

Cancer of the Stomach

Surgery Service



**Michigan Veterinary
Specialistssm**

www.michvet.com

We Can Help

Available Services

- 24/7 Emergency & Critical Care
- Cardiology
- Computed Tomography
- Dermatology & Allergy
- Internal Medicine
- Interventional Radiology
- MRI
- Neurology
- Neurosurgery
- Oncology
- Oncologic Surgery
- Ophthalmology
- Orthopedic Surgery
- Radiology & Fluoroscopy
- Soft Tissue Surgery
- Ultrasound

Locations

Auburn Hills

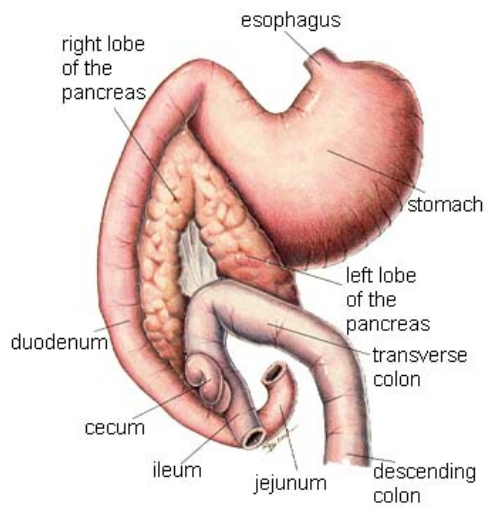
3412 E. Walton Blvd.
(West of Squirrel Rd.)
(248) 371-3713

Grand Rapids

1425 Michigan St. NE
(East of Fuller Rd.)
(616) 284-5300

MVS Southfield

29080 Inkster Rd.
(North of 12 Mile Rd.)
(248) 354-6660



Used with permission, Hill's Pet Nutrition

Anatomy

The gastrointestinal tract consists of a tube that runs from the mouth to the anus. Its function is to digest food and absorb nutrients into the body. The stomach is a dilated part of the GI tract that produces acid, which helps with the initial breakdown of proteins. The small intestine extends from the stomach to the colon and serves to further breakdown food into absorbable nutrients. The cells lining the small intestine are distinctly different from that of the stomach.

Stomach cancer

Cancer can develop in the stomach in dogs, but rarely in cats. There are two major types of cancer that affect the stomach: benign and malignant. The cancer of the stomach usually is malignant and has a high tendency to spread to other parts of the body. If it spreads, the liver and the lymph nodes are commonly affected, however, the tumor can also spread to the lungs. Benign leiomyomas can also affect the stomach, are easily treated with surgery and have a very good prognosis. Lymphoma (commonly in the feline species), adenocarcinoma and leiomyosarcoma comprise the majority of malignant stomach tumors. Benign tumors have also been reported and include extramedullary plasmacytoma and leiomyoma.

Signs and diagnosis

Breeds that more commonly develop stomach cancer include the Rough Collie, Staffordshire bull terrier, Belgian Shepherd dog and Chow chow and the median age of affected dogs is 9.5 years of age. The primary sign that the pet owner may see at home is vomiting, drooling, decreased activity, decreased appetite, black stools abdominal pain, and weight loss. Commonly, no additional signs are present upon physical examination by your companion's veterinarian.

The diagnosis of a stomach tumor is made upon examination of the inside of the stomach with a flexible video camera called an endoscope. An x-ray following ingestion of barium contrast material is a less sensitive test used to identify a stomach tumor is an x-ray of the stomach following ingestion of barium contrast material. Confirmation of the type of tumor necessitates a biopsy, which may be done at the time of endoscopic examination of the tumor, but is frequently done after the tumor has been removed. Tests done prior to surgery may include a complete blood count, blood chemistry profile, and urinalysis to check internal organ health. Chest x-rays and abdominal ultrasound are used to identify visible spread of the cancer; however, microscopic spread of cancer to other organs cannot be detected with x-rays and ultrasound.

Cancer of the Stomach Continued...

The day of surgery

Our anesthesia and surgical team will prescribe a pain management program, both during and after surgery that will keep your companion comfortable. This will include a combination of general anesthesia, injectable analgesics, epidural analgesia, oral analgesics and anti-inflammatory medication. The surgeon will call you with an update following your companion's surgery.

Treatments

Surgery is recommended to remove the tumor of the stomach. Commonly, this tumor is located in the lower part of the stomach and this portion of the stomach will need to be removed along with a small portion of the small intestine. The remaining portion of the stomach is surgically reconnected to the small intestine (Bilroth type I procedure). While in the hospital, your companion will receive intravenous fluid therapy, intravenous antibiotic and sometimes anti-vomiting medication. Most patients remain in the hospital for 2 nights after surgery.

Chemotherapy is usually recommended if the tumor is malignant. This medication will be administered every two to three weeks via intravenous injection by our oncologist for a total of four to five treatments. The treatments are typically done on an outpatient basis and may take a total of 90 minutes to complete each visit. Unlike humans, most dogs do not lose their hair and usually have only mild side effects from the medication, which may include transient loss of appetite and vomiting.

Aftercare and results

At home, you can continue to give your pet a prescribed pain reliever to minimize discomfort. It's also extremely important to limit your dog's activity and exercise level for three weeks after surgery. The incision should be checked daily for signs of infection. An ant-acid may be prescribed for about 2 to 3 weeks after surgery to prevent formation of stomach ulcers. Two weeks after surgery, the surgeon will monitor the healing process and our oncologist will initiate chemotherapy.

Short-term complications following surgery are uncommon and may include temporary bleeding at the surgical site, infection, stomach ulcers, dehiscence (stomach incision opens) recurrence of vomiting and death. Tumor recurrence or spread of the cancer is a common sequel following surgery.

The most common tumor, gastric adenocarcinoma carries a guarded prognosis, as 76% of dogs have metastasis at the time of diagnosis (in 132 cases). Overall survival times are commonly less than 6 months, however in the studies listed below the mean survival was 8.5 months (only 17 dogs had follow-up data). The median survival time following treatment of cats with gastric lymphoma with a Madison-Wisconsin chemotherapy protocol is 10 months. Dogs with a gastric leiomyosarcoma can be potentially cured with surgery alone, but the literature for the most part indicates similar survival rates as gastric adenocarcinoma. Benign tumors also can be cured with surgical excision.

References

1. Lee SM, Fisher R, Nash EW, et al. A study of 31 cases of gastric carcinoma in dogs. *Veterinary Record*, 120: 4, 79-83, 1987
2. Swann HM, Holt DE. Canine Gastric Adenocarcinoma and leiomyosarcoma; a retrospective study of 21 cases (1986-1999) and literature review. *J Am Animal Hosp Assoc* 38:157-164, 2002
3. Thielen GH, Madewell BR. *Veterinary cancer medicine*. Philadelphia: Lea and Febiger, 1979:317-319.



**Michigan Veterinary
Specialistssm**

www.michvet.com

Cancer of the Stomach Continued...

4. Sautter JH, Hanlon GF. Gastric neoplasms in the dog: a report of 20 cases. *J Am Vet Med Assoc* 1975;166:691-696.
5. Drake J, Hime J. Gastric carcinoma in the dog; two further cases. *J Sm Anim Pract* 1965;6:131-133.
6. Howell J. Two cases of mucin-secreting carcinoma of the stomach of the dog. *J Comp Pathol* 1964;74:94-96.
7. McDonald A. Primary gastric carcinoma of the dog: review and case report. *Vet Surg* 1978;7:70-73.
8. Pollock S, Wagner B. Gastric adenocarcinoma or linitis plastica in a dog. *Vet Med Sm Anim Clin* 1973;68:139-142.
9. Patnaik AK, Hurvitz AI, Johnson GF. Canine gastrointestinal neoplasms. *Vet Pathol* 1977;14:547-555.
10. Patnaik AK, Hurvitz AI, Johnson GF. Canine gastric adenocarcinoma. *Vet Pathol* 1978;15:600-607.
11. Murray M, Robinson PB. Primary gastric neoplasia in the dog: a clinicopathological study. *Vet Rec* 1972;91:474-479.
12. Sullivan M, Lee R, Fisher EW, *et al.* A study of 31 cases of gastric carcinoma in dogs. *Vet Rec* 1987;120:79-83.
13. Fonda D, Gualtieri M, Scanziani E. Gastric carcinoma in the dog: a clinicopathological study of 11 cases. *J Sm Anim Pract* 1989;30:353-360.
14. Scanziani E, Giusti AM, Gualtieri M, *et al.* Gastric carcinoma in the Belgian shepherd dog. *J Sm Anim Pract* 1991;32:465-469.
15. Douglas SW, Hall LW, Walker RG. The surgical relief of gastric lesions in the dog: report of seven cases. *Vet Rec* 1970;86:743-746.
16. Dorn AS, Anderson NV, Guffy MM, *et al.* Gastric carcinoma in a dog. *J Sm Anim Pract* 1976;17:109-117.
17. Sellon RK, Bissonnette K, Bunch SE. Long-term survival after total gastrectomy for gastric adenocarcinoma in a dog. *J Vet Intern Med* 1996;10(5):333-335.
18. Elliott GS, Stoffregen DA, Richardson DC, *et al.* Surgical, medical, and nutritional management of gastric adenocarcinoma in a dog. *J Am Vet Med Assoc* 1984;185(1):98-101.
19. Klausner JS, Hardy RM. Alimentary tract, liver and pancreas. In: Slatter D, ed. *Textbook of small animal surgery*. Philadelphia: WB Saunders, 1993:2088-2105.
20. Penninck DG, Moore AS, Gliatto J. Ultrasonography of canine gastric epithelial neoplasia. *Vet Radiol & Ultrasound* 1998;39(4):342-348.
21. Olivieri M, Gosselin Y, Sauvageau R. Gastric adenocarcinoma in a dog: six-and-one-half month survival following partial gastrectomy and gastroduodenostomy. *J Am Anim Hosp Assoc* 1982;20:78-82.
22. Campbell RS, Lauder IM. Gastric carcinoma in the dog. *J Comp Pathol* 1952;62:275-278.
23. Berg P, Rhodes WH, O'Brien JB. Radiographic diagnosis of gastric adenocarcinoma in a dog. *J Am Vet Rad Soc* 1964;5:47-53.
24. Kapatkin AS, Mullen HS, Matthiesen DT, *et al.* Leiomyosarcoma in dogs: 44 cases (1983-1988). *J Am Vet Med Assoc* 1992;7:1077-1079.



Cancer of the Stomach Continued...

Assessment and recommendations

Patient: _____

Date: _____

Treatment

- Surgery is recommended by a surgeon at Michigan Veterinary Specialists
- Surgery is not recommended
- Please make an appointment for a consultation with one of our oncologists

The following has been prescribed

- No medications or special diet are necessary at this time
- Prescription diet: _____
- Antibiotic: _____
- Ant-acid: _____
- Other medications: _____

Exercise

- Unlimited
- Confine your pet to the house other than very short leash walks necessary for bowel movements and urination
- Restrict exercise to leash walks 10 minutes twice daily

Preparation for surgery

- Start fasting your companion at midnight before the day of surgery; water should not be withheld
- Give Pepcid AC 10 mg tablets: _____ tablets with water (if needed use a syringe) at 6 AM on the day of surgery

*Composed by Daniel A. Degner, DVM, DACVS
Edited by Ned F. Kuehn, DVM, MS, DACVIM*



**Michigan Veterinary
Specialistssm**

www.michvet.com