SURGICAL COMPLICATIONS IN CANCER PATIENTS

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INTRODUCTION
Whether you are pushing the limits of wide surgical resection or removing a lipoma, at some point you will experience complications following surgery. Complications may result in owner unhappiness or emotional stress due to guilt about cancer treatment, or delay in other recommended cancer treatments like chemotherapy or radiation therapy. There are many ways we can try to prevent complications arise and treat patients to speed resolution of complications.

INFORMED CONSENT
The possible complications resulting from performing a procedure should be discussed with the owner prior to surgery. Reporting the relative risk/frequency of these complications is important to allow the owner to weigh up whether they want to pursue surgery with their pet.

WOUND COMPLICATIONS
There are several types of common wound complications that we may see with general cancer surgery: seroma formation, wound dehiscence and wound infection.

Seroma
Seroma or pockets of wound fluid commonly arise when there is resultant dead space following tumor removal. It may not be possible to reduce the dead space through apposition of the adjacent tissues performing wound closure. Drains are less commonly placed in cancer surgery due to concern about seeding of cancer cells to tissues distant from the incision. Often seromas are mild but may be large and difficult to resolve when involving areas of high motion or a large dependent area. Post-operative bandage placement can help minimize dead space and reduce the chance of fluid accumulation. Pre-emptive warm-packing may help to treat local inflammation of the wound and reduce a seroma.

Wound dehiscence
Wound dehiscence (figure 1) may arise due to multiple factors including tension, wound infection, increased patient activity, self trauma, wound in high motion area, impaired healing through chemotherapy or systemic disease. Some of these factors can be surmised prior to surgery and used to educate the client about possible risks associated with the surgery. Good client education about possible risks can help increase client investment in success of the procedure and the resulting compliance for instructions such as exercise restriction and use of an e-collar. It is crucially important to plan the surgery so the incision is aligned with tension lines to reduce tension on the wound. In addition a multi-layer closure is important to prevent wound dehiscence. Tension relieving techniques such as skin stretching with pre or post operatively placed velcro straps can be employed to utilize the skin quality of stress relaxation. Surgery may be able to be timed or medications temporarily discontinued to minimize the effect on wound healing. Treatment option for wound dehiscence will need to account for the factors that caused the original wound dehiscence otherwise there may be a risk of a second failure.

Figure 1: Acute wound dehiscence two days following removal of a soft tissue sarcoma with wide margins.
Wound infection
Wound infection may arise following surgery due to multiple factors: patient self trauma, concurrent immunosuppression, surgical site proximity to anus etc. Attention to factors that may act to prevent wound infection can include clipping a wide area for surgery for aseptic preparation, application of a sterile dressing until the wound fibrin seal has formed, good hand hygiene when evaluating the surgical wound and good advice to owners for prevention of self trauma. Early recognition of wound infection is important to minimize the morbidity in cancer patients. Owners should be advised of signs of infection to watch for when the animal is discharged home.

Other complications can arise specific to the procedure that is being performed and can be mild, moderate or severe. Severe complications are classed as complications necessitating further surgical therapy or that are life threatening. When a complication is recognized it is important to facilitate evaluation as soon as possible to assess and initiate treatment for the problem. Sometime further therapy is planned following healing from surgery like radiation therapy. Often when faced with a problem in these patients we need to consider what will give the fastest and safest resolution of this problem to allow the patient to start treatment. Sometimes more aggressive management is chosen to facilitate this. During treatment for the complication it is important to carefully explain to the owner why the complication was though to have occurred and what treatment is recommended to resolve the complication. The focus should shift to improving the patient’s quality of life and helping to resolve the complication to allow return to function or to start other cancer treatment.