

Mesothelioma

ABOUT THE DIAGNOSIS

Mesothelioma is a severe type of cancer involving the mesothelial cells. Mesothelial cells are the cells that make up the thin, inner linings that cover the internal organs and body cavities of the abdomen (belly) and chest. Mesothelial cells normally secrete a small amount of fluid that lubricates the outer surface of the heart, lungs, and intestinal tract in particular, preventing friction from occurring in these organs that are in constant motion. Mesothelioma is an uncommon tumor of dogs and is very rare in cats. It is important to know that mesothelioma is defined as malignant (cancerous) because of its ability to spread within the chest cavity or within the abdominal cavity.

In people it is well documented that exposure to asbestos can lead to mesothelioma. Dogs exposed to asbestos are also felt to be at increased risk of mesothelioma. Dogs can be exposed to asbestos by being taken to work sites or from the clothes of their owners. However, the exact cause of mesothelioma usually cannot be pinpointed with certainty in most cases.

Mesothelioma causes symptoms through excess fluid production and fluid accumulation around the heart, around the lungs, or in the belly. Mesothelioma also can cause compression or restriction of normal tissues of the chest or abdomen. These effects cause a feeling of bloating and possibly serious symptoms such as shortness of breath or circulatory compromise if mesothelioma-derived fluid accumulation restricts the normal expansion and movement of the heart or lungs.

It is notoriously difficult to confirm that a patient does or does not have mesothelioma. Blood tests are inadequate for the diagnosis; there is no blood test abnormality that is specific for mesothelioma in animals. A suspicion for mesothelioma usually first arises when fluid retention in the abdomen or chest is noted, but many other diseases can also cause such fluid retention. Therefore, the most reliable test is to perform a biopsy (obtain a tissue sample of the body cavity lining) in a patient in whom fluid accumulation is noted. Other tests such as ultrasound and sampling of the fluid with a small needle are always performed first, since these are much less invasive and they may confirm that a totally different process—not mesothelioma—is responsible for symptoms and fluid retention. When a biopsy is necessary, the dog or cat undergoes general anesthesia to have a sample of affected tissue (lining of the chest [pleura], heart sac [pericardium], or abdomen [peritoneum]) taken for laboratory analysis. Even though biopsy is the most reliable test for mesothelioma, it is not perfect, and in a significant proportion of cases, a definitive answer remains elusive. In such cases of persisting uncertainty, which can be bitterly frustrating but do occur even in the best hands, your veterinarian should discuss two possibilities with you: repeating another biopsy to attempt to have a sample that is conclusive or no further biopsy and just ongoing monitoring (periodic examinations and follow-up noninvasive tests such as ultrasound).

LIVING WITH THE DIAGNOSIS

Since mesothelioma is a malignant, cancerous process, it is not possible to cure it. Therefore, given such a serious state and shortened life span associated with mesothelioma, it is essential to be certain that mesothelioma is the true diagnosis and that symptoms such as fluid retention are not caused by some other impostor syndrome that would be more amenable to treatment, of which there are many (congestion due to heart

disease, low blood protein levels, other types of tumors that are less serious, etc.).

If mesothelioma is confirmed with certainty, the goal of therapy is to improve and restore good quality of life for as long as possible. One way to do so is with anticancer drugs that are given as injections or pills, called chemotherapy. There are different types of chemotherapy available for mesothelioma, and depending on individual features of the particular situation, some may be more appropriate than others. Most times, the specific risks, benefits, and expected outcomes can best be determined by board-certified animal cancer specialists, who are specifically known as Diplomates of the American (or European) College of Veterinary Internal Medicine (Oncology) (directories: www.acvim.org [North America] and www.ecvim-ca.org [Europe]). Your veterinarian should be able to refer you to such a specialist for a second opinion and for treatment if mesothelioma is suspected or confirmed.

Once the diagnosis of mesothelioma is certain, a decision arises that may be very clear or devastatingly difficult, and this is the decision on the best course to take: whether to pursue treatment, whether to continue with symptomatic (nonchemotherapy) treatment such as periodic draining of fluid accumulations only, whether to stop everything and allow him or her to continue living comfortably for as long as is feasible, or whether to choose euthanasia if he or she is suffering. There is no single right answer for every patient with mesothelioma, and much of the decision depends on whether a good quality of life still exists. Is your dog/cat still self-sufficient in terms of eating well, remaining housebroken, and breathing comfortably? Do you still see and enjoy the part of your companion that is unique? These types of questions can help guide your outlook about how to proceed in this situation. Here again, seeking the medical information of an oncologist can help make an emotionally intense decision a well-informed one.

TREATMENT

In some cases, the fluid accumulation caused by mesothelioma may be pressing so severely on vital structures (like the heart) that fluid removal by needle or catheter is an essential, emergency procedure. In less severe cases, the fluid is removed as an elective procedure. In either case, the withdrawn fluid is initially sent to the laboratory to assess for other, nonmesothelioma disorders.

Surgery can be of some use with certain cases of mesothelioma. For example, pericardiectomy, which is removal of the sac surrounding the heart when mesothelioma is affecting the sac specifically, can bring significant temporary improvement in the form of symptom relief often for weeks to months or more. However, relief, even if it is for months or 1 year or more, is not permanent cure but may bring a good quality of life for a significant part of a dog or cat's natural life span.

As mentioned above, anticancer medications (chemotherapy) can be given, and such decisions should ideally be made in consultation with a Diplomate of the American or European College of Veterinary Internal Medicine (Oncology) because the benefits and drawbacks are different for every case and because recent information about new treatments is most likely to be available from these individuals.

DOs

- Be certain you are dealing with mesothelioma and not an impostor. Given the seriousness of mesothelioma, a second

opinion is often valuable if the diagnosis was not made by a board-certified oncologist.

- Decide what your pet's quality of life consists of for you and your family. For some, treatment should continue as long as there is no pain or suffering, while for others, the prospect of an illness that will eventually be fatal means no further treatment should be given and rather the pet should be euthanized (humanely put to death). Discuss your goals and expectations with your veterinarian.
- It may be helpful to decide on standards that would indicate unacceptable conditions, such as suffering, and influence you to stop everything in favor of euthanasia. Discuss these with your veterinarian. It is important to stand by these standards and to try not to make emotional or fear-driven decisions in "the heat of the moment" since good days and bad days often alternate. Deciding these standards in advance can help make sure premature decisions do not get the upper hand, while also avoiding suffering.

DON'Ts

- Do not give up because of a bad day, but rather, be aware of overall trends. Have there been several bad days lately? Does this one bad day make you realize that your pet has not been himself/herself for quite some time? If so, then there is reason to question whether to continue, but if it is a single "off" day, things may be totally different a short while later.

WHEN TO CALL YOUR VETERINARIAN

- Recurrence of symptoms (difficulty breathing, weakness, vomiting, diarrhea, decreased appetite, pallor, or weight loss) should be discussed with your veterinarian.
- Your veterinarian should provide you with a description of specific symptoms and side effects based on medications

prescribed; if not, you should feel comfortable asking your veterinarian for this important information.

SIGNS TO WATCH FOR

- Difficulty breathing, weakness, vomiting, diarrhea, decreased appetite, pallor, or weight loss.
- Drug-related side effects.

ROUTINE FOLLOW-UP

- Required for all patients, especially to monitor the rate of reaccumulation of mesothelioma-derived fluid. In turn, this helps predict whether discomfort is present.
- The specifics of follow-up are individual, and you should ask your veterinarian for this information as it pertains to your dog or cat specifically.



Practice Stamp or Name & Address