

PROVENTRICULAR DILATATION DISEASE (PDD) AND MEGAESOPHAGUS IN A BLUE-FRONTED AMAZON PARROT (*AMAZONA AESTIVA*) – CASE REPORT

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ABSTRACT

The present article relates the occurrence of Proventricular Dilatation Disease (PDD) in a 20 years old blue-fronted amazon parrot (*Amazona aestiva*). The bird was raised in captivity and was examined at the Ornithopathology Laboratory of Sao Paulo State University's Veterinarian Hospital, Sao Paulo State, Brazil. The parrot clinically presented regurgitation, tremors and dyspnea. This is the first case of PDD followed by megaesophagus in a blue-fronted amazon parrot (*A. aestiva*). This pathological case was not described in birds at all.

Key words: proventricular dilatation disease, megaesophagus, blue-fronted amazon parrot, ornithopathology.

SÍNDROME DA DILATAÇÃO PROVENTRICULAR (SDP) E MEGAESÔFAGO EM PAPAGAIO VERDADEIRO (*AMAZONA AESTIVA*) – RELATO DE CASO

RESUMO

O presente artigo relata a ocorrência da Síndrome da Dilatação Proventricular (SDP) em um exemplar de papagaio verdadeiro (*Amazona aestiva*), de 20 anos de idade. A ave, criada em cativeiro, foi avaliada no Laboratório de Ornitopatologia do Hospital Veterinário da Faculdade de Medicina Veterinária e Zootecnia da Universidade Estadual Paulista, na cidade de Botucatu, Estado de São Paulo, Brasil. A ave apresentava, clinicamente, regurgitação, tremores e dispnéia. Este é o primeiro relato de SDP em papagaio verdadeiro (*A. aestiva*), sendo acompanhado com megaesôfago, um quadro patológico não descrito em aves.

Palavras-chave: Síndrome da Dilatação Proventricular, megaesôfago, papagaio verdadeiro, ornitopatologia.

ENFERMEDAD DE LA DILATACIÓN PROVENTRICULAR (EDP) Y MEGAESÓFAGO EN UN AMAZONA FRENTIAZUL (*AMAZONA AESTIVA*) – REPORTE DE CASO

RESUMEN

El presente artículo describe la ocurrencia de la Enfermedad de la Dilatación Proventricular (EDP) en un amazona frentiazul (*Amazona aestiva*) de 20 años de edad, creado en cautiverio, que fue examinado en el Laboratorio de Ornitopatología del Hospital Veterinário de la Faculdade de Medicina Veterinária e Zootecnia de la Universidade Estadual Paulista, en la ciudad de Botucatu, Estado de São Paulo, Brasil, con señales clínicos de regurgitación, tremores y disnea. Este es el primer relato de EDP

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en un Amazona frentiazul, con consecuente megaesófago. Este es un cuadro patológico no reportado en aves.

Palabras-clave: enfermedad de la dilatación proventricular, megaesófago, Amazona frentiazul, ornitopatología.

INTRODUCTION

Birds present a digestive system with some modifications. Some of them are associated to the teeth absence (ORR, 1986). The presence of the ingluvius and a modified stomach is a special characteristic. The birds' esophagus is long and its mucosa is generally keratinized (HILDEBRAND, 1995). It is placed between the trachea and cervical muscles, it comes from the pharynge to the caudal dorsal region of the glottis and it moves away to the right, remaining itself like this all over the neck (EVANS, 1982; DYCE et al., 1990). In carnivorous or seed eaters birds there is a portion in form of a bag, called ingluvius (or crop), that is destined to a temporary food storage (ORR, 1986). This portion is located in the entrance of the right thoracic region, in opposition to the thoracic muscle.

The celomathics esophagus passes by the caudal thoracic region of the trachea and ventrally passes by the pulmonary hillus and finally on the base of heart. It does a fusion with the stomach in the medium plan's left side (DYCE et al., 1990). The birds' stomach consists in two distinct portions that are separated by a constriction. This divides the glandular part that is called proventricle, from the muscular part, called ventricle (or gizzard). The proventricle is characterized by a spindle format with a whitish mucosa, coated by a column epithelium that produces mucus. This epithelium presents innumerable macroscopic rises (papillae) that are responsible by the HCl and pepsine secretion. The ventricle is characterized by a thick muscular layer and also by a convex surface. In its interior there is a keratinized epithelium (coilyn layer) that protects the gastric mucosa (EVANS, 1982; DYCE et al., 1990).

Megaesophagus is a less common disturb related in dogs, cats and equines. This disease can be congenital or acquired, manifesting through frequent regurgitation after meals, cervical esophagus distention, bad breath and loss of weight. Pneumonia by aspiration is occasionally observed. This is an uncertain etiology disease and it is macroscopically characterized by a dilated esophagus that is also limp, with the diameter of two to three times bigger than the normal one. Histologically the vagus nerve can present or not some degenerative injuries (KRUININGEN, 1998).

The proventricular dilatation syndrome or proventricular dilatation disease (PDD) is a highly lethal disease of difficult treatment and uncertain etiology. This reaches the gastrointestinal and nervous system of birds and it is described in more than 50 Psittaciforme order species (LYMAN, 1986; GREGORY et al., 1998). It is clinically characterized by intermittent regurgitation, loss of weight (despite normal appetite of the bird), depression, diarrhea and presence of undigested food in excrements. Depending on the nervous system lesion level, the ataxia can be observed, and also involuntary movements of the head (to the front for backwards), motor and propioception deficit (GREGORY et al., 1998; LUBLIN et al., 2006). The proventricle is observed highly increased at radiograph exams and with a radiopacus content (LUBLIN et al., 2006). Histologically, multifocal lymphocytic leiomyositis in the gastrointestinal organs can be observed (mainly in proventricle). A gangliomyositis in the intestine and lymphocitic polio in the nervous system can also be noted (LYMAN, 1986; GREGORY et al., 1996; LUBLIN et al., 2006). The PDD etiology could be from viral origin, mainly by *Paramyxovirus*, *Herpesvirus*, *Circovirus* and *Picornavirus* (LUBLIN et al., 2006).

The present article relates the occurrence of PDD in a blue-fronted amazon parrot (*Amazona aestiva*) that was examined at the Ornitopathology Laboratory of Sao Paulo State University's Veterinarian Hospital, Sao Paulo State, Brazil.

CASE REPORT

A blue-fronted amazon parrot (*A. aestiva*), 20 years old, male, raised in captivity and receiving seeds of sunflower, vegetables and fruits as the basic feeding was forwarded to the Ornitopathology Laboratory. The bird presented sporadical regurgitation, tremors and dyspnea during four days. According to the animal owner, the bird presented voracious appetite, but after ingesting the food, it regurgitated immediately. The bird had indirect contact with hens (*Gallus gallus domesticus*) and

direct contact with house sparrows (*Passer domesticus*). During the physical evaluation it was observed that the bird presented apathy and ruffled feathers. The presence of ingurgited material was observed at the soil of the bird's cage. A blood sample (1mL) was collected for analysis. The excrements were collected for parasitological examination.

Simple and contrasted (20mL barium sulphate - Labs. Enila S.A., Rio de Janeiro 20970-030 Brazil) radiographic examinations were done. The simple radiography did not present alterations. The contrasted examination evidenced an esophageal dilatation. However, due to a rapid contrast reflux during the exam, it was not possible to observe other alterations or other gastrointestinal organs. The excrement's parasitological examination (direct examination, Faust and Willis tests) did not present parasitic structures. The hemogram did not present significant alterations (only a slight dehydration). Fluid therapy was done by subcutaneous route (10mL NaCl 0.9% solution - Áster Produtos Médicos, Sorocaba 18001-970 Brazil) with addition of 0.5mL B complex vitamins (Ariston, Sao Paulo Brazil) and glucose 5% (HalexIstar Indústria Farmacêutica, Goiânia 74775-027 Brazil). It was applied 0.5 mL of Potenay NF® (Fort Dodge Saúde Animal Ltda., Campinas 13065-858 Brazil) as an expoliative dose and 0.5mg/kg of metoclopramide (Sanofi-Aventis, Sao Paulo 05693-000 Brazil) by intramuscular route. After the stabilization of the clinical status, the bird was kept under domiciliary treatment. The administration of metoclopramide was kept at the dose of 0.3mg/kg by oral route (CARPENTER, 2005). The feeding was given through flexible sounding lead.

Seventy two hours after the treatment beginning, the bird presented a significant clinical improvement and also a regular feeding. However, after this period, it had a gradual fall on the clinical status with an aggravated return of the dyspnea, regurgitation, anorexy, weakness and apathy. Convulsive episodes were observed. According to the bird's clinical worsening, the owner decided to the bird's euthanasia.

Through the necropsical examination, it was observed an increase of the esophagus' diameter, proventricle's congestion and size increase, brain and vagus nerve edema, enteritis, pneumonia and yellow points in liver. In the histopathological examination, lymphocitary infiltrations in the esophagus muscular layer, ingluvius and proventricle, discrete greasy degeneration of liver cells, congestion, inflammatory infiltration points and presence of hemorrhagic content in aerial capillaries and multifocal hemorrhages in cerebral white substance were observed.

By means of clinical, laboratorial, radiographic, anatomopathological and histopathological findings, it was characterized a case of pneumonia by food aspiration associated to megaesophagus and Proventricular Dilatation Disease (PDD). This is the first case of megaesophagus associated to PDD, especially in an *A. aestiva*. This disease is commonly related to macaws (*Ara* spp.) and cacatuas (*Cacatua* spp.) (LYMAN, 1986). This is being described also in love birds (*Agapornis fischeri*) (MELILLO, 2006), ecleetus parrot (*Ecletus roratus*), sun conure (*Aratinga solstitialis*) and african cinereous parrot (*Psittacus erythacus*) (DONOLEY et al^AWEST TOOWOOMBA VETERINARY SURGERY, TOOWOOMBA QLD 4350; , 2007).

The macroscopic and microscopic alterations, with the observed clinical alterations in the proventricle are similar to the already described cases in the current literature. However, case reports of megaesophagus in birds had not been observed in current literature. The observed alterations are similar to the megaesophagus, described in mammals. The pneumonia by food aspiration probably occurred due to frequent regurgitation presented by the bird. The liver alterations had been attributed to the period in which the bird did not feed itself properly. Although significant injuries have not been observed in the central nervous system, the cerebral edema and the hemorrhages microscopically observed could have occurred due to the recurrent traumas by the convulsive episodes, and these were caused by the nutritional lack during the clinical evolution.

The treatment of PDD is not totally effective, but the soft food supply through esophageal sounding lead, as considered by Lyman (1986), presented an improvement in the clinical status. The bird presented again the symptoms after the owner stopped the application of food by sounding lead. Lublin et al. (2006) observed an improvement in the clinical scene after the application of non-steroidal anti-inflammatory drugs.

This is the first case report of a proventricular dilatation disease followed by megaesophagus in a blue-fronted amazon parrot (*A. aestiva*). This is a non-described pathological scene in birds.

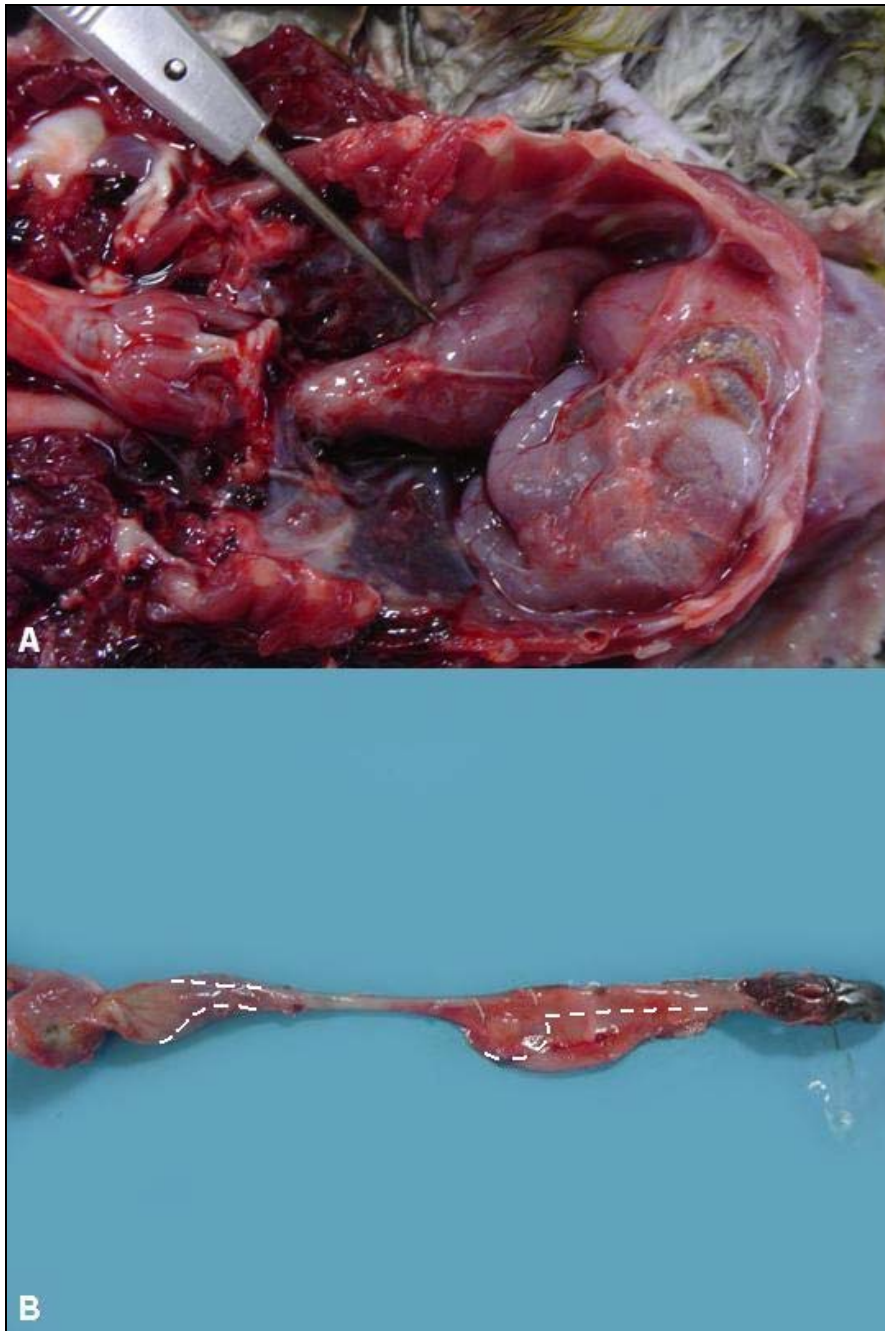


FIGURE A. Proventricular dilatation and congestion. Proventriculus represents a big portion of celomathic cavity – it is normally restrict between the last ribs (observation: liver and hearth were removed for better proventriculus visualization).

FIGURE B. High digestory tract dissected (left to right): esophagic dilatation in cervical portion including ingluvius and dilatation of distal portion of esophagus and distal third of proventriculus (pointed white line indicate the normal diameter of structures).

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