INCIDENCE OF PECTORAL LIMB FRACTURES IN DOGS: A SURVEY OF 331 CASES

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ABSTRACT

A survey was conducted on 331 cases of pectoral limb fractures to study the incidence of pectoral limb fractures in dogs. The incidence was highest in young animals over one and half month to 6 months (36.25 percent). Majority of the fractures were recorded in non-descript dogs (37.76 percent). Male dogs were affected more (59.21 percent) than female dogs of all the age groups. Among the various bones of the pectoral limb, the incidence was highest in radius and ulna (65.25 percent) followed by humerus (16.01 percent). The occurrence of oblique/transverse fractures were more (42.59 percent) than overriding (30.21 percent) and comminuted fractures (18.12 percent).

Key words - Fractures: pectoral limb, Humerus, Radius and ulna, dog.

INTRODUCTION

Forelimb fracture is particularly challenging in orthopaedic surgery as dogs bear most of their weight with the thoracic limbs (Fox, 1997). Pectoral limb fractures are due to high energy trauma and therefore can result in both life threatening injuries, severe and permanent disability (Kolata et al., 1974). Understanding the different types of fracture and their incidence will be helpful to develop improved techniques of fracture fixation in dogs (Aithal et al., 1999). This retrospective study was undertaken to analyse the pectoral limb fractures in dogs.

MATERIALS AND METHODS

A review of 331 clinical cases of pectoral limb fracture recorded in the Radiology Unit of Madras Veterinary College, from April 2007-May 2009 was taken for the present study. All the available records and radiographs were screened and the information regarding the incidence and different types of fractures were recorded.

RESULTS AND DISCUSSION

The results of the present study showed that the pectoral limb fractures were more common in non-descript dogs (37.76 percent) followed by spitz (29.60 percent), Labrador (7.55 percent), Alsatian (6.04 percent), Doberman Pinscher (3.92 percent), Boxer (3.02 percent), Pomeranian (2.71 percent), Great Dane (2.41 percent), Pug (1.81 percent), Dalmatian (1.51 percent), Dachshund (1.20 percent) and others (2 percent). The highest

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incidence of the pectoral limb fracture in non-descript dogs observed in the present study might be due to more number of dog and their free roaming habit which make them more vulnerable to road accident (Maala and Celo, 1975).

Young dogs above one and half month to six months were most commonly affected (36.25 percent). This could be due to their active, playful and are not accustomed to cope with the risks of environment (Kolata et al., 1974). Young dogs get skeletal maturity between 5 months (toy breeds) and 18 months (giant breeds). During that growth phase, both structural and biomechanical properties of immature bone are considerably different from those of adult bone and are characterized by lower strength and stiffness (Torzilli, 1981). In the present study male dogs were found to be more affected (59.21 percent) than female dogs in all the age groups, which might be due to aggressive nature and wandering habits of the male dogs make them more prone to accidents and fractures as reported by Kolata et al., (1974).

Bone wise distribution of fractures of the pectoral limbs revealed that the incidence was highest in radius and ulna (65.25 percent) followed by humerus (16.01 percent), metacarpal (10.27 percent), digits (5.43 percent) and scapula (3.02 percent). Review of literature reviewed that scapula fractures are relatively uncommon in dogs (approximately 1.2% of the canine fractures) because the large muscles surrounding the scapula protect it from direct injury (Cook et al., 1997). Humeral fractures are about 34% of the forelimb fractures and 10% of all fractures (Marcellin et al., 1994) while Ljunggren, (1971) opined that the incidence of humeral fractures was 5.4 - 7.7% in dogs. In the present study, humeral condylar fractures are more because lateral and medial compartments of the humeral condyle normally fuse at 10 weeks of age (Murtagh and Guerin, 2006). Radius and ulna fracture are commonly encounter in small animals and it is about 18% fracture of the dogs as reported by Rudd and Whitchair, (1992).

Pectoral limb fractures were found to be more common on right side (57.70 percent) than left side (42.29 percent). Radius and ulna fractures were recorded in 216 cases. Distal fracture was more (52.31 percent) than shaft (33.79 percent). Fractures of the distal one-third of the radius and ulna are the third most common fracture in dogs. The incidence of these fractures is particularly high in small and miniature breeds of dogs as observed by Lappin, (1983).

Amoung the different types of fractures of the pectoral limb, the occurrence of oblique/transverse fractures were more (42.59 percent) than overriding (30.21 percent) and comminuted fractures (18.12 percent). Higher incidence of oblique/transverse fracture indicate that the predominance of bending or compression forces as the cause of fracture (Smith, 1985).

REFERENCES


