

Liver Tumors Metastatic and Miscellaneous

These notes are provided to help you understand the diagnosis or possible diagnosis of cancer in your pet. For general information on cancer in pets ask for our handout "What is Cancer". Your veterinarian may suggest certain tests to help confirm or eliminate diagnosis, and to help assess treatment options and likely outcomes. Because individual situations and responses vary, and because cancers often behave unpredictably, science can only give us a guide. However, information and understanding about tumors and their treatment in animals is improving all the time.

We understand that this can be a very worrying time. If you have any questions please do not hesitate to ask us.

What are metastatic liver tumors?

"In dogs, metastatic tumors are three times as common as primary tumors."

The liver has a massive blood supply so many cancer cells from elsewhere arrive within it and start to grow. In dogs, metastatic tumors are three times as common as primary tumors and over 30% of malignant cancer may metastasize to the liver. Cancer of the lymph cells of the immune system (**lymphosarcoma** or **lymphoma**) is the most common type of metastatic liver tumor, followed by tumors of the blood vessels (**hemangiosarcoma**) and then tumors of epithelial tissue, particularly from the pancreas. The liver has multiple functions and a variety of different cells within it, so primary cancers may arise from the **neuroendocrine** cells (**carcinoids**) and tumors of **histiocytic**, **fibrous** and **muscle** tissue also occur. These are discussed in more detail in other handouts in this series.

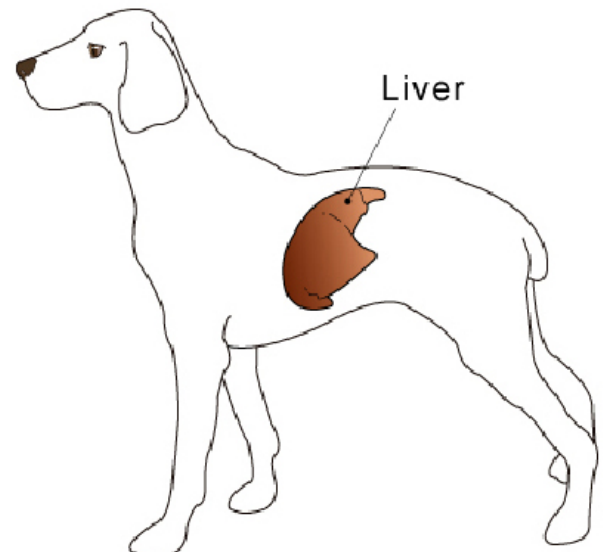
What do we know about the cause?

The reason why a particular pet may develop this, or any cancer, is not straightforward. Cancer is often the culmination of a series of circumstances that come together for the unfortunate individual.

Chronic infections or ingestion of chemicals may play a role in the development of cancers, but we do not know the specific causes in animals.

Why has my pet developed this cancer?

Some animals have a greater tendency (genetic susceptibility) to cancer. Some breeds have far more cancers than others, often of specific types. The more divisions a cell undergoes, the more probable is a mutation so cancer is more common in cells that divide frequently, or in older animals whose cells have undergone more divisions.



Are these common tumors?

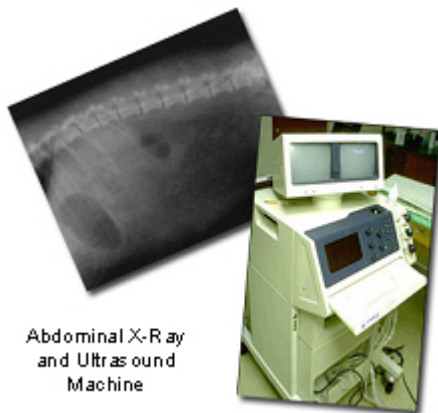
Cancers that are secondary (metastatic) are common in the later stages of cancer. Primary liver tumors are rare.

How will these cancers affect my pet?

The liver has significant functional reserves. This reserve capacity means that the liver can cope with a lot of damage and so cancers are always advanced before there are any signs of illness. They may then cause loss of appetite, vomiting, lethargy, weakness and swelling of the abdomen with fluid. Less common signs are jaundice, diarrhea and weight loss. Many chemicals that are important in the body are made in the liver so there will be damage to most body systems.

With metastatic cancers, there may also be clinical effects in other organs. Damage to the liver by tumors can also induce an inflammatory and degenerative condition of the skin known as metabolic epidermal necrolysis or hepatocutaneous syndrome.

How are these cancers diagnosed?



Some metastatic liver cancers are diagnosed by finding a primary tumor elsewhere. In others, a lump in the liver may be palpable through the abdominal wall. X-rays and ultrasonography can indicate changes in the liver and show lumps, but these non-invasive techniques are incapable of distinguishing non-cancerous nodules and true cancers.

To distinguish tumor type and reach an accurate diagnosis, surgically obtained biopsy samples will be needed. Cytology, the microscopic examination of cell samples, is not diagnostic. Needle biopsies taken through the skin are rarely diagnostic even when guided by ultrasound. Accurate diagnosis and prediction of behavior (prognosis) depend on microscopic examination of larger samples obtained by exploratory surgery. After submission to a specialized veterinary

laboratory, the tissue samples will be examined using histopathology (microscopic examination of specially prepared and stained tissue sections). A veterinary pathologist will reach a diagnosis and prognosis based on the histopathology findings.

What types of treatment are available?

Most of these cancers are not curable by surgery or medical treatment. However, medical treatment of inflammation with antibiotics and anti-inflammatory drugs may sometimes help improve the quality of life of the pet.

"One of the main ways of managing liver diseases is with diet."

One of the main ways of managing liver diseases is with diet. The liver makes water soluble Vitamins B, C and K, proteins and other foods for the rest of the body so compensation for lack of these functions may make your pet feel better. Several commercially prepared diets are available.

Some types of cancer, such as those of the lymph cells, are treated with chemotherapy in some countries. However, when this type of cancer is present in the liver, survival times are usually very short.

Can these cancers disappear without treatment?

"Cancers that are diagnosed at a late stage do not disappear."

Cancers that are diagnosed at a late stage do not disappear. As development is a multi-step process, the progression may slow down or stop at some stages. The body's own immune system can kill cancer cells but it is rarely 100% effective, particularly at this late stage. Rarely, loss of blood supply to a cancer will make it die but the dead tissue will probably need surgical removal and in most cases, the liver function is critical and cancer is also present elsewhere.

How can I nurse my pet?

After surgery, the operation site needs to be kept clean and your pet should not be allowed to interfere with the site. Any loss of sutures or significant swelling or bleeding should be reported to your veterinarian. Your pet will require a special diet in many cases. You may be asked to check that your pet can pass urine and faeces or to give treatment to facilitate this. If you require additional advice on post-surgical care, please ask.

How will I know how the cancer will behave?

The histopathology report will give your veterinarian the diagnosis that helps to indicate how it is likely to behave. The veterinary pathologist usually adds a prognosis that describes the probability of local recurrence or metastasis.

When will I know if the cancer is permanently cured?

'Cured' has to be a guarded term in dealing with any cancer.

"Metastatic cancer is very unlikely to be cured by any treatment."

Metastatic cancer is very unlikely to be cured by any treatment. Localized primary tumors are rare but, in theory, can be removed surgically.

Are there any risks to my family or other pets?

No, these tumors are not transmitted from pet to pet or from pets to people.

This client information sheet is based on material written by: Joan Rest, BVSc, PhD, MRCPath, MRCVS

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