

Gastrointestinal Endoscopy in Dogs



The gastrointestinal tract is composed of the stomach, small intestine, and large intestine (or colon). The purpose of Endoscopy is to visually inspect the lining of the gastrointestinal tract for the presence of obvious abnormalities and to obtain a small amount of tissue for microscopic study.

An endoscope is a flexible tube that contains fibre-optics. This technology allows study of the gastrointestinal tract and offers the potential for diagnosis of many diseases without abdominal surgery.

To examine the upper gastrointestinal tract, the flexible part of the endoscope is inserted into the mouth. It is passed downward permitting examination of the oesophagus and stomach. After reaching the stomach, the scope is passed through the valve at the lower end of the stomach (pylorus) and into a short segment of the small intestine (duodenum). Successful entry into the duodenum depends upon the size of the dog and the size of the endoscope. Even when the duodenum can be examined and a biopsy obtained, only a small segment of the small intestine is accessible to endoscopy. Some diseases of the small intestine require additional tests to complete a workup. In many cases, the colon is also examined, via the rectum, and biopsies may again be taken.

Since the organs are viewed in full colour and in "real time," some results are known immediately. For example, the veterinarian will be able to look for areas of inflammation, ulceration, and any abnormal structures, such as a mass or stricture. Foreign bodies (bones, toys, stones, coins, etc.) may also be seen and, in some cases, removed. To complete the study, results of microscopic examination of one or more pinch biopsies must be obtained. Time involved for these results will vary from a day to a week, depending on the need for any special tests on the tissue.

To obtain the biopsies, the endoscope has a tiny channel, or port, through which a biopsy instrument can be passed. Small biopsies can be taken of specific areas that may appear abnormal. Even if all tissues appear normal, several biopsies will still be taken because some diseases are diagnosed only with microscopic study of tissue. Because the amount of tissue sampled is very small, complications from obtaining a biopsy are very uncommon.

It is vital that the inspected organs be empty of food and water prior to the study. If the stomach is to be examined, withholding food and water for 12 hours is generally sufficient. If the colon is to be examined, oral medication is begun 12-18 hours before the procedure to remove faecal material from the entire intestinal tract. Fasting for 12-18 hours is also vital so new faecal material does not form. On the morning of the procedure, one or more enemas are given to remove any remaining stool from the lower intestinal tract.

Endoscopy has two primary disadvantages.

1. *Superficial biopsy.* One shortcoming of endoscopy is that it only samples the surface layer (mucosa) of the gastrointestinal tract. Some tumours do not involve this superficial layer and are located deeper in the wall of the stomach or intestine. In this case, endoscopic biopsy will not achieve a diagnosis
2. *General anaesthesia.* Passing an endoscope into a dog's stomach or colon is not possible in an awake patient. Furthermore, patient cooperation is vital since the equipment that is used costs several thousand dollars and is quite fragile. Even for endoscopy of the colon, a short-acting anaesthesia is required. However, we use hospital grade anaesthetics and monitoring, and give all patients a full examination prior to anaesthesia to ensure they are well enough to cope with an anaesthetic.