

## **TYPES OF CANCER**

There are many types of cancer and they vary in how they affect the patient, how they can be treated and the outcome of treatment. The aim of this part of the site is to provide basic information about the tumour types and their treatment. However, it must be stressed that these are general statements and it is important to discuss the various aspects with your vet.

### **BENIGN OR MALIGNANT?**

A tumour is a ball of cells that is growing outside the strict limits of control that the body normally imposes. Tumours are also referred to as neoplasms or neoplastic growths. Tumours are essentially normal cells that have gone wrong. The cell of origin determines the type of tumour that develops. Tumours may be benign or malignant.

#### **Malignant tumours**

Malignant tumours are potentially the most dangerous type of tumour – they are otherwise known as cancer. They grow by invasion into the surrounding tissue. The direct effects of this vary according to which part of the body is involved. In the skin, the tumour may become ulcerated, inflamed and painful. If the tumour involves bone this may become weakened and indeed may fracture. Tumours that involve bone are frequently painful.

The other major characteristic of a malignant tumour is that it has the ability to spread to other parts of the body. This process is known as metastatic spread (metastasis) and the new tumours are called metastases or secondaries. These secondaries can occur anywhere in the body but the common sites are the lymph glands and the lungs. They can also spread to the liver, kidney, brain and bones. However, not all malignant tumours undergo secondary spread. Some cancers, often referred to as low grade, have a low metastatic rate - that is to say only a small percentage actually spread. Tumours arising from fibrous tissue in the skin of dogs (known as fibrosarcoma) are generally low grade and less than 15 per cent metastasise; however it is often not possible to say which will be the dangerous one. At the other extreme there are cancers with a high metastatic rate where most will spread. Bone cancers in dogs (osteosarcoma) are 'high grade' and at least 95 per cent will metastasise.

Predicting which patient will develop secondaries is often impossible unless they are at a size that can be seen on a radiograph or by ultrasound scan. However, if no secondaries are seen on the chest x-ray that is no guarantee that secondaries will not develop at a later date. A secondary tumour starts as a small ball of cells less than 100th of a millimetre and it must grow to a size where it can be detected. To be visible on an X-ray the mass has to be about almost 1 centimetre diameter. The rate of growth to get to this size can be slow for some tumours or rapid for others. Most secondaries break away and grow when the original primary tumour is tiny. Secondaries that appear after a primary tumour has been removed will have been present but not detected at that time.

For tumours with a high likelihood of secondary spread, anticancer drugs (chemotherapy) may be recommended to delay or even prevent secondaries; however, not all tumours are sensitive to drugs. Metastatic spread is the most difficult type of cancer to treat and, as they grow, they take over more

of the patient's normal organs until the patient dies. Secondaries growing in the lung, for example, will reduce the function of the lungs such that the patient cannot get enough oxygen and tires easily. As the tumours grow further coughing and general illness may also become apparent.

#### Benign tumours

There are two major differences between benign and malignant tumours. Truly benign tumours do not invade into the surrounding tissue nor do they ever spread to distant parts. They grow by simple expansion and generally at a slow rate. Many benign tumours do not have a major effect on the patient. However, some can cause serious problems depending on where they are in the body. A benign tumour growing on the inside edge of the eyelid will rub on the eyeball which can be very painful and may cause corneal ulceration, even when only a few millimetres across.

#### Types of tumours

The names given to a tumour reflect their cell type and whether they are benign or malignant. Carcinoma is a malignant tumour arising from epithelium (skin or inside of mouth) e.g. basal cell carcinoma, squamous cell carcinoma

Adenocarcinoma is a malignant tumour arising from glandular tissue e.g. salivary adenocarcinoma  
The benign equivalent is called adenoma.

Sarcoma is a malignant tumour arising from so-called connective tissue – fibrous tissue (fibrosarcoma), cartilage (chondrosarcoma), bone (osteosarcoma). The benign equivalents are fibroma, chondroma, osteoma

Unfortunately this 'code' does not always hold true.

Melanoma is a tumour of the pigmented cells in the body and depending on the site can be either malignant (mouth) or most likely benign (skin).

Lymphosarcoma is a malignant tumour of the lymph system – it is also called lymphoma.

There are many tumours and their behaviour can be very different. It is therefore essential to know the exact type usually based on a biopsy for histology. The appropriate treatment and likely outcome are determined by the diagnosis

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