

Lumps and Bumps

As pets age, many will develop masses, commonly referred to as “lumps” or “bumps”. Those underneath the skin (subcutaneous or “SQ”) or on the skin will often first be detected when you are petting your dog or cat. Those deeper in the body, for instance in the abdominal or oral cavities, may be noticed by your veterinarian during your pet’s annual or semi-annual physical examination. Some masses cannot be detected without special imaging, such as x-rays, ultrasound, CT scan or MRI.

Determining if a mass is benign or malignant:

Many of these masses are completely benign; in fact, most dogs and cats will develop a benign mass or two as they age. However, some are cancerous or “malignant”. Unlike malignant masses, benign masses do not invade local tissue or spread to other areas of the body.

Traits of a benign mass:

- Slow-growing
- Soft
- Freely-moveable (skin and SQ masses only)
- Surface is relatively smooth and is not broken, inflamed or bleeding
- If SQ, skin on top of the mass looks normal
- If on the skin, skin around the mass looks normal and transition from mass to normal skin is well-defined
- Is not bothering your pet

Traits of a malignant mass:

- Fast-growing
- Firm
- Fixed to muscle underneath the skin (skin and SQ masses only)
- Irregular, ulcerated or bleeding surface
- Difficult to draw a line where the mass ends and normal skin begins (skin masses only)
- Irritating to your pet (some pets are sneaky! Saliva matting or hair loss around the mass indicates that they are bothering at it, even if you have not seen them do this)

CANCER IS A MICROSCOPIC DIAGNOSIS. This means nothing (nothing!) short of a microscope can confirm or rule-out cancer. Based on the characteristics of the mass as noted above, your veterinarian may feel strongly that a mass is benign but he or she cannot be certain that this is the case without microscopic testing.

Microscopic testing: note “cytology” refers to the microscopic examination of individual cells, while “histopathology” refers to the microscopic examination of whole tissues

Fine needle aspirate cytology: contrary to popular assumption, this is not the same thing as a biopsy. This test involves inserting a needle into the mass and moving it around to collect cells. The cells are then reviewed under the microscope to determine what type of mass your pet has, termed “cytology”. The cells will separate from each other during collection, so unlike a biopsy the relationship of cells to each other (termed “tissue architecture”) cannot be evaluated.

If the mass is on the skin or just below it (external), this testing does not require sedation or anesthesia and will leave only a very small hole that you will not notice. If the mass is inside of a body cavity, it may be possible to acquire an aspirate sample with the use of an ultrasound; depending on where the mass is, this may or may not require sedation.

While this test is the least invasive way to determine what your pet’s mass is, it does have shortcomings. This test may fail to diagnose what the mass is, if it is a type of mass that holds on tightly to its cells and does not shed them into the needle. The test

may also be non-representative of the entire mass if the content of the mass is “mixed”, for instance if it contains a mixture of fat, cancer and blood vessels, the needle may only access the fat, or it may access both the fat and the cancer but the cancer does not shed cells well, making the mass falsely look like a benign fatty mass. To reduce the chance of a non-representative sample, the doctors at La Costa Animal Hospital are careful to sample from at least three sites within the mass (more if it is a large mass), but we cannot entirely eliminate this risk. Lastly this test may be very difficult on very small masses, as even a small needle will take up most of the mass!

At La Costa Animal Hospital, the aspirate sample is sent to a board-certified pathologist for review to make sure that nothing is missed. This result will be available in 1-2 business days.

Biopsy and histopathology: a biopsy is a surgical procedure in which the entire mass (excisional biopsy) or a cut section of the mass (incisional biopsy) is sent to a pathologist for preservation, sectioning and microscopic review, termed “histopathology”. Unlike an aspirate, a biopsy does preserve tissue architecture so is more accurate in diagnosing what type of mass your pet has. Furthermore, a biopsy does not require masses to “shed” cells and is very unlikely (incisional biopsy) or impossible (excisional biopsy) to be non-representative of the whole mass. Histopathology results usually take 5-7 days, but may take longer.

Biopsies do, of course, have disadvantages. As they are a surgical procedure, they will need some type of anesthesia. Because of the need for anesthesia and the more involved nature of a biopsy collection, these procedures are more expensive than a fine needle aspirate. Furthermore, review of a histopathology sample is more costly than review of a cytology sample. Your pet will have to wear a lampshade collar after a biopsy, as he or she will have an incision (wound) from this.

- Incisional biopsy: an incisional biopsy involves surgical removal of a portion of the mass and submitting this for histopathology; usually this is performed on an external mass, but there is a technique called a Tru-Cut biopsy that can perform this on an internal mass with the guidance an ultrasound.

Many external masses can be biopsied with only a local anesthetic block (similar to Novocain that your dentist may use on you; your pet will be numb at the surgical site, but otherwise awake), but a Tru-Cut biopsy of an internal mass does usually require full anesthesia.

The advantages of an incisional biopsy are:

- They result in very small wounds, which heal easily and are rarely uncomfortable for your pet
- They are less expensive than an excisional biopsy (far less expensive for an internal mass)

The disadvantage of an incisional biopsy is:

- They do not remove the mass itself: if the mass is uncomfortable to the pet or the biopsy confirms a malignant mass, your pet will then need a second procedure to remove this mass, which will increase overall cost to you.

- Excisional biopsy: an excisional biopsy involves removing the entire mass and submitting it for histopathology. This surgery will also remove a “margin” of normal skin on each side of the mass and deep to the mass. How wide the margins should be depends on the type of mass your pet has, as determined by a previous aspirate cytology test or incisional biopsy; if it is benign, margins can be very narrow (less than 1 millimeter) and the overlying skin may be left in place if the mass is SQ. If it is malignant the recommendation may be 1 centimeter margins, or 3 centimeter margins for a malignancy called a mast cell tumor.

The advantages of an excisional biopsy are:

- If the mass can be completely removed with adequate margins, no second surgery is needed. For some malignancies, this may also be curative, though some may require chemotherapy and/or radiation for a cure.
- If the mass is benign but is bothering your pet, excision will eliminate this discomfort.

The disadvantages of excisional biopsy are:

- Your pet will have a much larger wound than he or she would with an incisional biopsy. For some sites, this may result in slow or complicated healing; masses on the tail often require amputation of the tail to close the wound.
- The wound may be under tension in the case of large wounds in high-tension sites. This increases the risk of wound breakdown after surgery. Strict exercise restriction is critical to reduce the risk of wound breakdown, as well as placement of a head-collar after surgery to prevent self-trauma. Wounds that break down will eventually heal, but this may require weeks of wound therapy including bandaging and special dressings.
- The removal of a mass will leave “dead space” where the mass was; this space can fill with a fluid called “serum,” that leaks from vessels traumatized during surgery. You will see a seroma as a soft swelling around the surgical wound. Careful surgical technique and closure of this dead space with stitches reduces the risk of a seroma, as does icing and exercise restriction after surgery, but a seroma is still possible even when these precautions are taken. Seromas are drained and usually resolve uneventfully.

Thus if your pet’s aspirate cytology can confirm the type of mass your pet has, deciding whether to pursue an incisional biopsy or an excisional biopsy is usually a straightforward decision. However if your pet’s aspirate cytology does not confirm the type of mass, it may be difficult to decide between an incisional biopsy, which is less expensive and less invasive for your pet but may need to be followed-up with an additional surgery, or an excisional biopsy, which is more invasive for your pet and more costly for you, but has the best chance of cure (and if you need to follow an incisional biopsy with an excisional biopsy, it would have been less costly to go straight for the excisional biopsy). Some owners may opt to monitor the mass for a change in size, shape or appearance and make the decision at later date, should these changes appear. Your veterinarian can discuss this decision with you to help you make the choice that is correct for you and your pet.

If aspirate or incisional biopsy testing confirms the mass is benign: if this is the case, it can be appropriate to just leave the mass alone. However, benign masses can cause trouble; if benign masses located in the abdomen or thorax (chest) become large, they can compress organs and impede function of these organs. If benign masses contact the ground (for instance on the feet or on the belly of shorter animals), they may become ulcerated, inflamed or painful. If benign masses become very large or are near the legs, they may make it uncomfortable for your pet to lie down or walk around comfortably. In these cases, the mass should be removed. Regardless of the results of previous testing, the veterinarians at La Costa Animal Hospital will always strongly recommend histopathology of a mass that is removed so that the opportunity to detect a previously-missed malignancy does not slip through our fingers; once this mass is removed and discarded, we will never be able to determine what it was.