Chapter 69

Classification of physical status and anesthetic risk of dogs submitted to osteosynthesis

https://doi.org/10.56238/methofocusinterv1-069

Luan Vinicius Tezzei Maia

Andressa Gavassi de Franca

Pollyana Linhares Sala

Thais Camaso de Sa

Mayara da Silva Trentim

Ana Maria Quessada

1 INTRODUCTION

The main case series of orthopedic problems in veterinary clinics of small animals are fractured by traumatic events (SHIJU et al., 2010). The fact that fractures occur more in young animals is probably related to bone fragility characteristics of the age group because they are in the growth phase. In addition, young dogs cannot avoid trauma (VIDANE et al., 2014). Every patient who needs to undergo a surgical procedure is highly indispensable to perform a preoperative evaluation with anamnesis, physical examination, and complementary before being submitted to anesthesia. This evaluation reduces the risk of complications during the surgical procedure and also decreases the rate of post-surgical deaths (SCHWARTZMAN et al., 2011). The classification according to the American Society of Anesthesiologists (ASA, 2014) of patients who will undergo surgical procedures has become an important tool to ensure safety (SCHWARTZMAN et al., 2011). Thus, this classification should be included in the patient's clinical form, thus allowing for to minimize of possible complications during the surgical and anesthetic procedure, providing more efficiently the real prognosis of the patient (LUZ et al., 2012).

2 OBJECTIVE

Classify 33 canine patients undergoing osteosynthesis procedures according to their physical status and anesthetic risk corresponding to the American Society of Anesthesiologists (ASA).

3 MATERIAL AND METHODS

243 dogs were evaluated for seven months. Of this total, 33 dogs (13.58%; 243/33) were referred to surgical procedures of osteosynthesis, having undergone general anesthesia. All patients were clinically evaluated by a single evaluator. These tests consisted of hematological and biochemical evaluation, mucosal staining, hydration status, and measurement of vital parameters (heart rate, respiratory rate, and temperature). After clinical evaluation analysis, the animals were classified as their physical state and anesthetic risk according to the American Society of Anesthesiologists (ASA, 2014). This classification includes patients in I (healthy), II (patients with mild systemic diseases), III (patient with severe systemic disease), IV (patient with severe systemic disease that is a constant threat to life), V (dying patient, no expectation of survival without surgery), VI (brain-dead patient whose organs will be removed for donation purposes). These indicators can also be added to the emergency qualifier (E) (ASA, 2014).

4 RESULTS AND DISCUSSION

In seven months, there were 33 fracture correction surgeries, meaning one surgery per week, which is considered a high index. The number of domestic animals requiring surgical correction due to fractures is high (ELZOMOR et al., 2014). The ASA classification used in the study helps to make pre, trans, and postoperative care decisions (SCHWARTZMAN et al., 2011; LUZ et al., 2012. None of those referred to surgical osteosynthesis were classified as ASA I comprising healthy patients (ASA,2014), submitted to elective surgeries (SHMON, 2007), which is not the case for fractured animals. In the classification corresponding to ASA II, which includes patients with mild systemic diseases (ASA, 2014; RODRIGUES et al., 2017), 12 dogs (36.36%; 33/12) underwent surgeries to reduce simple fractures were included. One patient was classified as ASA II E (emergence) because he presented a mandible fracture, considered an emergency, due to malocclusion, which could lead to anorexia. There were 19 patients referred to surgical osteosynthesis due to complicated fractures that were classified as ASA III (57.57%; 19/33). Of this total, two dogs were classified as ASA III E. Dogs that were classified as ASA III showed signs of moderate systemic disease (FUTEMA, 2002). In the ASA IV classification, there was only one patient who presented multiple fractures. This dog was included in this category because it presented polytrauma leading to multiple fractures. There were no patients classified as ASA V and VI. During the months of study, there were no deaths of patients who underwent general anesthesia for the correction of fractures. In patients classified as ASA II, death rates are small, approximately 0.12% (BILLE et al., 2012). In ASA III animals, the frequency of deaths is 1.32% (LUZ et al., 2012), and may be higher in cases of patients with systemic impairment (BILLE et al., 2012).

5 CONCLUSION

The ASA classification should be applied to each individual according to their particularities. Through this, correctly used evaluation occurs decreased risks during surgery and also the possibility of death of the animal. Thus, the importance of preoperative evaluation is very clear.

REFERENCES

ASA. American Society of Anesthesiologists. **Physical status classification system**, 2014. Disponível em: <file:///C:/Users/Usuario/Desktop/asa-physical-status-classification-system.pdf>.

BILLE, C. et al. Risk of anaesthetic mortality in dogs and cats: an observational cohort study of 3546 cases. **Veterinary Anaesthesia and Analgesia**, v. 39, n.1, p. 59–68, 2012

ELZOMOR, S.T. et al. Prevalence of femoral fractures in dogs and cats. **Journal of Egyptian Veterinary Medical Association, v.** 74, n.2, p.269–278, 2014.

FUTEMA, F. Avaliação pré-anestésica. In: FANTONI, D.T.; CORTOPASSI, S.R.G. **Anestesia em cães e gatos**. São Paulo: Roca, 2002. cap. 5, p. 59-63.

LUZ, L.C. et al. Mortalidade em anestesia de cães e gatos: estudo retrospectivo de 5.366 procedimentos anestésicos. **Archives of Veterinary Science**, v.17, p. 19-21, 2012.

RODRIGUES, N.M. et al. Estado físico e risco anestésico em cães e gatos: Revisão. **PUBVET**, v.11, n.8, p.781-788, 2017.

SCHWARTZMAN, U.P. et al. Complicações anestésicas em cirurgia plástica e a importância da consulta préanestésica como instrumento de segurança. **Revista Brasileira de Cirurgia Plástica**, 26, 221-227.

SHIJU, S.M. et al. Incidences of pelvic limb fractures in dogs: A survey of 478 cases. **Veterinary World.,** v.3, n.3, p.120-121, 2010.

SHMON, C. 2007. Avaliação e preparação do paciente e da equipe cirúrgica. In: SLATTER, D. (ed.) **Manual de cirurgia de pequenos animais**. Manole, São Paulo Brasil.

VIDANE, A.S. et al. Incidência de fraturas em cães e gatos da cidade de Maputo (Moçambique) no período de 1998-2008. **Ciencia animal brasileira,** v.15, n.4, p. 490-494, 2014