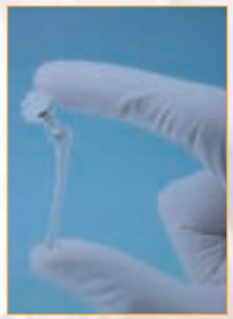


Figure 1.

After consultation with BioMedtrix in New Jersey, we imported a "loaner kit" for instrumentation to implant a very small hip. Fergus had his surgery on the 15th of November 2006 and has been doing very well since that time. He had a #4 femoral stem with an 18mm acetabular cup.

At the other end of the scale, we implanted a new hip into a 65kg young Newfoundland called Murphy. Murphy had bilateral hip dysplasia with severe DJD. He was referred for possible triple pelvic osteotomy but the degree of subluxation progressed rapidly to the point where TPO was not indicated.

For this procedure we again imported a special "large" kit to implant a #9 femoral stem into the left hip.

Most of our cases are dogs between 21 - 50kg which can be operated with the standard kit. The procedure has a 90% success rate with 1 in 10 suffering complications.

A recent study by a very experienced US surgeon showed an overall complication rate of 15.7% (infection 1.25%, sciatic neuropraxia 2.5%, luxation 4.5%, femoral fracture 2.5%, aseptic loosening 2.25%, patellar luxations 1.25%, incision granulomas 1.25% and pulmonary thromboembolism 0.2%). This corresponds well with the human situation where THR is rated as the most consistently successful surgery performed.

Our patients greatly benefit from this procedure but at a cost of approx $5500- $6500 (depending on implant), affordability can be a major hurdle.

Figure 2. *Fergus Ross*

Figure 3. *Murphy Emery*

No More Hopping For These Hip Dogs - by Jane Finlayson, Backbone Marketing

Murphy

The Emery family of Albany love taking regular trips to their beach house at Ngunguru and whenever they go their two Newfoundlands Bertie and Murphy come too. Gill, Keith and their three children enjoy taking the dogs for walks on the beach but late last year they became concerned about Murphy.

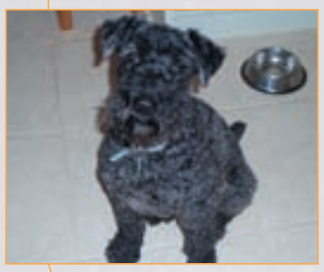
Murphy has always been a boisterous pup yet by the time he was 6 months old he was showing signs of lameness in the hips. Daniel Lamont, his vet at Albany Veterinary Centre was becoming increasingly concerned. "Murphy had been lame from an early age and it was progressively getting worse. I did some x-rays that showed very poor hip conformation on both sides. It was either surgery or long term pain relief."

Daniel spoke with the Emerys and explained that a total hip replacement by specialist surgeons would be the best option for Murphy given his age and size. The Emerys agreed "Murphy is such a young dog and very special so we really only considered what was best for him and we haven't been disappointed."

A consultation with VSG's Richard Jerram was arranged and a special kit for larger dogs was imported for Murphy. The surgery proceeded and everyone was delighted with how it went. Gill says "The VSG team were fantastic and the whole thing went really well."

Initially Gill was worried about how they would manage Murphy during the recovery period since he is such a big dog. She says they were amazed how quickly he healed and within 10 days he was walking himself outside. "He's now running on the beach and swimming and is much better than he has ever been."

Gill says "We'd definitely recommend VSG to other pet owners in the same boat as us - we have been able to save Murphy from a lot of pain and he now lives a full and active life".



Fergus

Sheena Ross is one of NZ's leading dressage riders with her top horse *Glenbrae Ivanhoe* training at Grand Prix level, so caring for animals is a big part of her busy life. Sheena got her Kerry Blue Terrier pup Fergus when he was only 6 weeks old and he's been her constant companion for 8 years. They spend a lot of time together on Sheena's 10 acre farmlet in Pukekohe where Fergus likes to "help" with the horses.

Last year things began to change and Sheena recalls "Fergus seemed to be slowing down and I thought that age was getting the better of him. He was not himself and one day when he jumped onto the couch he cried out in pain. He was going to the vet anyway to have some growths removed so I thought it would be a good time to find out what was happening."

Colin Hill of Remuera Veterinary Clinic saw Fergus and carried out pelvic x-rays and discovered that Fergus had unilateral left hip dysplasia with secondary DJD. Colin has always been Fergus's vet and felt that an earlier road accident may have contributed to Fergus's condition. He discussed the options with Sheena and referred Fergus to VSG.

Colin says "We refer to VSG a lot as they offer greater diagnostic and treatment ability. We want the best outcomes for our clients and their pets and send a client there almost weekly. They all rave about the level of care that their pets receive. We are fortunate in that many of our clients want the best for their pets and can afford to make the investment. For us it is a great adjunct to our practice."

Sheena was aware of VSG's excellent reputation and had had previous experience with them so she didn't hesitate booking a consultation and took Fergus to see Alex Walker. "Alex explained that Fergus (at 16kg) was too small for the standard hip replacement kit but they could order a special kit for him from New Jersey and that one matched perfectly."

Before anything was done Sheena was given a quote and Fergus was checked completely to ensure that there was nothing else wrong with him before the money was spent. "VSG were superb. I'd give them 10/10. The charge was exactly what they quoted and I also knew that Fergus was otherwise fit so it was worth spending the money".

Fergus is back to his active best and goes everywhere with Sheena and the horses. Colin sums up by saying "Fergus must be doing well as I haven't seen him since the operation but when I spoke to Sheena she was delighted - he's on no medication and is obviously in perfect shape."