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Esophageal Strictures of the Dog and Cat: Diagnosis and Treatment

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CAUSES

Esophageal strictures are a relatively uncommon condition in small animals but they have been well documented. They can be divided in benign and malignant and, based upon their site of origin they are classified as intrinsic (intramural) and extrinsic (extramural). The most common form affecting the dog and cat is the intramural stricture that can be congenital or acquired. Congenital strictures are rare and can appear as stenotic rings or membranes at various levels in the esophageal wall. Acquired strictures occur secondary to injury or severe esophagitis of any etiology extending into the submucosa or the muscle layer of the esophageal wall. Healing by intramural fibrosis of these lesions leads to stricture formation. Most cases of esophageal stricture in dogs and cats occur from reflux esophagitis secondary to reflux of gastric acid and enzymes during general anesthesia or hiatal disease, and from passage and removal of esophageal or gastric foreign bodies. Abnormal healing of previous esophageal surgery is also a common condition of stricture formation in dogs and cats. Severe esophagitis resulting from persistent vomiting, vomiting of hairballs in cats and acids or alkali ingestion, penetrating lesions, granulomas caused by *Spirocerca lupi* parasite and neoplasia are other possible causes. Extramural strictures may be congenital or acquired as well, but the congenital forms are certainly the most common. The most frequent causes include vascular ring anomalies, abscess formation, thymic or lung masses, enlarged thoracic lymph nodes and neoplasia.

CLINICAL SIGNS

At outset, the predominant sign of esophageal stricture is regurgitation shortly after eating. The animal may be otherwise healthy and the appetite is maintained or ravenous. Generally, fluids are retained while solid food is regurgitated. Excessive salivation may be observed. With the progression of esophageal obstruction and inflammation, regurgitation and dysphagia worsen and the animal may develop anorexia and severe weight loss. At this stage of disease, regurgitation may not be related to eating because secondary esophageal distension cranial to the lesion can act as food reservoir. Fever, cough and dyspnea indicate that secondary aspiration pneumonia has developed.

DIAGNOSIS

Diagnosis is quite easily established and is based primarily on a detailed clinical history, clinical signs, radiographic examination and endoscopy. Clinical signs usually occur 1-2 weeks after the onset of the primary cause (injury, onset of esophagitis, general anesthesia etc.). History may indicate signs related to the lesions caused by the migrating forms of *Spirocerca lupi.* Physical examination is usually unremarkable and the animal may be active and alert. Increased salivation may be noticed. Chronic or neoplastic strictures are usually associated with weight loss and malnutrition. In some cases, severe signs of aspiration pneumonia can divert the attention of the clinician from the primary problem. Survey radiographs are often irrelevant in fibrosing strictures unless the esophagus is distended with food, fluids or air proximal to the stricture. Barium contrast radiography using barium liquid or barium mixed with food is usually diagnostic of an esophageal stricture, showing its location and length. Endoscopy allows evaluation of luminal diameter, morphology and nature (by cytology and/or biopsy) of the stricture, and the assessment of surrounding mucosa involvement. By endoscopy, a benign stricture may appear as a white ring of fibrous tissue narrowing the esophageal lumen at various degrees and not distending in response to air inflation. Benign fibrous strictures can be classified upon their endoscopic aspect in five main types: annular, mucous branches, semilunar, tortuous and tubular strictures. Multiple strictures are less commonly observed.

TREATMENT

Treatment options for esophageal strictures include conservative or surgical procedures.

Conservative treatment includes mechanical stricture dilation (bougienage, balloon catheter dilation) and prosthesis placement. A technique using endoscopic electrocautery incisions of the stricture prior to dilation has been proposed and is successfully performed by the author. Surgery is not commonly performed on the esophagus because it is technically demanding and often complicated; it includes resection and anastomosis, esophagoplasty or reconstructive procedures (patch grafting), and is indicated when conservative treatment fails or in case of neoplastic or tubular strictures.

COMPLICATION

The most severe complication of stricture dilation and electrocautery is esophageal perforation, while complications of prosthesis placement are prosthesis obstruction and dislocation in the gastric cavity and mechanical lesions with fistula formation of the esophageal wall. Gastric over distension can be a common complication of endoscopy in animals with strictures, since air inflated with the endoscope cannot be aspirated if the stricture precludes passage of the endoscope in the stomach.

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