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Retrospective study of spinal injuries in cats: A study of 95 cases

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Abstract

Vertebral fractures and luxations are a major cause of neurologic injury in cats. Domestic Short-hair breed, cats under a year old and queens documented higher incidence of vertebral affections. Thoracic vertebrae recorded higher incidence of fractures followed by lumbar vertebrae.

Keywords: Cats, vertebral affections, fractures

Introduction

Spinal injuries are the end result of severe trauma - automobile accidents, falls from heights, bite wounds, gun shots (Bali *et al.*, 2009; Dhanalakshmi *et al.*, 2021)^[2, 4]. As a consequence, these animals present with numerous concomitant injuries and hence, a thorough clinical examination with full body radiography is crucial (Voss *et al.*, 2009)^[6]. Road traffic accidents are the cause of 41-63% of vertebral luxations and fractures. (Bruce *et al.*, 2008)^[3]. Radiography is a swift and economical technique to assess the vertebral column post injury but has only a moderate degree of sensitivity – 72% for fractures and 77.5% for subluxations. Hence, advanced diagnostic modalities like CT and MRI become necessary when surgery is attempted (Orgonikova *et al.*, 2021)^[5].

The present study was conducted in order to record the incidence of spinal injuries in cats which was confirmed using radiography, with regards to their breed, age, gender and type of lesion.

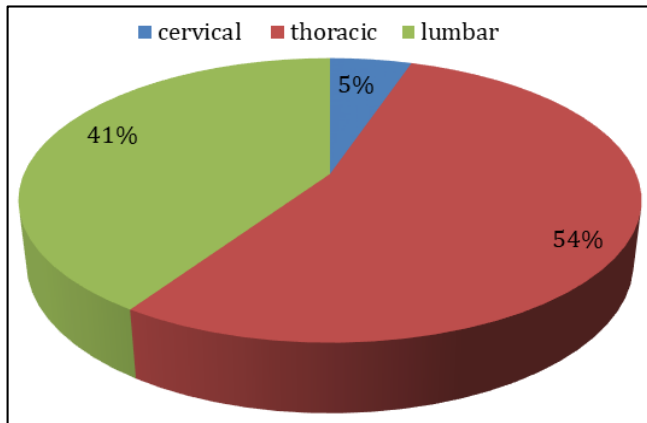
Materials and Methods

A retrospective study of 95 cats suspected for spinal injuries which were then subjected to radiography over a period of one year (January – December, 2022) at the Small Animal Orthopaedic unit of Madras Veterinary College, Chennai, were reviewed. Details including the breed, age, gender and type of injuries (fracture, luxation, fracture and luxation, IVDD) were recorded, to determine their incidence.

Results and Discussion

Domestic Short-hair breed accounts for 96.84% of the affected cats, while 3.16% were purebred Persians. This observation is in line with that of (Dhanalakshmi *et al.*, 2021)^[4], in which the entire study population composed of Domestic Short-hair cats. This over-representation of Domestic Short-hairs may be attributed to the increased prevalence and popularity of this breed among the people of India. It can also be credited to the fact that most purebred cats in the city are often strictly maintained indoors and hence, are not subject to vehicular trauma, falls from heights, dog/cat fights, etc. In contrast, most Domestic Shorthairs are reared as community animals or indoor-outdoor pets, as a consequence of which they are constantly prone to the extreme levels of trauma that predispose them to vertebral injuries.

69.47% of the animals were less than 1 year of age, with the youngest being 15 days; 27.37% were between 2 and 5 years; and 3.16% were greater than 5 years of age, the oldest being 7 years and 6 months. These findings align with those of (Bali *et al.*, 2009)^[2], who reported a significantly higher incidence of vertebral fractures and luxations in cats less than 1 year of age. They opined that this could be due to the kitten's inquisitiveness and naivety in exploring the vast unknown, oblivious to the dangers it holds. This observation though, is in contrast to that of (Dhanalakshmi *et al.*, 2021)^[4], who reported highest incidence in sub-adult cats.



Incidence of Vertebral Fractures

Vertebral fractures and luxations in dogs and cats, part 1: Evaluation of diagnosis and prognosis. *Companion Animal*. 2021;26(2):1-10.

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Queens were more frequently affected than tom cats, with an incidence of 57.9% and 42.1% respectively. (Arun Prasad, 2011) ^[1] reported higher incidence of females (56.86%) than males (43.14%).

The most common bony vertebral injury recorded were fractures, of which cervical fractures (3.15%), Thoracic fracture(33.65%) and lumbar fractures (25.26%) were recorded which is in contrast with observation of (Arun Prasad, 2011) ^[1] who noted higher incidence in lumbar vertebrae (56.10%). (Dhanalakshmi *et al.*, 2021) ^[4] also found highest incidence of thoracic and lumbar vertebrae fractures. Cervical vertebrae fractures (3.15%) and luxations are similar to the findings of (Bali *et al.*, 2009) ^[2]. One cat with a fracture of the dorsal spinous process was also recorded. Vertebral fractures combined with luxations were the next most frequent, occurring at a rate of 18.87%. Thoracic luxations (12.63%) and lumbar luxations (8.42%) were noticed which is in similar observations to (Bali *et al.*, 2009) ^[2]. IVDD and vertebral luxations each occurred a frequency of 6.6%. Fracture of T₁₃ vertebra was found to be the most common at 17.39%. Compressions of T₁₁-T₁₂ and L₅-L₆ junctions had the highest incidence (15.38%).

Conclusion

In cats, vertebral fractures and luxations are a common cause of neurologic injury. A higher incidence of vertebral affections has been reported in domestic short-hair breed cats, cats younger than a year old, and queens.

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