



southpaws

SPECIALTY SURGERY FOR ANIMALS

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Why Southpaws Neurosurgery ?

- Southpaws has an **extremely high spinal surgery caseload** with results that set the pace for recovery from disc disease in dogs. We work with primary care clinicians to **make permanent paralysis from acute disc rupture a thing of the past** with rapid recognition, imaging and decompression of the spinal cord.
- Southpaws has developed a procedure for **encephaloscope-assisted surgery** for amelioration of epilepsy in dogs. Encephaloscopy has also been used to increase the effectiveness of **brain tumour removal**, with results approaching or exceeding those seen with radiation therapy. (Klopp 2009)
- Southpaws has invested in a **brand-new 16 slice CT scanner (2014 Toshiba Alexion Advanced)** which allows

scans to be performed at higher resolution in a fraction of the time previously required. A **brand-new digital fluoro unit (2013 GE Brivo)** allows excellent visualisation for myelography and minimally invasive placement of internal fixation devices.

- We have **in-house physiotherapy** with underwater treadmill which is run by one of the **most highly regarded physiotherapists in Australia**.
- Southpaws surgeons are **available 24 hours a day 7 days a week** for assessment and surgical treatment of dogs with neurological emergencies.

We are so confident with surgical treatment of thoracolumbar disc disease that we offer a guarantee that if clinical signs have been present for less than 6 days and deep pain sensation is intact, a full refund will be given if the dog is not walking unassisted within 30 days.

Why Southpaws Complete Cancer Care?

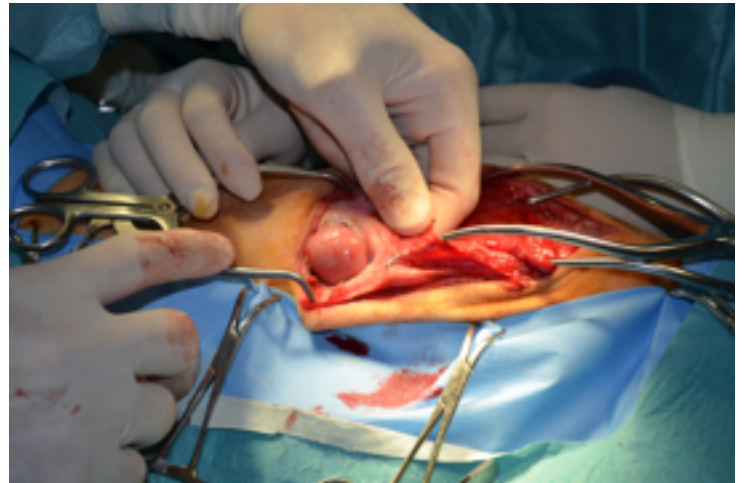
- Compassion - Charles was voted the "Most Devoted Vet in Australia" by Master Dog Breeders Association in 2010, and was nominated the following year.
- Experience - We have operated on over 7,000 cancer patients with outstanding results for local control.
- Outcomes - We have published the best results ever reported for canine soft tissue sarcomas and feline injection site sarcomas. We currently have manuscripts in preparation reporting some of the highest survival times ever published for canine nasal adenocarcinoma and canine osteosarcoma.
- Technology - new CT, new Fluoroscopy, new human anaesthetic machines, state-of-the-art monitoring and the only veterinary radiation therapy for animals in Victoria and one of only two RT units for animals in Australia.
- Aftercare - high nurse-to-patient ratios with no primary access emergency service - this means that nurses are completely dedicated to patient care and are not triaging outside accessions.
- Medical oncology service - one of the few in Australia. Department Head Dr Raelene Wouda is our professional interest practitioner in oncology and internal medicine. Raelene is double residency-trained in oncology and internal medicine and did a fellowship in transfusion medicine.
- Innovation: 5 US patents for medical devices, include the endoprosthesis system which is used for limb salvage surgery in dogs all over the world.
- Qualifications - Charles and James Simcock are co-owners of Southpaws. Both are registered specialists in small animal surgery in Victoria and Charles is one of the few ACVS Founding Fathers of Surgical Oncology.

Platipump - Fast, Effective and Lower Cost Chemotherapy

Platipump is a single dose chemotherapy protocol developed by Southpaws, delivered from a harness mounted infusion pump, carried on the patient, administered automatically over a four day period. With over one hundred patients treated, results are as good if not better than conventional chemotherapy, with potentially fewer side effects and at a lower costs. The Platipump protocol is delivered in days, not months. New publications in progress include: Platipump and amputation in 40 cases, palliative radiation and platipump in 17 cases, Nasal radiation and surgery - comparison with and without Platipump. For a diagnosis of osteosarcoma, we can complete staging and surgery on the same day, and finish the entire treatment only 5 days later with almost no side effects and results that are as good as conventional chemotherapy, at a fraction of the cost. Think of the ratio between the survival time and the treatment time (quality survival time) - conventional chemotherapy : 4:1 (duration = 2-3 months), Platipump: 40:1 (duration = 5 days).

Salivary Mucocoele: - the affected gland must be removed

Solomon, a one year old border collie presented to the primary care practice with a soft fluctuant swelling in the ventral cervical region with a sublingual component. An aspirate was performed and a red-tinged ropey extremely viscous fluid was extracted. A diagnosis of a salivary mucocoele was made. Marsupialisation of the ranula (the sublingual portion of the mucocoele) was performed. Clinical signs resolved for a few days, until the stoma sealed over. He was then referred to Southpaws for definitive management. On examination here, Solomon was extremely bright. He had a soft non-painful swelling in the ventral cervical region. Aspiration was repeated and the diagnosis of salivary mucocoele was confirmed. A CT was performed (for our interest at no cost to the client). This showed that the mucocoele was in contact with the sublingual portion of the mandibular salivary gland.



Sialocoele surgery with mandibular salivary gland exposed.

Surgical excision was performed. An incision was made from the mid body of the mandible to just over the monostomatic portion of the left mandibular salivary gland. The duct was passed under the digastricus muscle during resection. The duct was ligated and transected at the level of the lingual nerve. A closed suction Jackson Pratt drain was placed in the cavity. Solomon was discharged the following day. Salivary mucocoeles are lined by inflammatory connective tissue and are not secretory. Therefore, they are not really cysts and the lining does not need to be removed. The mandibular/sublingual salivary gland complex is most commonly affected, but any of the salivary glands can be involved. The presenting clinical signs are related to location of accumulation of saliva. Zygomatic salivary gland leakage causes exophthalmos. Pharyngeal mucocoeles cause dyspnoea. Mandibular and sublingual salivary gland leakages cause either a ranula or a ventral cervical swelling.

Drainage procedures are rarely effective. Complete removal of the affected gland is required and is associated with a recurrence rate of about 5%.

Checklist for success - managing cutaneous and subcutaneous tumours in dogs

On 6 July 2013, Air Asiana Flight 214 crashed on approach to San Francisco. 3 passengers were killed. The causes of the crash were suggested to be two main factors: failure to follow protocol for airport approach and a culture in the cockpit where the authority was not to be questioned by subordinates and admitting of mistakes was seen as a weakness.

This was one of the few accidents of a commercial airliner in North America to involve loss of human life since 2001 (12 years). There are an average of 27,000 flights per day in the US. In the preceding 12 years, there had been about 123 MILLION commercial flights with a total loss of life of 153 people.

During that same 12 year period it is estimated that between 600,000 and 1.2 million people died in the US due to avoidable medical errors. That is equivalent to about 2,000 747's crashing with NO SURVIVORS. What is responsible for the increase in safety of the airline industry compared with the healthcare system? A key component of this change was the development and implementation of the checklist. The checklist greatly increased compliance to correct procedures and overcame most cultural issues in the cockpit at the same time - by positioning the checklist as the controlling protocol.

The aviation industry has introduced a system of checklists which makes it the safest form of transport per km FULL STOP. There has also been an active effort to change the culture in the cockpit to encourage subordinates to feel safe to comment if something is amiss. More junior staff can use the checklist to calmly and impassively point out when steps are missed or incomplete. The checklist helps to overcome the failings of hierarchy.

Why are pilots more willing to take on checklists and to adapt a more communicative culture? Because the pilot has more lose, on a personal level. The doctor does not go down with the ship.

The Checklist Checklist

- The checklist has a **clear purpose**
- It is short enough to be **practical**
- Each component has a **major consequence** if an error is made
- The checklist is sequential and all works stops **until the preceding step is complete**
- It includes items that are **easy to forget**
- It must be **applied every time**

Checklists save lives. Checklists provide a kind of cognitive net. They catch mental flaws inherent in all of us; flaws of memory, attention and thoroughness. They ensure consistency of care.

A Checklist Approach to Canine Tumours

How many of you have ever said any of these things to a client, to a colleague or to yourself?

"I thought it was a lipoma"

"I shelled it out - turns out it was a tumour"

"I got out as much as I could"

"We got dirty margins - lets hope it doesn't recur"

These statements should signal to you that an appropriate checklist was not followed.

Definitions:

Recurrence implies local return of the tumour and usually implies that tumour cells were left behind in the vicinity of the surgery.

Metastasis implies systemic spread of the tumour and implies that tumour cells have travelled via blood or lymphatic vessels to other parts of the body.

Checklist Steps :

- **Make a diagnosis** - using FNA or preferably incisional biopsy. Given the variability in behaviour based on histology and grade, knowing one's enemy is critical.
- **Literature review** (no one can know everything about every tumour) - Species, breed, gender and anatomic location variations in tumour behaviour, determine if surgery is appropriate, margins required for a cure, tendency to metastasise, probable location of metastasis, significance of paraneoplastic syndromes, response to chemotherapy, response of incompletely excised tumours to radiation therapy or chemotherapy.
- **Discuss** with the owner - results and options
- **Complete staging** (local and systemic extent of the tumour) - Assessment of the size and depth of the tumour including attachment to surrounding structures. This may require radiographs, ultrasound or CT scan. Lymph node assessment and aspiration, thoracic radiographs or CT scan. Bloods are usually a good idea because these patients are often middle aged or older.
- **Discuss** with the owner - results and options based on diagnosis, literature review and staging.

■ **Curative intent surgery** - if you shell out the tumour, or remove the tumour in bits - you have failed and the tumour will almost certainly return. Wide local excision must be performed in almost all cases. The extent of surgery is dictated by the literature review, but 2-3 cm margins of normal tissue is a good rule of thumb for any kind of malignant tumour.

■ **Mark and assess surgical margins** Completeness of surgical margins is predictive of recurrence for many tumours. The surgeon's assessed completeness of surgical margins is also highly predictive of local recurrence.

■ **Discuss** with the owner - results and options

■ **If margins are incomplete**, either histologically or grossly, tumour recurrence is likely. There are options which are generally very effective in preventing recurrence. With soft tissue sarcomas, about 75% of incompletely excised tumours will recur. If the entire scar is excised with a second surgery, the recurrence rate is about 5% in 5 years. Radiation therapy of the scar and surrounding tissue is associated with a local recurrence rate of about 20% in 5 years. Metronomic chemotherapy is similar to radiation therapy in its ability to prevent local recurrence. Results with mast cell tumours are probably similar.

■ **Chemotherapy** if indicated based on a literature review.

We have recently published results of checklist-based cancer management in major peer reviewed veterinary journals on canine soft tissue sarcomas and on feline injection site sarcomas. We have several other articles on the way.

Canine soft tissue sarcomas

Other published studies of canine soft tissue sarcomas of all grades have reported recurrence rates 37%-80%. With application of our soft tissue sarcoma checklist in our recently published study of 31 dogs, an initial recurrence rate of 3% was reported, and with revision, all dogs were tumour free at the end of the study (median followup time of 3 years) with NO dogs dying of tumour related causes.

[J Am Vet Med Assoc.](#) 2014 Jan 15; 244(2):187-194 **Second intention healing after wide local excision of soft tissue sarcomas in the distal aspects of the limbs in dogs: 31 cases (2005–2012)** Prpich CY, Santamaria AC, Simcock JO, Wong HK, Nimmo JS, Kuntz CA.

Feline injection-site sarcomas

In other studies of cats with injection site sarcomas, with marginal excision, 50% of tumours have recurred within 60 days. With wide local excision, 50% of tumours were back within 8 months. With excision followed by radiation therapy, 50% of cats had recurrence within 2 years. With application of our injection site sarcoma checklist, in our recently published study of 91 cats having had aggressive surgery alone, only 14% of cats had recurrence in 5 years.

[J Am Vet Med Assoc.](#) 2011 Jul 1;239(1):97-106. **Radical excision with five-centimeter margins for treatment of feline injection-site sarcomas: 91 cases (1998-2002).** Phelp's HA, Kuntz CA, Milner RJ, Powers BE, Bacon NJ.

Repeatable results with the checklist

By consistent application of evidence based recommendations in the form of a checklist, results which are far superior to those published elsewhere can be achieved. This checklist also ensures that clients are communicated with and have an understanding of treatment decisions along the way. This has all but prevented dissatisfaction on the part of the owners of pets with cancer at our hospital. We are so confident in the checklist that we offer a guarantee of local control in certain tumours which have predictable local behaviour (soft tissue sarcomas and mast cell tumours). Obviously checklists are not going to prevent systemic metastasis, but all owners are aware of these risks prior to proceeding with cancer treatment.

In Conclusion - Lessons Learned

A cat presented to me several years ago with a histological diagnosis of granulation tissue on a back leg. It was removed with narrow margins. The final biopsy result indicated injection site sarcoma. The owners were contacted and the leg was amputated. Due to an oversight on our part, no further staging was performed. 2 weeks later, the same cat presented in respiratory distress. Thoracic radiographs revealed extensive metastasis of the tumour. He was euthanised because of a grim prognosis. This cat suffered through an unnecessary amputation because we did not follow the checklist. The owner was given a full-refund of all fees collected. This further cemented in our minds the need for the use of checklists in every case.

The checklist is not going to eliminate unfavourable outcomes. It will, however, assure that all possible and appropriate steps towards a successful outcomes are taken along the way. A checklist is like riding a pushbike with a helmet. The helmet doesn't save your life every time you go for a ride, but in the event of an accident, you will be very glad it was there. We highly recommend you take a checklist-based approach to as many different types of cases as you can. Make your own checklists and we are happy to help you along the way. We also strongly advocate a culture of safety where any staff member can feel comfortable in enforcing the checklist and in raising concerns at any point along the way.

At Southpaws, clients have nothing to lose. Surgical consults are ALWAYS free of charge. Clients can discuss options with a surgeon with no obligation.