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INCIDENCE OF SURGICAL CASES AT MIRZAPUR UPAZILA IN TANGAIL DISTRICT OF BANGLADESH

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ABSTRACT

This study was to determine the incidence of most common surgical cases in cattle, calves and goats at Mirzapur Upzilla Veterinary Hospital, Tangail during the period from January 2021 to December 2022. The total number of recorded cases were 900 (Cattle=328, Calves=472 and Goat=472) during the study period. The incidence rate of surgical affections in recorded is castration (23.77%), abscess (12.80%), wound (10.97%), fracture (9.76%), Navel ill (8.54%), Vaginal prolapsed (8.54%), Hernia (7.93%), Myiasis (6.71%), Atresia ani (5.49%), ovariohysterectomy (3.05%) and upward patellar fixation (2.44%). In calves, the rate was umbilical hernia (40%), umbilical abscess (15%), atresia ani(12%), naval myiasis and abscess (8%), intestinal prolapsed and fracture of jaw (2%). In small ruminants especially in goat the incidence rate was coenurosis (19.07%), subcutaneouscyst (13.98%), castration (13.56%), abscess (11.86%), fracture (8.90%), myiasis (8.47%), wound (6.36%), atresia ani (5.51%), urolithiasis (5.51%), hernia (4.24%) and ovariohysterectomy (2.54%). The incidence rate was higher in goat (52.5%) , cattle (36.4%) and in calves (11.1%) .Moreover, the incidence rate was higher in male compared with female. In addition, the incidence rate was higher in summer (36.2%) followed by rainy season (32.01%) and winter season (31.2%). Myiasis and arthritis were the most common cases in summer whereas urolithiasis was more common in winter. However, the study might be helpful to compare the incidence rate of surgical cases in other areas of Bangladesh and take necessary action to minimize the incidence of surgical cases.
Key words: surgical diseases, animals, surgery, prevalence, Mirzapur.

INTRODUCTION

Bangladesh is an agricultural country where more or less 80% of the populations live on agriculture and livestock farming. Domestic animals especially goats and cattle are an important part of livestock and plays a crucial role in the conventional economy of Bangladesh (Alam *et al*., 2015). Among the various shortfall to goats and cattle production, diseases are the most important hindrance, which tarnished the productivity of these animals (Sarker *et al*., 1999). Farmers are interested in rearing goats and cattle as because they are very docile, the availability of feed, good fertility rate and multiple kidding efficiency. Economy of Bangladesh is vibrant due to sustainable agricultural and livestock production. There are about 14.8 million goats and 25.7 million cattle in Bangladesh (DLS, 2019-2020). The contribution of Livestock in Gross Domestic Product (GDP) is about 3.47% in Bangladesh (BBS, 2019).The faulty management practices of animals as well as climatic condition of Bangladesh are also encouraging for the incidence of various surgical affections. The occurrence of diseases and disease conditions varies with the species, ages, sex of the animals and time of the year (Hoaque and Samad, 1996; Samad, 2001; Islam *et al*., 2013). Most of the animals are weak, emaciated and non-satisfactory productive performance mainly due to malnutrition and diseases. 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. The importance of surgery is to save or prolong the life of an animal and to hasten the recovery from an injury (Sarker *et al.,* 2014). Additionally, surgery is performed to stop the progression of a disease process, for aesthetic purposes, to cure abnormalities or deformities, to replace a part with an artificial one, for financial reasons, or to make an animal more sociable. Surgery is crucial to aid in the diagnosis of a potential pathological process as well as for research job investigation. For the treatment of both large and small animals, including birds, developed countries have excellent modern surgical facilities. However, these opportunities are less common in

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developing countries due to restricted access to operating rooms, a lack of specialized surgical instruments, and a lack of anesthetic devices needed for both anesthesia induction and maintenance. Despite challenges, veterinarians frequently perform minor surgical procedures on goats and cattle in the field in our country. A few works on surgical affections in goats and cattle were done in Bangladesh Agricultural University Veterinary Clinic (Rahman *et al*., 1972; Hossain *et al*., 1986; Das and Hashim, 1996; Samad, 2001; Samad *et al*., 2002), Haluaghat Upazila Veterinary Hospital, Mymensingh (Sarker *et al*., 1999) and Dairy Cooperatives in Pabna district (Pharo, 1987), Ulipur Upazila Veterinary Hospital, Kurigram (Kabir *et al*., 2010), Chandanaish Upazila of Chittagong District, Bangladesh (Pallab *et al*., 2012) and Patuakhali Science and Technology University Veterinary Clinic (Rahman *et al*., 2012). Therefore, this research work helps to determine the incidence of most common surgical cases recorded in Upazila Livestock hospital at Mirzapur in Tangail district of Bangladesh during the period of from January 2021 to December 2021.

MATERIALS AND METHODS

2.1: Research Area and Duration

This study was performed at the Upazila Livestock Office and Veterinary Hospital, Mirzapur, Tangail from the period of January 2021 to December 2022. A total 900 cases were examined during the study period out of them 472 were goats, 328 were cattle and 100 were calves.

2.2: Data Collection

The data were collected by prescribed questionnaires through owner's complaints as well as visual observations.

2.3: Determination of Age of Animals

The age of individual animal was determined by the examination of teeth and interviewing the owner's of the animals.

2.4: Methods of diagnosis of disease and disorder

The presumptive diagnosis was performed based on history from Owner's, physical examination, clinical signs and clinical examination of animals.

2.5: Study Design

Surgical cases categorized into three groups such as cattle, calves and goats. The recorded cases were further characterized based on the species, age, sex, breed, seasons etc.

2.2. Physical examination

Examination of different parts and systems of individual sick animals were performed through palpation, percussion, auscultation, needle exploration, extension and flexion of limbs, use of mouth gag, local anesthesia and walking of animals as per methods described by Kelly (1979) and Samad *et al.* (1988).

2.3. Clinical examination

Clinical examinations of 472 goats, 328 cattle and 100 calves of different ages were conducted based on history of the diseases, owner's complaint and symptoms to diagnose. History of individual case provides a guideline for examination of the animals. On the basis of the merit of individual case, general clinical examination were conducted and owner's complaint, symptoms and techniques such as microscopic examination, common laboratory techniques used by Rosenberger (1979) and Samad *et al*.(1988) for the diagnosis of the diseases. The temperature, pulse, and respiratory rate from individual sick animal were recorded.

RESULTS AND DISCUSSION

3.1. Incidence of various surgical cases in cattle, calves and goats

The detail result on the occurrence of surgical cases in cattle, calves and goats were shown in Table 1, 2 and 3. During the study period, a total 328 numbers of cattle, 100 numbers of calves and 472 numbers goats were examined for surgical purpose to determine the prevalence of surgical cases in cattle, calves and goats as well as to find out the effect of some factors (age, sex, and breed) on that case.

Table 1. Incidence of surgical cases in cattle

Surgical cases	Incidence rate (%)
Castration	23.77 (78)
Abscess	12.80 (42)
Wound	10.97 (36)
Fracture	9.76 (32)
Navel ill	8.54 (28)
Vaginal prolapse	8.54 (28)
Hernia	7.93 (26)
Myiasis	6.71 (22)
Atresia ani	5.49 (18)
Ovariohysterectomy	3.05 (10)
Upward patellar fixation	2.44 (8)
Total	328

Table 2. Incidence of surgical cases in calves

Surgical cases	Incidence rate (%)
Umbilical hernia	46(40)
Umbilical abscess	18(15)
Atresia ani	12(12)
Naval myiasis	10(8)
Naval abscess	10(8)
Intestinal prolapse	2(2)
Fracture of jaw	2(2)
Total	100

Table 3. Incidence of surgical cases in goats

Surgical cases	Incidence rate (%)
Gid disease	90 (19.07)
Subcutaneous cyst	66(13.98)
Castration	64(13.56)
Abscess	56 (11.86)
Fracture	42 (8.90)
Myiasis	40(8.47)
Wound	30 (6.36)
Atresia ani	26 (5.51)
Urolithiasis	26 (5.51)
Hernia	20 (4.24)
Ovariohysterectomy	12 (2.54)
Total	472

The most prevalent surgical cases in cattle at Mirzapurr Upazila Veterinary Hospital from highest to lowest is castration (23.77%), abscess (12.80%), wound (10.97%), fracture (9.76%), Navel ill (8.54%), Vaginal prolapse (8.54%), Hernia (7.93%), Myiasis (6.71%), Atresia ani (5.49%), Ovariohysterectomy (3.05%) and Upward patellar fixation (2.44%). In calves the most common surgical cases were umbilical hernia (40%), umbilical abscess (15%), atresia ani(12%), naval myiasis and abscess (8%), intestinal prolapsed and fracture of jaw (2%). In goat, most common surgical cases from highest to lowest is coenurosis (19.07%), subcutaneous cyst (13.98%), castration (13.56%), abscess (11.86%),

fracture (8.90%), myiasis (8.47%), wound (6.36%), atresia ani (5.51%), urolithiasis (5.51%) hernia (4.24%) and ovariohysterectomy (2.54%).

3.2. Effects of various factors on the incidence of surgical cases in cattle

3.2.1. Effect of age and sex

The effect of age and sex on the occurrence of surgical diseases in cattle are shown in Table 4. In male animals, the highest incidence (74.6%) of the disease occurred in cattle of 1year plus old. Like male cattle, the incidence rate (25.4%) of the disease in the female was also recorded in one year plus age group. The highest incidences (65.3%) was observed in cattle under one year of age, while the lowest incidence rate (34.7%), was observed in same age group.

Table 4. Effect of age and sex on the incidence of surgical cases in cattle

Age	Male	Female	Total (%)
<1 year (n=188)	122(64.9)	66(35.7)	188(57.1)
1year plus (n=140)	102(72.9)	38(27.1)	140(42.8)
Total	224(68.9)	104(31.1)	328(100)

3.2.2. Effect of breed

The effect of breed on the occurrence of surgical cases in cattle is shown in Table 5. Out of 328 affected cattle, 50 were indigenous and 278 were crossbred, the incidence of surgical affections in indigenous male (64%), female (36%), crossbred male (69.5%), and in female (30.5%). From this observation, it is clear that crossbred cattle are more susceptible for surgical affections compared to indigenous cattle. This observation about age and sex is agreeable to earlier reports (Rahman *et al*., 2001).

Table 5. Effect of breed on the incidence of surgical cases in cattle

Breed	Male (No. %)	Female (No. %)	Total (No. %)
Indigenous (n=50)	32(64)	18(36)	50(15.1)
Cross (n=278)	192(69.1)	86(30.9)	278(84.9)
Total	224(68.3)	104(31.7)	328(100)

3.3. Effects of different variables on the incidence of surgical affections in goat

3.3.1. Effect of age, sex and breed

The effect of age and sex on the incidence of surgical cases in goat is presented in Table 6 and Table7. In male animals, the highest incidence (67.4%) of the disease occurred in goat of 1-24 months of age, and the low incidence rate (32.6%) of the disease in the female was recorded in 1-24 months age group. In an average more surgical affections occurred in 6-24 months age (54.7%). In goats gid disease and subcutaneous cyst is more prevalent than other surgical cases because the parasitic infection is more in Mirzapur Veterinary Hospital like Bangladesh (Rahman *et al*., 1983). The present study is closely related with this information.

Table 6. Effect of age and sex on the incidence of surgical cases in goats

Age	Male	Female	Total (%)
<1 month (n=86)	60(69.8)	26(30.2)	86(18.2)
1-6 months (n=128)	90(70.3)	38(29.7)	128(27.1)
6-24 months (n=258)	110(42.6)	148(57.4)	258(54.7)
Total	260(67.4)	212(32.6)	472(100)

Table 7. Effect of breed on the incidence of surgical cases in Goats

Breed	Male (No. %)	Female (No. %)	Total (No. %)
Local (n=400)	220(55)	180(45)	400(84.7)
Jamunapari (n=72)	40(55.6)	32(44.4)	72(15.3)
Total	260(78)	212(22)	472(100)

3.4. Effects of different variables on the occurrence of surgical affections in calves

3.4.1. Effect of age, sex and breed

The effect of age and sex on the incidence of surgical cases in calves is presented in Table 8 and Table9. In male animals, the highest incidence (68%) of the disease occurred in calves of 1-3 months of age, and the low incidence rate (32%) of the disease in the female was recorded in 1-3 months age group.

Table 8. Effect of age and sex on the incidence of surgical cases in calves

Age	Male	Female	Total (%)
<1 month (n=64)	44(68.8)	20(31.3)	64(64)
1-3months (n=36)	24(66.7)	12(33.3)	36(36)
Total	68(68)	32(32)	100(100)

Table 9. Effect of breed on the incidence of surgical cases in calves

Breed	Male (%)	Female (%)	Total (%)
Indigenous (n=20)	14(70)	6(30)	20(20)
Cross (n=80)	64(80)	16(20)	80(80)
Total	78(78)	22(22)	100(100)

Table 10. Effect of season on surgical affections in goats at Mirzapur Upazila,Tangail

Diseases	Summer	Winter	Prevalence rate (%)
Gid disease	60	30	19.07 (90)
Subcutaneous cyst	46	20	13.98 (66)
Castration	24	40	13.56 (64)
Abscess	40	16	11.86 (56)
Fracture	22	20	8.90 (42)
Myiasis	30	10	8.47 (40)
Wound	14	16	6.36 (30)
Atresia ani	14	12	5.51 (26)
Urolithiasis	10	16	5.51 (26)
Hernia	8	12	4.24 (20)
Ovariohysterectomy	4	8	2.54 (12)
Total	272	200	472

Table 11. Effect of seasons on surgical cases in cattle at MirzapurUpazila, Tangail

Diseases	Summer	Winter	Incidence rate (%)
Castration	30	48	23.77 (78)
Abscess	32	10	12.80 (42)
Wound	16	20	10.97 (36)
Fracture	12	20	9.76 (32)
Navel ill	22	6	8.54 (28)
Vaginal prolapse	12	16	8.54 (28)
Hernia	14	12	7.93 (26)
Myiasis	18	4	6.71 (22)
Atresia ani	10	8	5.49 (18)
Ovariohysterectomy	4	6	3.05 (10)
Upward patellar fixation	2	6	2.44 (8)
Total	172	156	328

Table 12. Effect of seasons on surgical cases in calves at Mirzapur Upazila, Tangail

Diseases	Summer	Winter	Incidence rate (%)
Umbilical hernia	34	12	40 (46)
Umbilical abscess	14	4	15 (18)
Atresia ani	8	4	12 (12)
Myiasis	8	2	18 (10)
Naval abscess	8	2	8 (10)
Intestinal prolapse	2	0	2 (2)
Fracture of jaw	2	0	2(2)
Total	76	24	100

CONCLUSION

It might be concluded that the abscess in cattle, umbilical hernia in calves and gid disease in goats were most prevalent at Mirzapur Upazila Veterinary Hospital. Most Surgical cases occurred mostly in cattle of less than one-year age group, less than one-month age group of calves and 6-24 months age group in goats. The incidence of surgical cases was more common in male cattle, calves and goats than that in females. The higher incidence of surgical cases was encountered in the crossbred cattle in contrast to indigenous cattle. In goat, gid disease was the most incidence rate at Mirzapur Upazila Veterinary Hospital of Tangail, District.

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