

## **Anal sac (apocrine gland) adenocarcinoma**

Anal sac adenocarcinoma is a malignant tumour that can arise from the glands of the anal sacs. The anal sacs or glands are small, paired sacs located on either side of the anus between the external and internal sphincter muscles. Anal sac tumours arise from sebaceous glands located within the lining of the sacs. Sebaceous glands normally secrete a foul smelling liquid that coats the faeces or stool and is used for identification of members within a species. They are similar to the scent glands found in skunks. Anal sac tumours are usually malignant and are most commonly seen in female and castrated male dogs over eight years of age. As with most tumours in animals (and people) we do not know what causes these to occur. Any dog can develop an anal gland adenocarcinoma but certain breeds are predisposed.

### ***Clinical signs***

The most common presenting complaint for animals with anal sac adenocarcinoma is local irritation, which may result in bleeding, straining to defecate, scooting of the hind end along the ground and licking of the anus. Often the tumour cannot be seen but occasionally there will be a visible mass around the rectum. Signs may vary from a lump within the anal sac to enlarged lymph nodes causing changes in stools (i.e. flat and ribbon-like) or straining. Approximately 25% of anal gland tumours can produce a hormone that results in increased blood calcium levels (hypercalcaemia). Signs consistent with hypercalcaemia may include increased water consumption, increased urination, weight loss, weakness or vomiting. Some anal gland tumours are discovered as incidental findings during rectal examination for suspected impacted anal glands or as an incidental finding while taking the animal's rectal temperature.

### ***Diagnosis and staging***

To diagnose an anal sac tumour, a fine needle aspirate or biopsy is performed. A fine needle aspirate is a simple test done with a small needle and syringe. The sample is often sufficient to diagnose an anal gland adenocarcinoma. A biopsy involves taking a larger sample and is more likely to give a diagnosis. An incisional biopsy involves taking a small sample of tissue from within the tumour and can often be performed with sedation and/or local anaesthesia. This is indicated for larger tumours in which surgical removal of the entire tumour may be difficult and may require reconstructive surgery. An excisional biopsy involves removing the entire tumour and requires a general anaesthesia. This could be considered for smaller tumours or after a fine needle aspirate has diagnosed anal sac adenocarcinoma.

Once a diagnosis has been reached further tests, or staging tests, are done to screen for cancer spread to internal organs (these are called "metastases"). Unfortunately, anal sac adenocarcinomas have often already spread to the lymph nodes in the abdomen before the diagnosis has been made. Reports vary widely, however the number of anal sac adenocarcinomas that have metastasised at the time of diagnosis range from 46-96%. Staging for an anal sac adenocarcinoma usually includes an abdominal ultrasound (with special attention paid to the lymph nodes that drain the anal sac area – the sublumbar nodes) and chest radiographs. Blood tests (a complete blood count and biochemistry) and urinalysis are also performed to establish the general health of the patient prior to treatment.

### ***Treatment***

Treatment options for anal sac adenocarcinoma include surgery, chemotherapy, radiation therapy and symptomatic treatment. **Surgery** is usually the best treatment option and where possible complete excision (removal) of the tumour is preferred. Surgery is indicated for tumours that are smaller and less invasive and if there is no evidence of spread beyond the local lymph nodes. It involves removing the tumour with a wide margin of normal tissue both around it and underneath it to increase the likelihood of removing the entire tumour. This can be difficult due to the location of tumour close to the anal sphincter and it is uncommon for wide excision to be achieved and some residual tissue is left. If the tumour occupies more than half of the circumference of the anal sphincter removal of the entire tumour can result in faecal incontinence. The surgeon will often be able to give an estimate of the likelihood of this occurring based on the tumour size and even if incontinence does occur to some degree, it may be intermittent. Even if there is spread to the lymph nodes these can often be removed at the time of removal of the anal mass and the outcome can still be reasonably good, although cure is not likely. Surgery is

not always an option for animals with metastatic disease beyond the local lymph nodes and for large and invasive tumours.

**Chemotherapy** is recommended in addition to surgery given the high metastatic rate of these tumours. Even if there is no evidence of cancer spread or metastases on our staging tests this does not mean that the cancer has not spread, as there may be microscopic cancer cells that have metastasised. Chemotherapy is also indicated if the cancer cannot be removed with surgery, has already metastasised, or if some residual cancer remains after surgery. The most commonly used chemotherapy drug for anal sac adenocarcinoma is carboplatin. This is administered by an intravenous injection every three weeks often for 4-6 treatments. Chemotherapy is generally well tolerated in animals. (Please see 'Chemotherapy in animals' handout.)

**Radiation** therapy can also be used to treat anal sac adenocarcinoma, especially when surgery is not possible or there is residual cancer left after surgery. Radiation is a local treatment only and does not treat metastatic disease other than the local lymph nodes. It must be combined with chemotherapy to treat disease elsewhere in the body. Unfortunately access to radiation in Victoria is limited and this currently would require travel to Queensland. Symptomatic treatment may be required for hypercalcaemia as persistently high calcium concentrations may cause injury to the kidneys. This involves treatment with oral medication such as prednisolone or frusemide. These cause diuresis or increased urination which helps reduce the blood calcium concentration. Some animals may require a high fibre diet or stool softeners if they are having difficulty defecating.

### **Prognosis**

The prognosis for anal sac adenocarcinoma depends on many factors including the presence or absence of metastases, whether the tumour can be surgically removed and whether or not the tumour is new or a recurrent tumour (i.e. regrowth of tumour previously removed). The average survival time for patients treated with chemotherapy alone is 6–9 months. The average survival time for patients treated with surgery alone is 12 months and the average survival time for patients treated with both surgery and chemotherapy is about 18 months. If radiation is combined with chemotherapy and surgery it may be possible to achieve longer survival times and as mentioned this would currently require travel to Queensland.

### **Follow up**

Following the completion of chemotherapy we recommend periodic rechecks to screen for recurrence or metastasis. These are typically recommended one month after finishing chemotherapy and then every three months thereafter. Early detection of recurrence or metastases is often beneficial and allows prompt management or treatment.