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Incidence of Long Bone Fractures in Goat and Sheep – A Study Report

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Abstract

Fractures of long bones are the major common orthopaedic conditions encountered in goats and sheep. A total of 92 goats and 6 sheep long bone fracture cases were recorded for the period January 2022 to February 2023 in which highest incidence was noted in male animals below 6 months of age. Metacarpal bone accounted for the highest incidence of fractures 26.08%, followed by femur 21.7%, tibia and fibula 14.1%, radius and ulna 14.1% and metatarsal 14.1%. Oblique fractures noted 40.21% of all, followed by transverse fractures 36.95%, and multiple fractures 22.82%.

Key words : long bone fractures, goats, sheep

Orthopaedic affections, especially bone fractures, tend to be a major surgical condition encountered in sheep and goats (Bilgili *et al*., 2008). The most common causes of fractures in goats are falling from a height, followed by automobile accident, hit with objects and dog bite (Gupta, 2015). The metacarpus and metatarsus (50%), tibia (12%), radius and ulna (7%), and humerus (5%) are the bones that sustain fractures most frequently in food animals and mostly between age 1-3 years (Awatif *et al*., 2006). Understanding the various types of fractures and their prevalence will be useful for developing improved techniques of fracture fixation in animals (Aithal *et al*., 1999). Hence the present study was undertaken to analyze the occurrence of long bone fracture patterns in small ruminants.

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Materials and Methods

The aim of this study was to provide a retrospective patient data from 98 small ruminants with long bone fractures regarding the age, breed, sex and location of the fracture.

The study was conducted on small ruminants with weight bearing/non-weight bearing lameness of limbs presented to Large Animal Surgery Unit of Madras Veterinary College Teaching Hospital, Chennai for the period from January 2022 to February 2023. The patient details with regard to age, breed, sex, limb involved were recorded. All the animals were subjected to detailed clinical and orthopaedic examination. Orthogonal radiographs of the affected limb was taken for all the cases.

Results and Discussion

During the study period, a total of 92 goats and 6 sheep with long bone fracture were reported and the incidence with regard to age, sex, breed, type and location of fracture were recorded. Among goats, metacarpal bone accounted high incidence of fracture 26.08% (24 cases) followed by femur 21.7% (20 cases), radius and ulna 14.1% (13 cases), tibia and fibula 14.1% (13 cases), metatarsal 14.1% (13 cases) and humerus 9.7% (9 cases). Left limbs 54.34% (50 cases) recorded higher incidence of fractures compared to right limbs 45.64% (42 cases) in goats. Higher incidence of fractures were recorded below one year of age 69.56% (64 cases) followed by between one to two years 18.47 % (17 cases), and more than 2 years 11.9%(11 cases). The fractures were recorded more common in male animals 53.26% (49 cases) than female 46.73% (43 cases).

Table : Fractures in goats with respect to location and type of fracture

Long Bone	Total No. of Fracture	Location Of Fracture			Type Of Fracture			Simple Vs Compound	
		Proximal	Midshaft	Distal	Transverse	Oblique	Multiple	Closed	Open
Humerus	9 (9.7%)	3 (33.33%)	4(44..44%)	2 (22.22%)	3 (33.33%)	4(44.4%)	2(22.22%)	6(66.66%)	3(33.33%)
Radius and ulna	13(14.1%)	4(30.76%)	5(38.46%)	4 (30.76%)	6(46.15%)	4(30.76%)	3(23.07%)	6(46.15%)	7(53.84%)
Metacarpal	24(26.8%)	3(12.5%)	9(37.5%)	12(50%)	8(33.33%)	12(50%)	4(8.33%)	15(62.5%)	9(37.5%)
Femur	20(21.7%)	7(35%)	7(35%)	6(30%)	8(40%)	7(35%)	5(25%)	12(60%)	8(40%)
Tibia and fibula	13(14.1%)	4(30.76%)	5(38.46%)	4(30.76%)	4(30.76%)	6(46.15%)	3(23.07%)	9(69.23%)	4(30.76%)
Metatarsal	13(14.1%)	5(38.46%)	5(38.46%)	3(23.07%)	5(38.46%)	4(30.76%)	4(30.76%)	10(76.9%)	3(23.07%)
Total	92	26(28.26%)	35(38.04%)	31(33.69%)	34(36.95%)	37(40.21%)	21(22.82%)	58(63.04%)	34(36.95%)

Commonly reported breeds were non-descriptive 76% (70 cases) followed by Tellichery 15.2% (14 cases), Salem Black 6.5% (6 cases) and Beetal 2.17% (2 cases) in goats. Type of fracture observed during the study period were oblique 40.21% (37 cases), transverse 36.95% (34 cases) and multiple 22.82% (21 cases).

Among sheep, highest incidence of fractures were noticed in metacarpal 50% (3 cases) followed by tibia and fibula 33.3% (2 cases) and radius and ulna 16.66% (1 case). Highest incidence of fracture was recorded in age group of less than one year 50% (3 cases) and more than one year 50% (3 cases), highest incidence was observed in females 66.66% (4 cases) followed by male 33.33% (2 cases). Commonly reported breeds are Nilgiri 50% (3 cases), Mecheri 33.3% (2 cases) and Pattanam 16.66% (1 case). In this study, higher incidence of fractures were recorded below one year of age this findings were in accordance with Gupta (2015) and Kumar (2016), who also reported highest incidence of fractures in goats below one year of age. The higher incidence of fracture in young goats in present study may be because of their more population and activeness, which makes them more prone for fractures. Male animals were mostly affected than female animals. These finding correlated with Gupta (2015), Singh *et al*. (2015) and Kumar (2016). Higher incidence in male can be attributed to the fact that, males are more active than female, which predispose them to the factors responsible for causing the fractures.

Non-descriptive breeds recorded highest number, similar findings were reported by Aithal *et al*. (1998) incidence may be because of more population of that breed. Oblique fractures accouted highest followed by transverse and multiple these findings were in accordance with Patel (2014) and Kumar (2016). Metacarpal bone accounted high incidence followed by femur, radius and ulna and tibia similar findings were also reported by Patel (2014). Left limbs recorded higher incidence of fracture when compared to right limbs in goats similar finding were also reported by Kumar (2016).

With regard to type of fracture observed highest noted was oblique followed by transverse and multiple similar findings have been reported by Patel (2014) and Kumar (2016) in goats. On the basis of location, the fracture was observed highest in diaphysis followed by distal third and proximal third similar findings were also reported by Gupta (2015) in goats.

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Dystocia in Small Ruminants – A Retrospective Analysis

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Abstract

A brief retrospective study of seventy small ruminants with history of dystocia was evaluated over a period of 10 months. The clinical cases of dystocia were categorized into fetal (n=44) and maternal causes (n=26). Fetal causes include faulty disposition (n=35) and oversized fetus (n=9) while, maternal causes include incomplete cervical dilatation (n=16) and uterine torsion (n=10). Sixty animals were relieved from dystocia by gentle traction and the rest 10 animals were subjected to caesarean section by lower left flank laparohysterotomy. In our study, it was observed that the major cause of dystocia due to fetal and maternal origin were faulty disposition (79.54%) and incomplete cervical dilatation (61.53%), respectively

Key words: Dystocia, Cervical dilatation, Fetus, Caesarean section

One of the most important factors affecting the reproductive performance of small ruminants is dystocia (Abdul-Rahman *et al*., 1999). Although, dystocia is considered to be a common condition in small ruminants (sheep and goat), it may result in huge economic losses to farmers due to death of new born or dam and adversely affects dam fertility in terms of (uterine infections,retained placenta, and longer

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