ProFormance CANINE SURGICAL CENTER

Cancer Surgery

The Goal of Cancer Surgery is to remove all of the tumor cells as well as a "margin" of normal tissue around it while maintaining function and cosmesis.

Tumor Diagnosis is important to determine how the tumor will need to be removed and to give some idea of prognosis. The easiest and least invasive diagnostic test is a Fine Needle Aspirate (FNA). With the pet awake, a small gauge needle is used to suck cells from the tumor and squirt them on a microscope slide. This method is about 60% diagnostic. A core biopsy requires brief anesthesia and uses a spring loaded sampling device to take a 14-18 gauge core of tissue to be examined microscopically. With more cells, the diagnostic accuracy increases to about 80%. And of course, if it's important enough to cut out, it's important enough to send the entire tumor for histopathology. Histopathology gives nearly a 100% accuracy.

Staging is determining how far a tumor has spread in the body. This is done with FNAs of regional lymph nodes or organs like the spleen or liver, regional radiographs, radiographic metastasis (met) check of the chest, ultrasounds of the chest or abdomen and CT scans. Staging can be done before surgery, especially if it will determine whether or not you want to proceed with surgery. Or staging can be done after surgery to plan adjunctive therapy like chemo or radiation therapy.

Surgical Margins are important because they serve as a barrier between normal and abnormal cells. Removing the entire tumor with a clean margin helps ensure that all of the abnormal cells "and then some" have been removed. If some tumor cells remain at the surgery site we refer to this as "dirty margins" or an incomplete resection. Achieving a complete surgical excision with margins provides the best chance of achieving a "surgical cure." The margin width required to achieve a surgical cure varies depending on the tumor type. As a general rule, more aggressive tumors require wider margins.

Dr. Huss adapted an innovative system for marking and measuring the margins around tumors over 20 years ago (Figure 1). Our system utilizes a multi-color painting system to correctly orient and evaluate the edges of the tumor tissue sample. This added information helps us to better formulate a prognosis and treatment plan for your pet.

Sometimes the size or location of the tumor means we can not get clean margins. Our goal at that point is to get to a microscopic level of resection and then continue treatment with adjuvant therapy.

Keep It Simple is our surgical philosophy. We learned the best way to get our cancer patients quickly healed with the least complications is to keep the surgery simple whenever possible. The minimal surgery necessary to remove the tumor and get the resulting wound closed doesn't require a lot of fancy flaps or tissue manipulation. We do not use drains that can spread cancer cells. We use large suture under the skin, often with button stents (Figure 2), that relieves tension on the wound and decreases fluid pockets under the incision.

What To Expect when your pet comes home. We will explain the incision that will be made and how much hair will be shaved, but it often surprises people that the incision is larger than they expected with a large shaved area. This is necessary to get the best margins and proper tissue closure. The shave is to keep the wound sterile during surgery. The incision is often swollen and lumpy, but this will generally shrink to normal within a few weeks.

The first night in the hospital your pet will be on IV fluids and injectable narcotics. They should be comfortable on the drugs we send them home with the day after surgery.

The Elizabethan collar (cone) is imperative to be worn **AT ALL TIMES** after surgery. Patients can destroy a surgical closure if they can get to it. This is especially a problem with cancer surgery since the incision can be tight and may not be able to be reconstructed with a second surgical repair. This would require open wound treatment which can dramatically increase healing time and time to start chemo or radiation.

Will Surgery Be Enough to cure my pet's cancer?

A surgical cure is always our objective with any tumor. We need to know the type of cancer, where it is located, whether we have clean margins and whether the tumor has spread to other parts of the body. Our objective is to get the best margin feasible with surgery and set the pet up to heal as quickly as possible so further treatment with chemo and/or radiation can be started as soon as possible. We will refer you to an Oncologist for staging and adjunct therapy after we have the histopathology results a few days after surgery. Occasionally we may have dirty margins. The tumor painting system we use allows the pathologist to guide us to the area that needs more surgical resection. Generally, a "scar revision" would then be performed to remove more tissue.

What If The Tumor Is Not Surgically Resectable?

Some tumors are too large or in a location that is not amenable to surgical removal. We do not "debulk" tumors if there is not a viable way to close them. We can often remove even advance tumors to a microscopic level; but this is only recommended if you plan to immediately use adjunctive treatments to kill the microscopic cells. If the tumor is not surgically resectable we will recommend an oncologist to discuss adjunctive treatments to try to shrink the tumor.

Definitions:

Benign: Tumors that grown in one place and do not spread or invade other tissue.

Cancer: Malignant tumor or mass

Malignant: Tumors that infiltrate or spread to other parts of the body. Cancerous.

Metastasize: Tumors that spread to other parts of the body; commonly lymph nodes, lungs, spleen, liver, or bone.

Tumor: Abnormal lump, mass or group of cells.

Tumor Free Interval: We normally talk about tumor free intervals, rather than a cure. When you have not had a tumor come back for a period of time, it can be called cured. This varies for different types of tumors in different species.

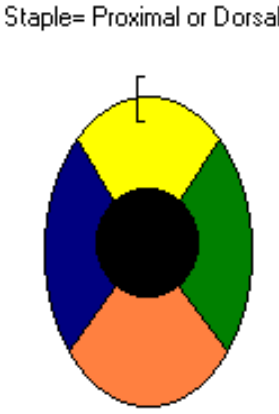
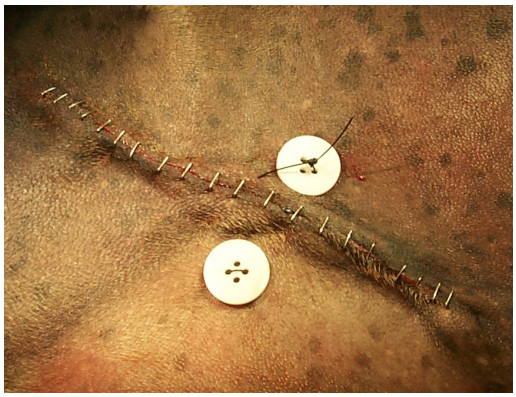


Figure 1
Pathology tumor painting key. The tumor edges are painted the corresponding colors before being sent to the lab. Under the microscope, the pathologist can measure the distance between the edge of the tumor cells and the painted cut edge. This will be reported as the margin.

Figure 2
A pair of button stents placed across a tight incision over the chest.



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