**CHAPTER I**

**INTRODUTION**

Bangladesh is an over populated, rural and agrarian country in the world. Livestock is an important component of the mixed farming system practiced in Bangladesh for centuries. About 80% of our population is employed in agriculture and livestock farming. 20% of people are involved in livestock sector as permanent occupation. The contribution of Livestock in the magnitude of Gross Domestic Product (GDP) is about 2.6 % in Bangladesh (Anon, 2010). Ruminant, especially cattle and goats constitute the major portion of the livestock. Most of these animals are reared under smallholder traditional management system in rural areas. The management practices of animals and geo-climatic condition of Bangladesh are favorable for the occurrence of various diseases. But the livestock diseases and disorders of animals are the most important hindrance towards livestock development in our country. In Bangladesh at present, there are about 22.90 million cattle 1.26 million buffaloes, 21.56 million goats, 2.78 million sheep, 212.47 million chickens, 39.84 million duck in our country (DLS, 2009). In addition livestock disease is one of the main important hindrances towards the development of the livestock. As a result the direct impact of animal disease includes loss & productivity, through the death or slaughter of the animals, reduce production of milk, meat & reduce productive capacity. Afazuddin (1985) estimated, TK.1,08067.75 as an annual economic loss due to various parasitic diseases at Savar military dairy farm. Parasitism claims to be the main obstacle in livestock rearing in Bangladesh (Jabber and Green, 1983). Fracture of bones is a feature of accidental surgical affection where ribs are more vulnerable (Duan *et al.,* 2013).

Surgical disorders are the major causes of fatality in animals if the animals are not treated in time. However, surgical disorders are major threat for our economy and failure of surgical intervention provides no alternatives except culling (Berge and Westhues, 1986). The surgical disorders hinder the growth, performance and economic value (Hossain *et al.,* 1986). Surgical affection like hernia, atresia ani, navel ill, myiasis, humpsore, foot diseases, lameness and fracture are the diseases reported to be great loss to the people of Bangladesh (Hossain *et al.,* 1986). External violence produces open wound in the skin and the incidence is more common in ruminants (Nooruddin and Dey, 1990). Healing of wound is one of the most complex biological events in living objects (Gillitzer and Goebeler, 2001) and wound may lead to serious consequences (Mashhood *et al.,* 2006). Myiasis constitutes a major threat to the development of livestock industry and may occur all the year round in the tropics (Millikan, 1999). The occurrence of atresia ani is the second highest along the surgical affection of calves in Bangladesh (Das and Hashim 1996). In addition lameness in cattle is a serious problem and causes. significant economic losses (Bowley, 1993). Contamination of umbilicus is a source of infection leading to septicemia and navel ill in neonates. Urolithiasis can also cause significant economic losses due to urethral obstruction; rupture of the urethra or bladder or death (Parker, 1981).

However,the database information on occurrence of various surgical disorders in animal is not well organized in different geographic locations. A comprehensive database survey is necessary to establish a base line information for future study of the surgical disorders in animal at hill tracts. The present study was undertaken to make a comprehensive scenario of surgical affection in Chittagong region of Bangladesh.

Veterinary hospital is an ideal and reliable source of information about animal diseases and their solution. People from the neighboring areas bring their sick animals to the Veterinary hospital every day. Analysis of the case record gives a comprehensive idea about the disease problems at local areas.

SAQTVH is one of the important locatin for livestock population and most of the common livestock diseases are frequently found in Chittagong Metropolitan area. That’s why this study was conducted at the SAQTVH for twelve months from July 2013 to June 2014 with the following objectives:

1. To determine the prevalence of different diseases and disorders of goats.
2. To study the infection with different demographic variable (age, sex, breed etc).

**CHAPTER II**

**REVIEW OF LITERATURE**

Chronic **wounds** are a challenge for health care. A considerable number of surgical affections are found in goats and associated with defects that affect leather quality, performance or death. A basic principle of clinical management is the removal of sloughing necrotic tissue to prevent wound infection, which delays healing (Wollina *et al*., 2000). The healing of wounds may be delayed or absent due to improper development of angioblast and fibroblast (Ghosh, 2006).

The **urolithiasis** presents a state of unstable over-saturation where a spontaneous precipitation exists and minerals precipitate, the crystals do not dissolve and they add together allowing the growth of the urolith (also called ‘urinary stones’or ‘calculi’).It is a condition of the urinary tract in which insoluble mineral and salt concretions develop and aggregate around a nidus of proteinaceous material mainly within the bladder or urethra (Belknap and Pugh, 2002) but it can occur anywhere in the urinary tract. Abnormal microscopic precipitates in urine are known as crystalluria where as macroscopic concretions are called uroliths.

**Atresia ani**is the failure of the anal membrane to break down to make an anal orifice. It has been reported a most frequently encountered surgical affection in calves (Hossain *et al.*, 1986; Das and Hashim, 1996; Samad, 2008). Anal atresia affects males and females with equal frequency (Das and Hashim, 1996). Perineal inspection reveals the absence of anus. Clinical study suggests that along with indigenous calves, a considerable number of crossbred calves also suffer from various congenital diseases like atresia ani(Das and Hashim, 1996).

**Abscess** disease deserves interest because of its contagious nature, worldwide distribution and lack of effective control measures. It is primarily a disease of sheep and goats, and once introduced into a flock, it is very difficult to control because of its poor response to treatment, its ability to persist in the environment and the limitations in detecting subclinically infected animals (Ivanovic *et al.,* 2009; Williamson, 2001).

**Arthritis** in sheep and goat causes great economic loss specially in it is chronic from which result in sever loss of production , affected animals are usually culled from the flock ,or their carcasses are condemend at the slaughter hours. Arthritis may result from a variety of bacteria , mycoplasma, and viruses , bacterial causes including *Pasteuralla* , *Streptococci , Corynebacteria ,* *Staphylococci , Histophilus , E-coli.*(Dickie.A.S.1986).

Due to geographical and meteorological variations and grazing pattern, the prevalence of **Myiasis** differs considerably throughout the world (Giangaspero and Lia, 1997; Faliero *et al.,* 2001).

**Hernias** have several deleterious effects, such as lowering the productivity and reproductivity of the affected animals. Diagnosis of hernias, based on clinical findings, may be confusing in some instances (Keown 1988, Purohit *et al,.* 1983). It is interesting that the majority of hernias appeared at the site of natural orifices such as the umbilical and inguinal canal of immature animals, thus suggesting their developmental status (Dennis and Leipold 1968). On the other hand abdominal hernias were found in adult goats, a matter which supports the hypothesis that abdominal hernias were mostly traumatic in nature (Gohar *et al.,* 1987).

Locomotion soundness is vital for effective grazing, reproductive and working efficiency of in all classes of livestock (Bokko *et al.,* 2003). **Lameness** is an important disease in ungulate livestock because of its complex etiology. Bokko *et al.,* (2003) reported that lameness impede the overall development of sheep and Eze (2002) noticed that the economic implication of this situation is difficult to quantify. Proportion of lameness is about 15-20% or higher among all livestock diseases in small ruminants (Eze, 2002; Durgun, 1996; Bokko *et al.,* 2003; Mohammed *et al.,* 1996).

**Fracture** of long bones is one of the major common orthopaedic condition encountered in goats and other small ruminants. Frightened or weary goat can be got captured by the limb leading to serious fractures or dislocations. (Smith and Sherman, 2009). Clinical union defined as sufficient bridging callus that allowed weight bearing without additional support to the limb and radiographic union defined as bone union with resolution of the fracture line (Singh *et al.,* 2007).

Incidence of this disease is about 25-60% in cattle (Distl, 2000). Important relationships between **hoof problems** and lameness exist. Overgrown hooves are the most common limb condition that predisposes animals to lameness. Many studies reported similar relations in different species of livestock. In their study, Mohammed *et al.,* (1996) reported that 25% of their goats and 19.5% of their sheep had lameness because of the overgrown hooves. Similarly, Eze (2002) stated that ratio of lameness because of overgrown hooves in their goats was 32% and in their sheep that ratio was 23%.

**Castration** is one of many factors in animal production for several reasons including the ease of controlling, removal of undesirable odor. In addition castration can influence on lean meat, fat deposit in the carcass. Some research shown that the castration by surgical method had effect to fatty acid composition in rat. However, the effect of castration on most parameters of goat performance and carcass characteristics especially meat composition are limited and unclear (Kebede *et al.,* 2008)

Total cholesterol concentration decreased as carcassweight increased, but the percentage of fat increased with liveweight in **castrated** but not in intact goats (Tichenor *et al.,* 1970). Similar results were reported for Boer bucks (Werdi Pratiwi, Mur-ray, & Taylor, 2006). In contrast Chizzolini, Zanardi, Dorigoni, and Ghidini (1999) reported that the cholesterol content of meat is associated with its fat content, which means that fattier meat, normally from older animals, contains more cholesterol than leaner meat from younger animals.

**CHAPTER III**

**MATERIALS AND METHODS**

**3.1. Study area and time**

The study was conducted from July 2013 to June 2014 in SAQ Teaching Veterinary Hospital of Chittagong Metropolitan area.

**3.2. Study population**

An investigation was undertaken to determine the surgical prevalence of goats at the SAQ Teaching Veterinary Hospital, Chittagong during the period from July 2013 to June 2014.

**3.3. Data collection**

Information about the patients was collected from the record sheet maintaining in SAQT Veterinary Hospital, Chittagong. The patient register recorded the name of surgical disorder, species, breed, age, sex and month of the year.

**3.4. Case classification**

Clinical case records of 3033 animals from different age were considered. The recorded diseases were classified into three major groups: medicinal, surgical and gynaeco – obstetrical diseases. The surgical diseases of goats were further classified based on species, sex and breed.

**3.5. Data analysis**

The data were checked manually for obvious inconsistencies, recording errors or missing data. The potential errors were evaluated and corrected. Data with suspicious values were excluded. Data were organized in the Microsoft excel spreadsheet and percentages of surgical disorders in different species and seasons were calculated. The percentages of surgical disorders were evaluated by using following formula:

Percentage (%) of surgical disorder =  
Number of surgical affections/Number of total affections x 100

**CHAPTER IV**

**RESULTS**

A total of 3033 animals including 267 cattle, 2706 goats, 53 sheep, 4 horses and 3 buffaloes were available during the study period at SAQTVH from July 2013 to June 2014. The clinical cases were divided into three groups on the basis of treatment required (1) Medicinal, (2) Reproductive and (3) Surgical cases. Among the three types of cases, medicinal cases constituted highest percentage (cattle 65.54%, goat 75.98%, sheep 45.28%, horses 75% and buffalo 100%) in comparison to reproductive (cattle 4.49%, goat 6.36%, sheep 3.77%) and surgical (cattle 29.96 %, goat 17.66%, horses 25%, sheep 50.94%).

**4.1. Table 1: Showing overall prevalence of medicinal, surgical and reproductive cases in animals registered in SAQTVH**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Species** | **Medicinal case** | **Reproductive case** | **Surgical case** | **Total** |
|  |  |  |  |  |
| Buffalo | 3 | 0 | 0 | 3 |
| % | 100.00 | 0.00 | 0.00 | 100.00 |
|  |  |  |  |  |
| Cattle | 175 | 12 | 80 | 267 |
| % | 65.54 | 4.49 | 29.96 | 100.00 |
|  |  |  |  |  |
| Goat | 2,056 | 172 | 478 | 2,706 |
| % | 75.98 | 6.36 | 17.66 | 100.00 |
|  |  |  |  |  |
| Horse | 3 | 0 | 1 | 4 |
| % | 75.00 | 0.00 | 25.00 | 100.00 |
|  |  |  |  |  |
| Sheep | 24 | 2 | 27 | 53 |
| % | 45.28 | 3.77 | 50.94 | 100.00 |
|  |  |  |  |  |
| Total | 2,261 | 186 | 586 | 3,033 |
|  | 74.55 | 6.13 | 19.32 | 100.00 |

Surgical cases of goats are again differentiate to determine percentage of surgical affections individually.Among them highest prevalence was myiasis (32.53%) and least were atresia ani, bursitis, intestinal torsion (0.20%).

**4.2. Table 2 : Surgical cases of goat with frequency and percentages-**

|  |  |  |  |
| --- | --- | --- | --- |
| **Diagnosis** | **Frequency** | **Percentage(%)** | **Cumulative percentage** |
| Synovitis | 2 | 0.40 | 0.40 |
| Abscess | 26 | 5.19 | 5.59 |
| Adhesion of uretheral process | 6 | 1.20 | 6.79 |
| Amputation of tail | 2 | 0.40 | 7.19 |
| Arthritis | 6 | 1.20 | 8.38 |
| Atresia ani | 1 | 0.20 | 8.58 |
| Bursitis | 1 | 0.20 | 8.78 |
| Castration | 48 | 9.58 | 18.36 |
| Cyst | 5 | 1.00 | 19.36 |
| Dog bite wound | 34 | 6.79 | 26.15 |
| Dysuria | 3 | 0.60 | 26.75 |
| Fracture | 33 | 6.59 | 33.33 |
| Haemorrahage in penis | 2 | 0.40 | 33.73 |
| Hernia | 8 | 1.60 | 35.33 |
| Hoof deformity | 41 | 9.18 | 44.51 |
| Horn injury | 7 | 1.40 | 45.91 |
| Ingestion of fishing hook | 2 | 0.40 | 46.31 |
| Intestinal torsion | 1 | 0.20 | 46.51 |
| Lameness | 9 | 1.80 | 48.30 |
| Luxation | 2 | 0.40 | 48.70 |
| Myiasis | 150 | 32.53 | 81.24 |
| Pain in leg | 18 | 3.59 | 84.83 |
| Rectovaginal fistula | 2 | 0.40 | 85.23 |
| Urolithiasis | 32 | 6.39 | 91.62 |
| Wattle operation | 2 | 0.40 | 92.02 |
| Wound | 35 | 7.98 | 100.00 |
|  |  |  |  |
| Total | 478 | 100.00 |  |

Surgical affections are more frequently found in the goats aged <6 months, then 6 month to 2 years and less in >2 years.

**4.3. Table 3 : Surgical cases of Goat according to Age**

|  |  |  |  |
| --- | --- | --- | --- |
| **Age** | **Frequency** | **Percentage** | **Cumulative percentage** |
|  |  |  |  |
| <6 months | 221 | 48.15 | 48.15 |
| 6months-2years | 184 | 40.09 | 88.24 |
| >2years | 73 | 11.76 | 100.00 |
| Total | 478 | 100.00 |  |

**Graph 2: Surgical cases of Goat according to Age**

Surgical affections are found relativly higher in male (55.83%) than female (44.17%) goats in the study.

**4.4. Table 4 : Surgical cases of Goat according to Sex**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sex** | **Frequency** | **Percentage** | **Cumulative frequency** |
| Female | 215 | 44.17 | 44.17 |
| Male | 263 | 55.83 | 100.00 |
|  |  |  |  |
| Total | 478 | 100.00 |  |

**Graph 3: Surgical cases of Goat according to Sex**

Surgical affections are comperatively high in black bengal goats (58.41%), then in cross bred goats (28.02%), jamnapari (7.54%) and non-descriptive (6.03%).

**4.5. Table 5 : Surgical cases of Goat according to Breed**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl no** | **Breed** | **No. of surgical case** | **Percentage** |
| 1 | Black Bengal | 271 | 58.41 |
| 2 | Jamnapari | 45 | 7.54 |
| 3 | Non- descriptive | 32 | 6.03 |
| 4 | Cross | 130 | 28.02 |
|  | Total | 478 | 100 |

**Graph 5: Surgical cases of Goat according to Breed**

**CHAPTER V**

**DISCUSSION**

**Urolithiasis**, the formation of stones in the urinary tract of goat is recorded 6.39% Samad (2001) reported very low percentage (0.02%) of obstructive urolithiasis in animal. It may be due to unavailability of green grass and too much concentrate diet feeding or imbalanced intake of minerals (Hesse *et al.,* 2009). These feed stuffs have high levels of phosphorous and magnesium but relatively low level of calcium and potassium predispose this disease condition.

**Hoof deformity** is one of the common surgical disorders in goats in Chitagong metropolitan area (9.18%). The incidence of foot diseases is higher due to concrete floor, less exercise, unhygienic floor (Huang *et al.,* 1995). It is reported that prevalence of foot disease is higher in male than in female (Noman *et al.,* 2013). Samad (2001) reported 0.70% in goats and 0.02% cases of overgrown hoofs in cattle. Nooruddin *et al.,* (1986) reported 1.12% prevalence of overgrown hoofs in cattle.

**Abscess** was recorded 5.19% in goats (Table 2). Rahman *et al.,* (2012) reported 1.1% cattle and 1.3% goats affected with abscess at Patuakhali Science and Technology University Veterinary Clinic, Babugonj, Barisal. Hossain *et al.,* (1986) who recorded 1.2% cases of abscess in cattle and of Samad (2001) who reported 1.56% abscess cases in goats.

**Myiasis** was recorded 32.53% in goats (Table 2). This observation supports the report of Rahman *et al.,* (2012) who reported 24.7% cattle and 16.4% goats affected with myiasis. Prevalence of 11.0% (Rahman *et al.*, 1972), 1.07% (Nooruddin *et al.*, 1986) and 2.20% (Das and Hashim, 1996) of maggot-infested wounds has been reported in cattle from Bangladesh.

Surgical affection in domestic animal due to **dog bite** is 6.79% in Chittagong region. The higher number of cases found due to high density of stray dog.

Proportion of **lameness** in goats (1.80%) which is about 15-20% or higher among all livestock diseases in small ruminants (Eze, 2002; Durgun, 1996; Bokko *et al.,* 2003; Mohammed *et al.,* 1996).

The occurrence of **hernia** ( 1.60%) **, atresia ani** (0.20%) is very significant in case history recorded in veterinary hospitals. People living in remote from the SAQTVH are unable to contact and cannot bring the diseased animal in the hospital for proper treatment.

**CHAPTER VI**

**CONCLUSION**

Occurrence of diseases was recorded during clinical examination of sick cattle and goats at SAQ Teaching Veterinary Hospital, Chittagong. This study was conducted to detect the present situation of occurrence of clinical diseases and disorders in the study area. From the study, it was observed that goats were most susceptible to myiasis, urolithiasis, fracture, lameness, dog bite wound, hoof deformity etc. These surgical affections cause heavy economic losses in every year. So, regular treatment and proper management should be followed to control the surgical affections. So, further research should be required to determine the accurate prevalence of disease and disorders in cattle and goat. Proper planning and program should be undertaken to prevent and control diseases and disorders of goats in the study area.

**CHAPTER VII**

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