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Surgical procedures in cats in a teaching veterinary hospital

Procedimentos cirúrgicos em gatos em um hospital veterinário universitário

Procedimientos quirúrgicos en gatos en un hospital veterinario universitario

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Abstract
The aim of this article was to conduct a survey of surgical procedures performed on cats in a teaching veterinary hospital (TVH) for a period of seven months. Qualitative research was carried out, using percentage and numerical frequencies. In a veterinary teaching hospital, 92 cats submitted to surgeries were accompanied, and, 62 were females (67.39%; 62/92) and 30 males (32.61%; 30/92). Of the total cases, 61 were therapeutic surgical procedures (66.30%; 61/92), and 31 were elective surgeries (33.69%; 31/92). Of the elective surgeries, 22 were ovariohysterectomy (70.96%; 22/31) and nine were orchiectomies (29.03%; 9/31). Among therapeutic surgical procedures, the emergency surgeries were majority, representing 48 cases (78.68%; 48/61. The most frequent therapeutic surgery was ovariohysterectomy with 26 occurrences (42.62%; 26/61). The other surgical therapeutic procedures in order of frequency were: desobstruction urethral, fracture reduction, ocular bulb enucleation, incisional hernia correction, rectal prolapse correction and evisceration correction. There were three deaths, all in the postoperative period. The emergencies were highlighted and, among them, the most frequent surgery was ovariohysterectomy due to dystocic parturition, which may be linked to the use of contraceptives. In the veterinary clinical routine, there is a significant increase in feline patients. In this way, it is considered important that the feline species be the object of study in Brazil
Keywords: Surgery; Emergency; Feline; Ovariohysterectomy.

Resumo

O objetivo deste artigo foi realizar um levantamento sobre procedimentos cirúrgicos em gatos envolvendo a rotina de um Hospital veterinário universitário. Foram acompanhados 92 gatos submetidos a cirurgias, sendo 62 fêmeas (67.39%; 92/62) e 30 machos (32.61%; 30/92). Do total de casos, 61 foram procedimentos cirúrgicos terapêuticos (66.30%; 61/92) e 31 foram cirurgias eletivas (33.69%; 31/92). Das cirurgias eletivas, 22 foram ovariohisterectomia (70.96%; 22/31) e nove foram orquiectomias (29.03%; 9/31). Entre os procedimentos cirúrgicos terapêuticos, as cirurgias de urgência foram maioria, representando 48 casos (78.68%; 48/61). As cirurgias terapêuticas mais frequentes foram as ovariohisterectomias (OH) com 26 ocorrências (42.62%; 26/61). Os outros procedimentos cirúrgicos terapêuticos em ordem de frequência foram: desobstrução uretral, redução de fraturas, enucleação do bulbo ocular, correção de hérnia incisional, correção de prolapso retal e correção de evisceração. Ocorreram três óbitos, todos no pós-operatório. As emergências tiveram destaque e, entre elas, a cirurgia mais frequente foi ovariohisterectomia por parto distócico o que pode estar ligado ao uso de anticoncepcionais. Na rotina clínica veterinária a espécie felina apresenta expressivo crescimento. Desta forma, considera-se importante que os felinos sejam objeto de estudo no Brasil.

Palavras-chave: Cirurgia; Emergência; Felino; Ovariohisterectomia.

Resumen

El objetivo de este artículo fue realizar una encuesta sobre los procedimientos quirúrgicos en gatos que involucran la rutina de un hospital veterinario universitario. Fueron acompañados 92 gatos operados, 62 hembras (67,39%; 92/62) y 30 machos (32,61%; 30/92). Del total de casos, 61 fueron procedimientos quirúrgicos terapéuticos (66,30%; 61/92) y 31 fueron cirugías electivas (33,69%; 31/92). De las cirugías electivas, 22 fueron ovariohisterectomía (70,96%; 22/31) y nueve fueron orquiectomías (29,03%; 9/31). Entre los procedimientos quirúrgicos terapéuticos, las cirugías urgentes fueron mayoritarias, representando 48 casos (78,68%; 48/61). Las cirugías terapéuticas más frecuentes fueron las ovariohisterectomías (OH) con 26 ocurrencias (42,62%; 26/61). Los otros procedimientos quirúrgicos terapéuticos en orden de frecuencia fueron: desobstrucción uretral, reducción de la fractura, enucleación del globo ocular, corrección de la hernia incisional, corrección del prolapso rectal y corrección de la evisceración. Hubo tres muertes, todas en el postoperatorio. Destacaron las urgencias y, entre ellas, la cirugía más frecuente fue la ovariohisterectomía por parto distócico, que puede estar ligada al uso de anticonceptivos. En la rutina clínica veterinaria, la especie felina muestra un importante crecimiento. Así, se considera importante que los felinos sean objeto de estudio en Brasil.

Palabras clave: Cirugía; Emergencia; Felino; Ovariohisterectomía.

1. Introduction

The feline species has specific diseases that often culminate in surgical treatment. Among such conditions, the most common in cats are those that are located in the locomotor system (trauma), in the genito-urinary system, and paratopias (Cruz-Pinto et al., 2015). In addition, many owners seek veterinary services to spay their cats. In this way, many cats are castrated in castration campaigns (Catapan et al., 2014) and also in the surgical routine of veterinary services in Brazil (Silveira et al., 2013). There are still emergency surgical cases that require a solid base of knowledge and skills from the professional to make appropriate decisions, avoiding the death of the patient in question (Rozanski & Rush, 2009). The assessment of perioperative mortality in small animals and the identification of the main factors of death improves clinical practice and enables the reduction of mortality (Brodbelt, 2009).

Given the above, this research aimed to conduct a survey of surgical procedures performed on cats in a teaching veterinary hospital (TVH) for a period of seven months.

2. Methodology

In the study in question, a qualitative method was adopted (PEREIRA et al., 2018) that included a descriptive analysis of the study variables with determination of percentage and numerical frequencies.

This research was approved by the Animal Experiment Ethics Committee of the institution where it was conducted (Protocol nº 063/11). In a Teaching Veterinary Hospital (TVH), a total of 92 cats (in a period of seven months) were accompanied. Records were analyzed, obtaining epidemiological percentages of the aspects: race, age, sex, and surgical interventions performed.

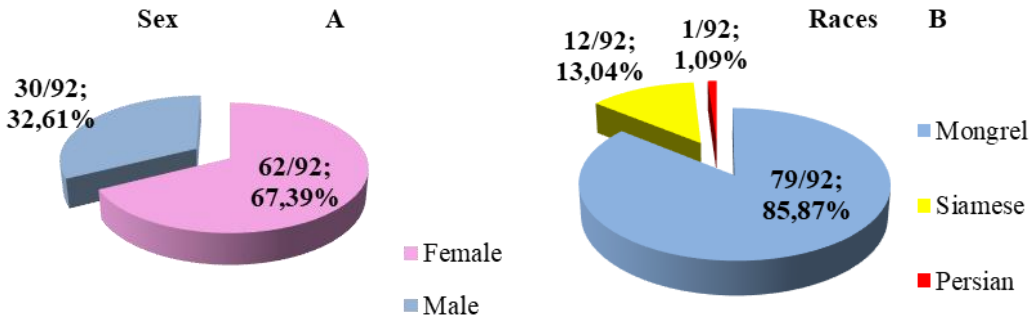
In general, the main complementary exams were: blood count, serum biochemistry, radiography, ultrasound, cytology, histopathology and electrocardiogram. At the end of the evaluations, epidemiological percentages (race, age, sex and main surgical interventions performed), clinical discharges and trans and postoperative deaths were obtained. All cats were followed up until discharge or death. The data were tabulated and submitted to descriptive statistics, the results of which were presented in percentages.

3. Results and Discussion

From the total of 92 cats, 62 were females (67.39%; 62/92) and 30 were males (32.61%; 30/92) (Figure 1 A). The greater number of females submitted to surgical procedures is due to the great demand for surgical sterilization of feline females in the service analyzed and the large number of queens with reproductive diseases, which was also observed in others veterinary teaching hospital (Farghali et al., 2020; Silveira et al., 2013). In this way, of the total number of cases, the most frequent surgical procedure was ovariohysterectomy (OH) both elective and therapeutic, with a total of 48 surgical procedures (52.17%; 48/92).

Most of the animals were mongrel cats (85.87%; 79/92) (Figure 1B). The result observed in relation to the breed reflects the clientele of the TVH where most of the feline patients are of no defined breed, as was observed in another location in Brazil (Rodrigues et al., 2018). About the age the recorded animals were from 29 days old to 10 years old.

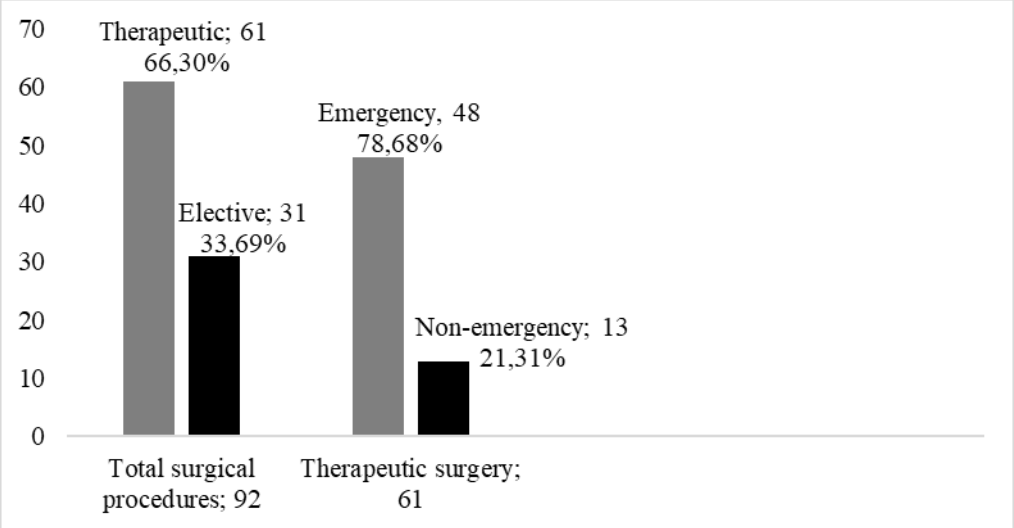
Figure 1. Epidemiological data regarding felines submitted to surgical procedures at a Teaching veterinary hospital for seven months. A: Data referring to sex; B: Data referring to breed. (N = 92)



Source: Personal archive.

Among all the surgical procedures performed, more than half (48/92; 52.17%) were considered emergency (Figure 2), with therapeutic indication (cats with diseases). Of the total surgical procedures, most were therapeutic (61/92, 66.30%) (Figure 2). Among these, most were considered emergency (48/61; 78.68%) (Figure 2). Therefore, the emergencies were highlighted, demonstrating that, in the feline species, within the analyzed service (TVH), most owners seek medical treatment under these conditions as it was observed in another research (Silveira et al., 2013). In emergency procedures, there is a need for quick decisions, care and interventions, since there is a high probability of immediate consequences with risk of death (Rozanski & Rush, 2009).

Figure 2: Numerical and percentage data of surgical procedures in felines at a Teaching veterinary hospital for seven months (n = 92).

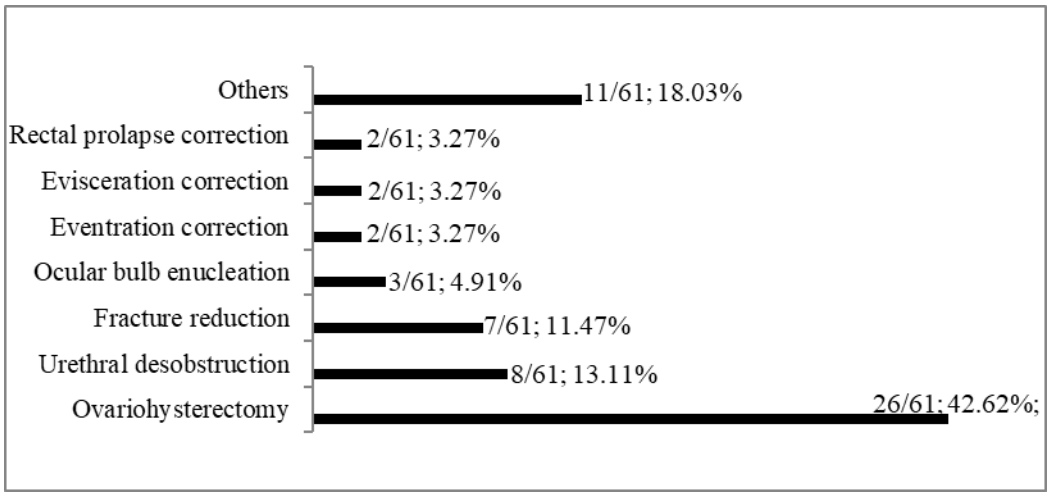


Source: Personal archive.

Among the 92 patients, 31 (33.69%; 31/92) were elective surgeries (Figure 2) represented by 22 ovariohysterectomies (70.97%; 22/31) and nine orchiectomies (29.03%; 9/31). The examinations requested in this group varied according to the age of the feline in question, with only a blood count being requested for the youngest (up to six months of age) and the same examination for the older ones (above six months of age), combined with the biochemical examination. for liver and kidney evaluation. In females, ultrasound was performed to exclude pregnancy. The results of such examinations were normal. The high percentage of orchiectomies and elective OH in the analyzed service is due to the fact that the owners of felines seek the service to perform surgical sterilization as a responsible ownership practice (Catapan et al., 2014). Castration was more frequent in females, which justifies OH as one of the most common elective surgeries in veterinary practice (Silveira et al., 2013) and which meets the objective of many owners who wish to avoid undesirable offspring (Catapan et al., 2014). Among elective surgical procedures, there were no deaths. This result is expected in healthy animals, whose prognosis is considered excellent (Rodrigues et al., 2018).

Among the 61 therapeutic surgeries (61/92, 66.30%) (Figure 2 and 3), the most frequent was OH (42.62%; 26/61) (Figure 3), with 24 (39.3%; 24/61) due to dystocic parturition (Figure 4C) and two by pyometra (3.27%, 02/61). Such situation is similar to that in another veterinary service (Silveira et al., 2013). Many of these cases are due to the indiscriminate use of contraceptives (Silveira et al., 2013). These drugs are the most cited when referring to self-medication by their owners (Silva et al., 2019) and have adverse effects, causing reproductive disorders, including irregularities in the estrous cycle and abortions (Issakowicz et al., 2010).

Figure 3. Numerical and percentage data of therapeutic surgical procedures in felines at a Teaching veterinary hospital for seven months.



Source: Personal archive.

Figure 4. Cats submitted to surgical procedures in a teaching veterinary hospital.

A: Feline with simple fracture, at the mandibular symphysis, treated as an emergency patient. B: healthy animal awaiting elective surgery. C: A cat with a dystocic parturition, with dead fetuses and loss of bloody fluid through the vagina. D: Feline presenting rectal prolapse awaiting surgical replacement. Source: Personal archive.

As for cats with pyometra, a severe uterine infection that can cause acute renal failure (Evangelista et al., 2011), they were immediately submitted to OH, which is the recommended treatment for this disease. In these cases, the delay in seeking care makes the prognosis reserved, which may result in the patient's death (Evangelista et al., 2011). There was no death and probably this favorable result observed in the analyzed period, is due to the conduct adopted in the TVH, of treating pyometra (open or closed) as an emergency, sending the animals for immediate surgery.

The second most frequent therapeutic surgical procedure was urethral desobstruction (13.11%, 8/61) (Figure 3). Such procedure was performed as part of the treatment of feline lower urinary tract disease (FLUTD). The FLUTD needs rapid care (Pinheiro, 2009). If not treated early, obstructive FLUTD can result in secondary renal failure (Pinheiro, 2009). There was a death of a patient with FLUTD, in the postoperative period and the necropsy was not performed. The postoperative period is the most critical in cats, with the highest number of deaths (Rodrigues et al., 2018).

There were seven reductions of fractures (11.47%, 7/61), representing the third among therapeutic procedures. Fractures are common in feline species (Vidane et al., 2014). In a study, the locomotor system disorders were the most common in cats (Cruz-Pinto et al., 2015). In cats, the most effective treatment for fractures involves a surgical approach (Pozzi et al., 2021) as was done in the present study.

Three enucleations of the ocular bulb (4.91%, 3/61) due to trauma were made (Figure 2). Such surgery is recommended in cases of severe trauma and other diseases as infections, neoplasm and glaucoma (Goes et al., 2012).

Two corrections of eventration (incisional hernia) (3.27%; 2/61) were recorded. Incisional hernias occur by dehiscence of the wound in the postoperative period (Lima et al., 2021; MacPhail, 2012; Smeak, 2007), and are common in cats (Cruz-Pinto et al., 2015) mainly due to failures in the operative technique (Siqueira et al., 2013). One of them was complication in the OH. In this case, there was a postoperative failure (licking of the surgical wound) due to the absence of a protective collar, which is one of the main causes of postoperative complications in dogs and cats (Braga et al., 2012).

Two patients had rectal prolapse (Figure 3D) (3.27%; 2/61). This disease is common in young cats (Hedlund, 2008) as observed in present case. Rectal prolapse rectal is one of the main gastrointestinal emergencies of felines, but with a good index of recovery (Hernández, 2010), as it was observed in present study.

Two eviscerations were surgically corrected (3.27%; 2/61) (Figure 2). Eviscerations in animals usually occur through the defect created by dehiscence of the surgical wound (Smeak, 2007). Such condition requires immediate treatment (MacPhail, 2012) considering the possibility of mutilation of the exposed organs (Smeak, 2007). Such conduct was adopted in the study in question and resulted in therapeutic success.

Eleven procedures (18.03%; 11/61) (Figure 2) were represented by only one case each: incisional biopsy, cystotomy, correction of diaphragmatic hernia, orbital exenteration, autologous graft in ocular orbit, exploratory laparotomy, intramedullary pinning repression, removal of intramedullary pin, removal of ballistic projectile, removal of cutaneous tumor and suture of cutaneous wound.

In the case of diaphragmatic herniorrhaphy, the animal recovered completely although it is a serious infirmity (Besalti et al., 2011).

In gunshot wounds, the patient should be stabilized, and surgical reconstruction of the affected site must be made, or in some cases, opt for the use of a conservative treatment (Rozanski & Rush, 2009). In this study, a ballistic projectile (housed in the subcutaneous tissue, near the right tibia) was easily removed with good recovery of the animal.

In the present study, the recorded mortality, was 3.26% (3/92). This mortality rate is similar to that registered in other studies (Rodrigues et al., 2018). The postoperative period is the one with the highest risk for the occurrence of deaths (Brodbelt, 2009; Rodrigues et al., 2018), and all deaths occurred during this period. Of the total of three deaths, two were in emergency surgeries, demonstrating that mortality was higher in this group of patients. Extensive emergency surgeries located in vital organs, such as those detected in this study, have high rates of morbidity and mortality (MacPhail, 2012).

4. Conclusion

In cats, in the analyzed service, most of the surgical procedures were of an emergency nature, and the most frequent surgery was OH due to dystocic parturition.

In the veterinary clinical routine, there is a significant increase in feline patients. In this way, it is considered important that the feline species be the object of study in Brazil, since the literature on cats is lacking in the country. It is important to highlight that, generally, the owner of felines is demanding and has a higher income when compared to dogs. Therefore, it is suggested that the main diseases that affect cats in Brazil be studied, as well as morbidity and treatment proposals to better serve this type of customer

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