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PREFACE

Academic,

University experiences throughout of training student of veterinary medicine determine the quality of future veterinary medicine. Monitoring activities in the various areas within the scope of the professional practice of veterinary medicine provide the opportunity for academics to improve at a technical and intellectual level. Reports of cases followed during training in voluntary or paid internships serve the purpose of improving identity related to clinical case monitoring. University writing develops skills, in addition to practice, in which the academic follows veterinary medicine practice and develops academic production skills of clinical case, creating memories related to the experience of clinical practice. Thus, the UNIVINTE veterinary medicine course provides the opportunity for the publication of clinical cases followed by veterinary medicine students, called academic experiences. Considering Brazil, a competent country in the field of veterinary medicine, advised by extremely qualified veterinarians, encouraging the veterinary medicine course is justified, that academics seek to improve their knowledge in association of various broad areas within the scope of the veterinary medicine profession. Thus, technical improvement will provide support for intellectual improvement. Furthermore, providing opportunities for the dissemination of clinical cases in veterinary medicine will help communicative development in veterinary medicine at a national level, as scientific writing is considered the method of transmitting professional information. This way, this e-book aims to help veterinary medicine students improve their theoretical and practical knowledge, in addition to helping to disseminate veterinary medicine.

SUMMARY

RADIAL FRACTURE: REPORT ON THE IMPACT OF LONG BONE GROWTH SPECIFICITY

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ABSTRACT: Fractures of long bones in growth situations require treatment with diagnostic techniques and specific surgical techniques. The radius and ulna of dogs are more specific long bones and the diaphyseal fracture is compromised in most situations at the medial and distal level. The causes of accidents are at the top of these injuries. Consequences of secondary injuries also occur and may have a worse prognosis. Treatment evaluated by a specialist veterinarian such as an orthopedic surgeon is necessary for effective results.

Keywords: Fractures. Long bones. Corticosteroids. Radius and ulna.

INTRODUCTION

Fractures of long growing bones are frequent in the routine of orthopedic surgeons for small animals in veterinary medicine according to Henry and Johnson; 2007. Diaphyseal fractures generally compromise the mid-to-distal shaft of both the radius and ulna. As these fractures are generally secondary to trauma, the animal must be thoroughly evaluated to detect concomitant injuries. Small or miniature breed dogs often fracture the radius and ulna with seemingly minimal trauma from a jump or fall. These fractures are also associated with a high complication rate, as previously described by Fossum, T. 2002. The most common causes include automobile accidents (PROBST, C.; 1990). On physical examination, palpation of the

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limb reveals edema, pain and crepitus, it may be open and there may or may not be loss or substantial damage to adjacent soft tissue. Affected animals often appear to have abnormal proprioceptive responses because they are reluctant to move the limb (FOSSUM, T.; 2002). Imaging diagnosis is essential after physical examination and stabilization of the patient, it is part of the orthopedic examination and can provide valuable information regarding the presence, location, type and complexity of fractures, as well as potential complications that may be associated with the fracture (JOHNSON, A.; 2007a). Radiographs must be taken with medial lateral and craniocaudal views of the fracture site before selecting the treatment method, so that the type of fracture can be correctly defined (BLOOMBERG, M.; 1986; PROBST, C.; 1990). In fractures of long bones, the proximal and distal joints must be included in the radiographic examination (JOHNSON, A.; 2007a). Complete blood count and serum biochemistry assessment should be performed to assess the animal's status for anesthesia and to determine whether concomitant injury or damage to the renal and hepatobiliary systems has occurred. (FOSSUM, T.; 2022). The initial management of these fractures includes the application of a soft, padded bandage to the entire limb, starting from the distal third of the humerus to the fingers, or temporary immobilization with bandages, such as the modified Robert Jones bandage. This temporary adaptation prevents further displacement of the fractured area, injuries to vital structures caused by sharp fragments and reduces post-traumatic edema of soft tissues (BLOOMBERG, M.; 1986; PROBST, C.; 1990). The plates are adaptable to most fractures of the radius and ulna. For shaft fractures, the usual procedure is to simply apply a plate to the radius. The most frequently used plate is DPC, as it has developed potential for compression at the fracture site. A semitubular plate must be of sufficient size, and the curvature must be minimal when molding it to adapt to the bone surface (Brinker, J. and Piermattei, Flo.; 2006). Currently, the mechanical emphasis on internal fixation of bones has been replaced by the biological approach and a new concept known as biological osteosynthesis or minimally invasive osteosynthesis has been followed (PIERMATTEI, D.; 2014). In this study, we report a case of a radius fracture, with open osteosynthesis performed and the fracture reduced with a titanium plate from the blocked lyncevet system.

CASE REPORT: **Radius fracture**

INTRODUCTION

On March 17, 2023, a 5-month-old female Pinscher dog arrived for treatment, complaining that she had slipped on the wet floor at home. She was 5 months old, on the same day she had an x-ray which showed a complete closed oblique fracture of the diaphysis of the right radius and ulna, showing severe misalignment of the anatomical bone axis. Edema of adjacent soft tissues on the right forearm (Figure 1). Results: On March 21st, the surgical procedure of radio osteosynthesis was carried out, using a locked titanium lyncevette plate, 1.2 mm system, placing 3 screws of 1.2 mm distally. Immediately, radiological imaging was performed to evaluate the fixation plate (Figure 2). In the immediate postoperative period, ampicillin 20 mg/kg IV, meloxicam 0.1 mg/kg SC, dipyrone 25 mg/kg SC and methadone 0.2 mg/kg IV were used, immobilization bandaging was applied for 7 days, absolute rest for 30 days, prescribed amoxicillin + clavulanate 12.5 mg/kg, BID, for 10 days, Flamavet 0.1mg/kg BID for 5 days. The patient returned for follow-up on March 27, eating and drinking normally, urinating and defecating normally. The patient came without a bandage which was redone, the stitches were dry, without inflammation and he was supporting the operated limb, the stitches were removed after 5 days and requested another 7 days of absolute rest, but this rest was not carried out, it was seen the patient running and being encouraged to play during the period when post-surgical efforts were contraindicated. On April 20th, 30 days after surgery, we observed bone consolidation and the bone implant was removed. Immediately, radiological imaging was performed to evaluate bone consolidation (Figure 3). In the immediate post-operative period, the same medications were taken as in the first surgery and at home, enrofloxacin 10mg/kg SID, meloxicam 0.1mg/kg 3 days SID, and dipyrone 25mg/kg BID 5 days, immobilization bandage for 7 days and absolute rest were prescribed. for 30 days. Ten days after removing the implant, the patient returned without a bandage and with a new fracture in the same bone. The patient underwent a new surgery on May 11th, in which medical dog implants in 1.5 mm blocked surgical steel were used, after reduced the fracture, tissue approximation and skin fracture, bone marrow was collected from the humerus in the same limb and injected at the fracture site. Immediately, radiological imaging was performed to evaluate the

fixation plate (Figure 4). In the immediate postoperative period, ampicillin 20 mg/kg IV, meloxicam 0.1 mg/kg SC, dipyrone 25 mg/kg SC and methadone 0.2 mg/kg IV were used, and again immobilization bandaging was applied for 7 days, absolute rest for 30 days, prescribed amoxicillin + clavulanate 12.5 mg/kg, BID, for 10 days, Flamavet 0.1mg/kg BID for 5 days. After 45 days of surgery, with signs of consolidation, the process of gradual removal of the implant began, this procedure is also called bone dynamization. Immediately, radiological imaging was performed to evaluate bone consolidation (Figure 5). Dynamization consists of gradual removal of bone fixation, which allows a gradual increase in micromovement in the bone tissue and stimulates the formation of local tissue. On July 16th, 3 medial screws were removed. The patient progressed well and the rest of the implants were removed on July 19th.

DISCUSSION

According to Piermattei, D. 2014, cranial positioning of the plate has been the most widely used method for all diaphyseal fractures, as it is easily accessible and provides a wide and only slightly curved surface. When making the decision for the chosen method, the indication of open reduction for reducible fractures with the application of a plate was also considered by Fossum, T.; 2014. The consolidation time was considered adequate and the chosen implant met expectations, as imaging tests showed bone consolidation and remodeling before the implants were removed, but the spaces previously occupied by screws were configured as bone tunnels in the radius after the implants were removed, offering points of bone fragility. In the case reported, it was observed that the limb suffered a new fracture in a different location than the first fracture and in the location of the bone tunnel left by a screw. After removal of the implant from the first surgery, a lower bone density is also observed than the density observed after removal of the implants with dynamization in the second surgical procedure.

CONCLUSION

Thus, it is concluded that absolute stabilization may have limited action on total bone regeneration after injury, and that in the case of long and flat bones, such

as the radius, the gradual removal of implants stimulates bone deposit in defects formed by implants, and favors the regeneration of bone density.

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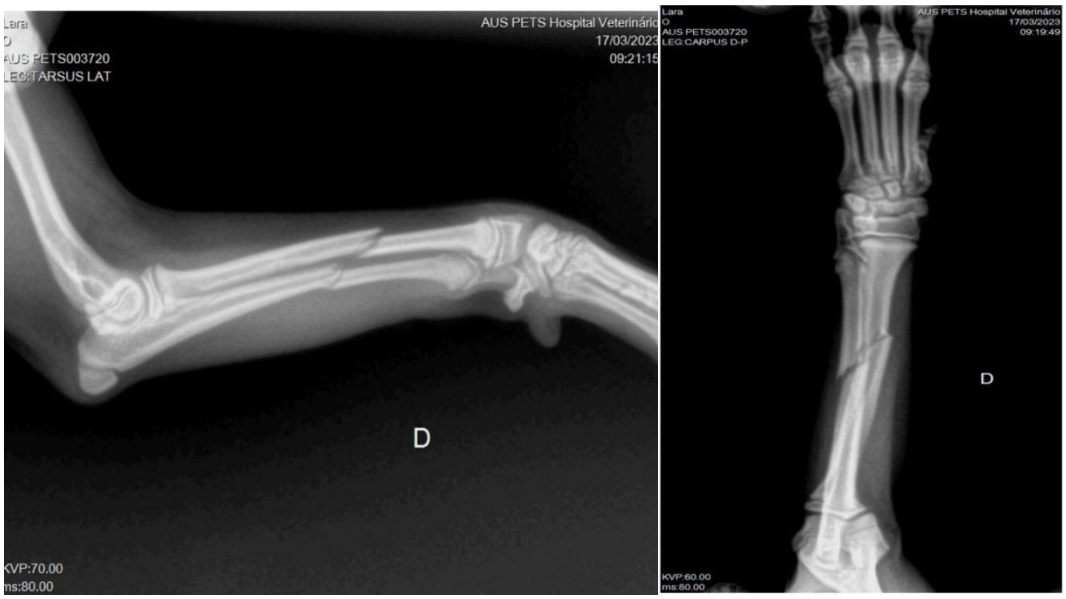
ANEXO A

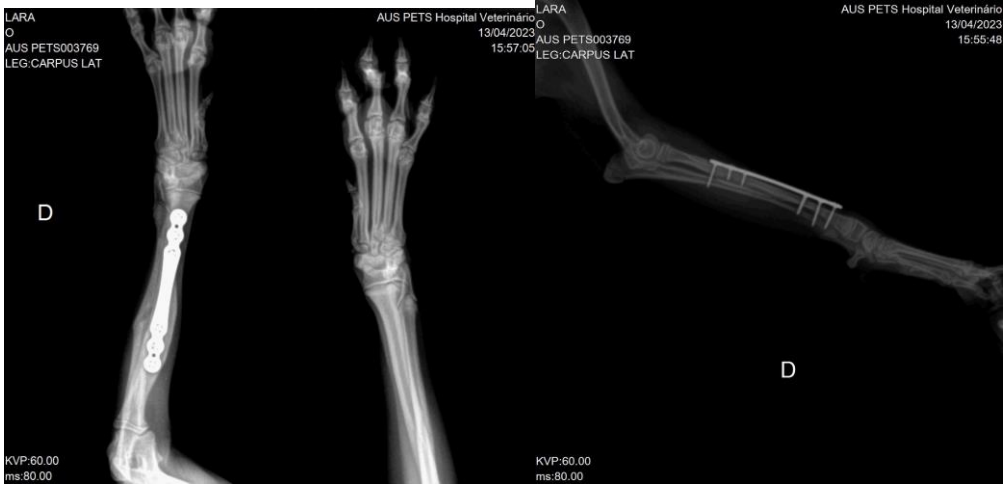
Figures:

Figure 1 - X-ray image of the right thoracic limb, showing the complete closed oblique fracture of the radius and ulna.



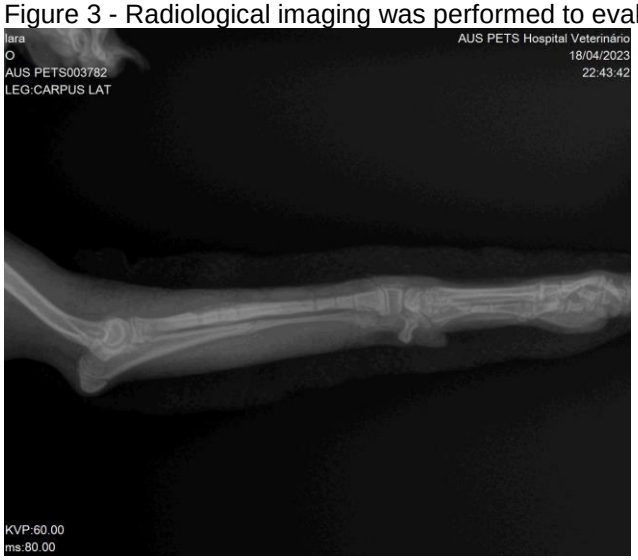
Source: Leon, Cibele. Veterinary doctor.

Figure 2 - Immediate post-operative x-ray of the right thoracic limb.



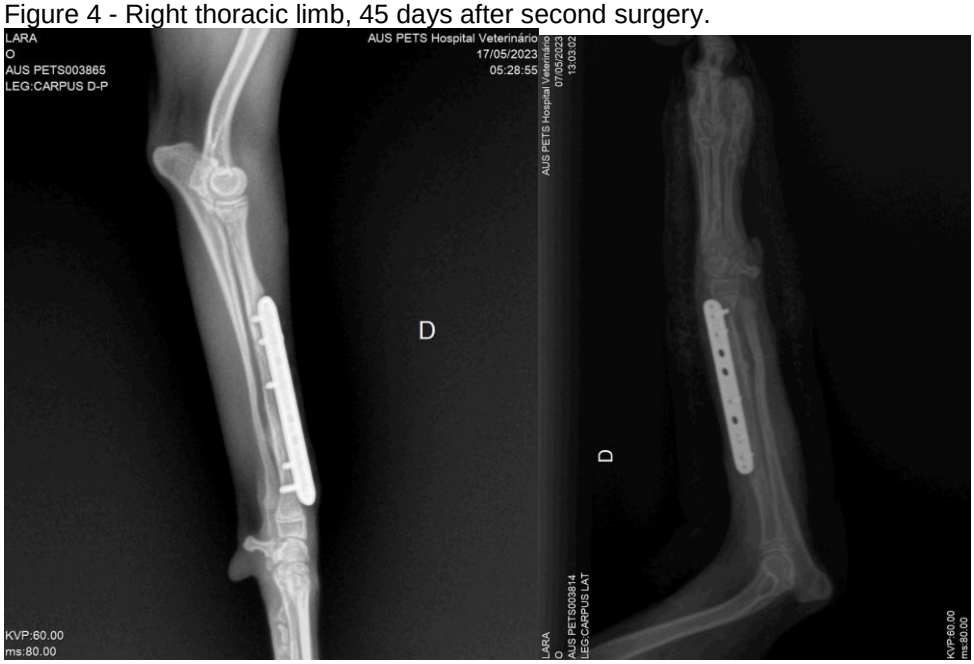
Source: Leon, Cibele. Veterinary doctor.

Figure 3 - Radiological imaging was performed to evaluate bone consolidation.



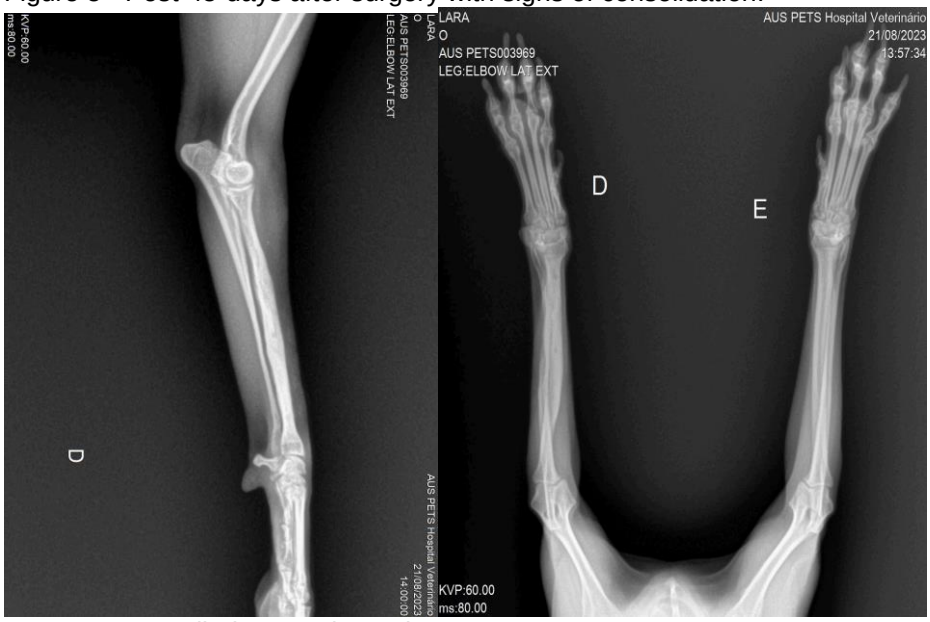
Source: Leon, Cibele. Veterinary doctor.

Figure 4 - Right thoracic limb, 45 days after second surgery.



Source: Leon, Cibele. Veterinary doctor.

Figure 5 - Post-45-days after surgery with signs of consolidation.



Source: Leon, Cibele. Veterinary doctor.

CUSHING SYNDROME: SPECIFICITY OF THE IMPORTANCE OF EACH CASE OF HYPERADRENOCORTICISM IN DOG

Ana Paula Medeiros[1]
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Maicon de Assim[3]
Julia Zabott[4]
Wendel Dietzi[5]
Larissa Joaquim[6]

ABSTRACT: The Cushing syndrome is the pathology which involving the production of corticosteroids or the discovery of elevated and/or relatively autonomous serum concentrations of cortisol. The increase in cortisol called hyperadrenocorticism must be investigated for the diagnosis of excellency. The causes vary according to etiology, epidemiology and specificities between species and breeds of domestic animals. For that the treatment is effective medical examination techniques vary according to the patient profile.

Keywords: Cushing syndrome. Hyperadrenocorticism. Corticosteroids. Dogs.

INTRODUCTION

Hyperadrenocorticism or Cushing Syndrome is an endocrinopathy, that is, a disease related to the endocrine system. Common in dogs, it is characterized by an increase in serum cortisol, which can be physiologically affecting both the adrenal glands and the pituitary gland itself, or iatrogenic, that is, when the body is subjected to prolonged or poorly administered use of corticosteroids. The most common clinical signs are increased urine, abdominal distension, increased appetite, excessive thirst, hair loss, panting (PIANA et al.; 2018). Along with these symptoms, blood tests and even imaging tests, the veterinarian can reach a diagnosis that can be classified as iatrogenic, adrenal dependent or pituitary dependent (NELSON and Cout; 2015),

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hence the importance of knowing the patient's medical history. patient, whether or not such previous treatments may have caused the disease. Treatment for hyperadrenocorticism can be through medications such as mitostane, trilostane, bromocriptine (PÖPPL, A.; 2009) as well as through surgical removal of both the bilateral adrenal glands and the pituitary gland, taking into account the patient's clinical status, knowing that through After surgery, the patient is more likely to die, or even suffer secondary illnesses that will accompany them for the rest of their lives, due to the removal of the glands mentioned above. The present work aims to describe hyperadrenocorticism diagnosed in a female dog, named Lola, of no defined breed, who for a long time had skin problems treated with corticosteroids. Therefore, the case described here can be characterized as iatrogenic hyperadrenocorticism, in which the appropriate treatment was through the use of medication.

CASE REPORT

INTRODUCTION

In the present study, we report the case of a female dog, of no defined breed, attended at the Pet Ouro Veterinary Clinic – Lauro Muller of Santa Catarina, by an endocrinologist veterinary. The owner complained that the animal had a bulging abdomen, even though no weight gain had been observed, in addition to recurrent episodes of vomiting, which is why the owner took it for consultation. Patient with a sweet tooth, with a balanced diet of vegetables and fruits in addition to Royal Cannin Skin Care food, as she had previously had skin problems, approximately three years previously. Tutor revealed that she has always been a lazy patient, there were no episodes of hair loss or even itching, without appearing in pain and very anxious. Feces apparently normal, however, urine was not observed as it was passed on the street. As a constant treatment, he undergoes acupuncture, as he has a parrot's beak, and also has an increased heart rate, but without the need to use medication mediated by a specialist. In addition, the owner informed that he used a lot of corticosteroids due to the skin problem he had. Based on clinical signs, history and anamnesis reported by the tutur and evaluated in this case, we carry out the exam clinic and we requested additional abdominal ultrasound examinations and clinical analysis laboratory examination with blood test collection.

RESULTS AND DISCUSSION

The ultrasound image revealed, among others, bilateral adrenomegaly and increased volume of the adrenal glands, in addition to the presence of biliary sludge. In the clinical and biochemical laboratory examination, increased alanine aminotransferase (ALT) and alkaline phosphatase (AF) were observed. Pöppl, A.; 2009 states whit the diagnosis must be extracted both from the clinical examination added to the patient's history and from increased ALT with reduced renal parameters. Paula *et. al*.; 2018 corroborates the importance of imaging examinations specifically on the adrenals and liver. To complement the diagnosis, a cortisol measurement test was requested after suppression by dexamethasone, where after four and eight hours the cortisol index was 7.15mcg/dL and 5.5mcg/dL respectively, compared to the normal parameter at amount should be less than 1.5mcg/dL. The prescription of trilostane aims to reduce the production of increased glucocorticoids, ursodeoxycholic acid to stimulate the synthesis of bile acids, vitamin mineral amino acid suspension to assist in the metabolism of proteins and fats, omega 3, benzafibrate to assist the moderate increase in serum triglyceride and antiemetic. Pöppl, A.; 2009, says that the use of trilostane, as well as mitotane, bromocriptine, seleginine and even ketoconazole, are effective in treating the endocrinopathy described above, the patient was sent for a thirty-day return visit. Upon return, the patient was sent again for blood collection, in order to measure the same serum parameters, in addition to measuring cortisol again after suppression by dexamethasone, showing stabilization of the observed hyperadrenocorticism. Still under observation over a nine-month window, he no longer shows clinical signs and has stabilized hyperadrenaline.

CONCLUSION

Hyperadrenocorticism can present variations, and may or may not be related to the entire cortisol production cascade, from the pituitary gland, the adrenal glands and even iatrogenic, as the reported case presents. That is why the importance of the clinical examination is mainly the patient's history. It is known that several skin treatments are difficult to diagnose and most veterinarians treat them with corticosteroids, improving the symptoms but not treating the true cause. Therefore,

the excessive use of these medications can lead to serious endocrinopathies such as hyperadrenocorticism; in this case report, there was no need for surgical intervention or even other more in-depth imaging tests. Perhaps the erroneous diagnosis of most endocrinopathies is due to the lack of information about the patient. When it comes to hormones, the professional must pay attention to all areas that revolve around the patient, such as clinical signs, history and exams that match the patient condition with the clinical suspicions of the veterinary medicine. The report also highlights the importance of taking precise medications, aiming to correct the main problem without triggering others, thus treating each affected organ. We observe the importance of medical monitoring over time, so that there are increasingly better chances of prognosis.

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