CASE REPORT
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DIAGNOSIS AND MANAGEMENT OF CONGENITAL MEGAESOPHAGUS IN A GREAT DANE: A CASE REPORT

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ABSTRACT

Megaesophagus is a syndrome characterized by segmental or diffuse esophageal dilatation resulting from congenital or idiopathic acquired neurological dysfunction. Megaesophagus is reported more commonly in dogs than in cats. A one-year-old intact male Great Dane was presented with a history of chronic regurgitation of small amounts of undigested solid food for the past eight months. The basic clinical examination revealed no abnormalities, and the clinical parameters were well within the reference range. Hematology and serology data were inconclusive. The condition was diagnosed as congenital megaesophagus by radiography. Successful management of the condition is discussed in this case report.

Keywords: Megaesophagus, Regurgitation, Great Dane

INTRODUCTION

Megaesophagus is characterized by oesophageal dilatation and dysmotility. Depending on the etiology, megaesophagus is classified as primary megaesophagus, which is idiopathic, or secondary megaesophagus, which occurs in combination with other diseases including myasthenia gravis, hypoadrenocorticism, dysautonomia, polyradiculoneuritis, hypothyroidism, polymyopathies, and oesophageal cancer. (Wray and Sparkes 2006; Johnson *et al.* 2009; Arnell *et al.* 2013).Congenital megaesophagus mainly occurs in young dogs and is inherited or secondary due to developmental abnormalities in oesophageal innervations or due to improper nerve development in the oesophagus (Bexfield *et al*., 2006). Common clinical signs associated with megaoesophagus are regurgitation, halitosis, aspiration pneumonia, coughing and progressive weight loss. The prognosis

for canine megaesophagus is generally considered as guarded. Elevated feeding is a common palliative treatment adopted for this condition.

CASE HISTORY AND OBSERVATION

A one-year-old intact male Great Dane was presented with a history of chronic regurgitation of small amounts of undigested solid food for the past eight months. The animal weighed 52 kg and body condition scoring was 4/5. Mild degree of halitosis was observed, which could possiblybe due to chronic regurgitation. Routine hematobiochemical examination (Table 1) wasnormal for the breed and age. No abnormalities could be detected on routine abdominal ultrasound examination. Contrast radiographic studies of the oesophagus revealed a segmental dilatation of the thoracic oesophageal segment from the thoracic inlet to the diaphragmatic area, confirming the diagnosis of megaesophagus.

Table 1. Haematological and Biochemical findings in the dog

Parameters	Values
HGB (g/dL)	12.8
HCT (%)	41.8
WBC (x10^3/microL)	15700
PLT (no/microL)	320000
Creatinine (mg/dL)	1.1
ALT (IU/L)	36

TREATMENT AND DISCUSSIONS

Treatment protocol was directed towards reduction of clinical signs associated with megaoesophagus and with the intention of ensuring a prolonged and healthy life and preventing the possibility of aspiration. The owner was advised to feed a high-calorie, semisolid diet, keeping the animal in an upright position, at about 45 to 90 degrees to the floor, so as to allow the smooth passage of food by gravity. Pet

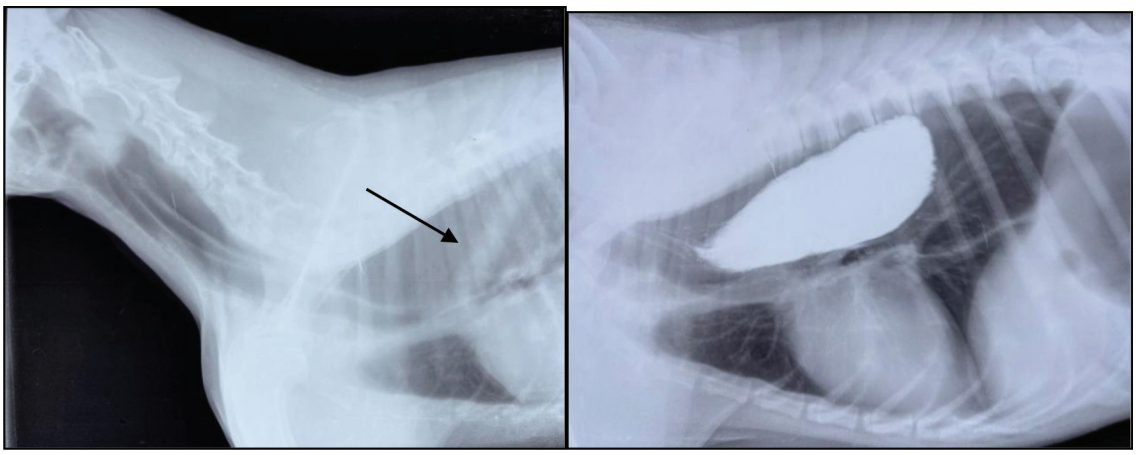

Fig.1. Normal and Barium Contrast Radiograph

was kept on omeprazole for 5 days to avoid gastroesophageal reflux and a multivitamin suspension to improve the general condition. Regurgitation completely ceased after the feeding procedure was modified and the pet showed increased activity without the intermittent episodes of dullness that had previously been observed following regurgitation.

Animals with congenital idiopathic megaesophagus have a fair prognosis. With adequate attention to caloric needs and prevention of aspiration pneumonia, many animals will develop improved oesophageal motility over several months. The pet owner must be committed to months of physical therapy (Washabau, 2003). If medically managed, some puppies may develop a functional oesophagus and mature normally, in others the dilatation may persist but nutritional support may be sufficient to allow skeletal maturation (Watrous and Blumfield, 2005).

Megaesophagus can be a challenging condition to manage. Most dogs with this condition are often underweight and may require a high-calorie diet, which can be met with wet or canned food. However, in this case, the pet was in good body condition at the time of presentation. The owner was advised to mince the food before feeding and to feed the dog in an elevated position to facilitate the smooth passage of food. Dietary management is of central importance - it is important to try various options such as dry food kibbles, canned food in meatballs and food blended with water in different consistencies (thick or thin slurry) because each animal may respond differently. Dogs and cats with megaesophagus should be fed a caloric-dense diet in a vertical position and be maintained in that position for 10–15 minutes after the meal in order to use gravity to facilitate aboral movement of the food bolus (Gaschen. 2018). The Bailey chair, which is designed specifically for dogs with megaesophagus, to support them in the upright position for feeding, can also be used for the same.

In patients with megaesophagus, managing aspiration is just as important as managing regurgitation. Owners should be advised and made aware of the possibility of aspiration pneumonia. Pulmonary infections should be identified by culture and sensitivity and an appropriate antibiotic selected for the offending organism(s). This may be accomplished by transtracheal wash or by bronchoalveolar lavage at the time of endoscopy. Due to the aspiration of the regurgitated material many patients develop aspiration pneumonia and it is a common complication of megaoesophagus (Tams, 2003).

Many medical therapies have been

advocated for stimulating oesophageal peristalsis or diminishing lower oesophageal sphincter tone in affected animals. Metoclopramide and cisapride are smooth muscle prokinetic agents that are not likely have much of an effect on the striated muscles of the canine oesophageal body (Washabau and Hall, 1995).Because of the high prevalence of oesophagitis in patients with megaesophagus, sucralfate suspension should be administered to facilitate mucosal healing (0.5–1 g/dog q8h) (Gaschen, 2018). Bethanechol is a cholinergic agent that has been shown to increase oesophageal motility in some dogs and can be used in the management of clinical cases of idiopathic megaesophagus at dose rates of 5 to 15 mg/dog PO q8h, starting with a low dose to minimize risk of cholinergic crisis (Gaschen. 2018).Acquired megaoesophagus due to myasthenia gravis can be managed by administration of acetylcholinesterase inhibitor pyridostigmine at 1–3 mg/kg PO q12h, in this case also taking care to begin with a low dose to minimize risk of cholinergic crisis (Gaschen, 2018).

CONCLUSION

A one-year-old intact male Great Dane was presented with a history of chronic regurgitation and upon clinical examination and diagnostic surveying, the case was diagnosed as congenital megaoesophagus and the management protocol adopted in this case was elevated feeding only and that too semi-solid food or wet food. The frequency of regurgitation and the quantity of regurgitum was effectively reduced upon adoption of the elevated feeding protocol.

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