

## Megaesophagus in Dogs

M. Saravanan<sup>1\*</sup>, V. Sasikala<sup>2</sup> and M. Murugan<sup>3</sup>

Indian Veterinary Research Institute, Izatnagar (U.P)

<sup>1</sup> PhD scholar, Division of Medicine

<sup>2</sup> PhD scholar, Division of Extension Education

<sup>3</sup> PhD scholar, Division of Animal Reproduction

\*Correspondence Email: [sara82vet@yahoo.com](mailto:sara82vet@yahoo.com)

### Introduction

Megaesophagus is a condition where there is decreased or absent motility (movement, muscular contractions) of the oesophagus (Tams, 2003). Disorders of oesophageal motility result from either abnormalities in neural, neuromuscular junction and or oesophageal muscular dysfunction. Because the oesophagus consists almost exclusively of skeletal muscle systemic myopathies and even neuropathies may also affect the oesophagus. In most cases the prognosis for a megaesophagus is poor especially when secondary aspiration pneumonia is present. The disorder is characterized by oesophageal hypomotility and dilation, progressive regurgitation and loss of body condition (Ettinger and Feldman, 2005).

Megaesophagus may be congenital or a problem secondary to other disorders. It occurs frequently in dogs and occasionally in cats.

**Breed Susceptible:** Great Danes, Irish setters, Newfoundland's, German Shepherds, Shar pei, and Labrador retrievers are genetically predisposed.

### Etio-Pathology of Megaesophagus

**1. Congenital Megaesophagus** occurs in young dogs inherited or secondary to developmental abnormalities in oesophageal innervations. Congenital megaesophagus occurs due to incomplete nerve development in the oesophagus (Bexfield *et al.*, 2006). Clinical signs do not show up until the pup begins to try solid food. Another congenital problem is the "Vascular Ring Anomaly." This is a band of tissue constricting the

oesophagus. Such tissue bands are remnants of fetal blood vessels which are supposed to disappear before birth (Hall *et al.*, 2005).

2. **Acquired Megaesophagus** occurs in adult dogs due to nerve damage.
  - a. Myasthenia gravis is considered the most common cause of canine megaesophagus. Myasthenia gravis is a condition whereby the nerve/muscle junction is destroyed. Megaesophagus is one of its classical signs though general skeletal muscle weakness is frequently associated. The syndrome occurs spontaneously in adult dogs between 7 to 15 years of age without sex or breed predilection (Batmaz *et al.*, 1998).
  - b. Addison's disease (hypoadrenocorticism) has also been associated with megaesophagus but it's rare in dogs.
  - c. Hypothyroidism may be associated with megaesophagus.
  - d. External obstruction of the oesophagus.
  - e. Polyneuropathy
  - f. Systemic Lupus Erythematosus (SLE)
  - g. Polymyositis
  - h. Lead toxicosis
  - i. Thallium toxicosis

The most common sign of megaesophagus is regurgitation of food and water. The frequency of regurgitation may vary from as little as one episode every few days to many episodes per day. Regurgitation associated with megaesophagus occurs several minutes to several hours after feeding. In congenital cases this will be first noticed, especially through the nostrils, when the affected animal is weaned; subsequently the puppy or kitten will experience poor growth (Bexfield *et al.*, 2006). Other signs include weight loss, excessive salivation, and gagging. If neuromuscular disease is present, the affected animal may be weak and wobbly, may have difficulty swallowing and breathing, and may have coughing spells. Many patients will aspirate regurgitated material and develop aspiration pneumonia. Aspiration pneumonia is a common complication of megaesophagus (Tams, 2003).

### Diagnosis

Normally the condition is diagnosed by careful investigation, recording proper history, correlating the clinical signs, response to therapy in most cases and confirming the condition with laboratory diagnosis. Specific tests to evaluate systemic disorders such as hypoadrenocorticism (ACTH stimulation), systemic lupus erythematosus (antinuclear antibody) and Myasthenia gravis acetylcholine receptor antibody titer (Hall *et al.*, 2005).

### ***Radiography***

Survey radiographs will be diagnostic for most cases of megaesophagus. Contrast (Barium) radiographs may be necessary in some cases to confirm the diagnosis, evaluate motility and exclude foreign bodies or obstruction as the cause of the megaesophagus (Ettinger and Feldman, 2005).

### ***Endoscopy:***

Endoscopy is an important diagnostic test for the megaesophagus. The major differential diagnoses are those seen with acquired secondary megaesophagus, e.g., myasthenia gravis, esophagitis and dysmotility, Addison's disease and polymyositis (Hall *et al.*, 2005).

## **Treatment and Management**

### **Dietary Management**

The first step for therapeutic management of megaesophagus in dogs is feeding management. Affected animals should be fed a high-calorie diet, in small frequent feedings (2 to 4 times daily), from an elevated or upright position to take advantage of gravity drainage through a non-peristaltic oesophagus. Ideally, the pet should be kept elevated position for 10-15 minutes after the meal (Tams, 2003).

If elevated feeding is not providing adequate nutrition for the patient, there is an alternative: the gastric feeding tube. The tube allows food to be delivered directly into the stomach, skipping the diseased oesophagus. This does not end regurgitation, as the animal will still be swallowing saliva throughout the day and periodically regurgitating that saliva, but the food regurgitation should be controlled with tube feeding ( Hall *et al.*, 2005).

### **Medical Management**

1. To stimulating oesophageal peristalsis (e.g., metoclopramide or cisapride) or diminishing lower oesophageal sphincter tone (e.g. anti-cholinergics or calcium channel antagonists) in affected animals.
2. Myasthenia gravis affected dog should be treated with pyridostigmine (1.0-3.0 mg/kg q12h PO) and/or corticosteroids (Prednisolone 1.0–2.0 mg/kg q12h PO or SC).
3. Hypothyroidism affected dog treated with levothyroxine (0.22 mcg/kg q12h PO).

4. Polymyositis affected dog treated with prednisone (1.0-2.0 mg/kg q12h PO) (Washabau, 2001).
5. Animals with evidence of aspiration pneumonia are treated with broad-spectrum antibiotics.

### **Prognosis**

1. The prognosis for dogs with congenital megaesophagus is fair.
2. Acquired megaesophagus prognosis can be fair to good if diagnose and treated early.
3. Idiopathic megaesophagus often has a poor prognosis because of repeated bouts of aspiration, weight loss, and continued regurgitation (Washabau, 2001).

### **References**

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