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SURGICAL AFFECTIONS OF NEW BORN CALVES IN SELECTED UPAZILAS OF BAGERHAT DISTRICT, BANGLADESH

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ABSTRACT

The goal of this study was to determine the frequency of surgical affections and their associated risk factors in new born calves from the Mollahat, Fakhirhat, and Bagerhat Sadar upazilas of Bagerhat district. From 2015 to 2019, 5238 retrospective data were collected in all three upazilas. The surgical affections were categorized on the basis of sex and breed. The highest number of surgical affections found in all three upazila was navel ill with myiasis (60.44% in Mollahat upazila, 71.43% in Fakhirhat upazila and 60.11% in Bagerhat Sadar upazila). Surgical affections in calves vary in frequency according to the animal's sex and breed. Among the affections, navel ill with myiasis was higher (66.67% and 71.43%) in male than female calves (33.33% and 28.57%) in Mollahat and Fakhirhat upazila, respectively. However, in Bagerhat Sadar upazila congenital cataract was higher (71.43%) in male calves compared to female (28.57%). According to the breed, navel ill with myiasis were higher (64.85%) followed by umbilical hernia (18.74%) in cross breed calves. While navel ill with myiasis were higher (56.01%) followed by abscess (15.93%) in indigenous breed calves. According to the study, environmental conditions or management techniques can trigger surgical affections. It will be feasible to identify the prevalence of various surgical illnesses in this sector based on sex and breed based on the outcomes of this study in order to combat these diseases.

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INTRODUCTION

Veterinary practices are mostly focused on ruminants, which are still valued as key sources of energy for agriculture and food (live meat, milk, and milk products) (Samad, 1988). Surgical affections are those in which the faults or symptoms must be corrected or eliminated via mechanical, manual, or operative procedures. The deformities that a foetus is born with are known as congenital defects (Naik et al., 2011). Umbilical hernia, dermoid cyst, non-functional limb joints, supernumerary fetlock, and atresia ani have all been identified in Bangladesh (Hossain et al., 1980). Hereditary scrotal hernia, cryptorchidism, and hermaphroditism, inherited patellar subluxation, deforming ankyloses of the coffin joints, various limb abnormalities, and inherited mandibular prognathism have all been seen in newborn calves, according to clinical practice. Umbilical abscess, navel sickness, myiasis, dermoid cysts (which appear later after birth), fracture, and wounds/accidents/injury are some of the acquired surgical illnesses of calves (Hossain et al., 1986). These disorders can affect both new born calves and older calves. Complications of castration (e.g. gut tie, cirrhous cord), malicious wounds, haematoma due to traumatic injury, breaking of the jaw and cutting of the tongue due to application of snare, injury to the cornea or eye due to application of obstetrical hook for traction at the time of delivery are examples of acquired surgical affections (Gill and Tyagi, 1972). Because the disorders are acquired, they are referred to as acquired surgical cavalry affection. Congenital deficiencies, on the other hand, may be to blame for the majority of surgical pathologies in newborn calves. A recessive gene, a mutant gene, or chromosomal abnormalities are thought to be to blame (Leipold et al., 1972).

A significant number of cross-bred calves, like indigenous calves, suffer from numerous congenital defects (Mee, 2008). Newborn calves typically suffer from numerous surgical afflictions such as umbilical hernia, atresia ani, dermoid cyst, navel-ill, and umbilical abscess, especially during the calving season in Bangladesh (September to January) (Islam et al., 2020). In other nations, the prevalence of different congenital and acquired surgical diseases in calves is well known. However, in Bangladesh, a comprehensive study on this topic has yet to be completed. As a result, a thorough investigation is required to collect baseline data for future research on surgical affections in calves. The present study was designed to find out the occurrences of surgical affections and also to investigate the risk factors (sex and breed) associated with surgical affections of new born calves at Mollahat, Fakhirhat and Bagerhat Sadar upazila in Bagerhat district.

MATERIALS AND METHODS

Study Area and Duration

This study was aimed to know the surgical affections of new born calves at Mollahat, Fokhirhat and Bagerhat Sadar upazila in Bagerhat district in Bangladesh during the period from January 2015 to December 2019.

Collection of Retrospective Data

A retrospective data of different surgical affections in new born calves were collected from the patients' register book of the Upazila Veterinaries Hospitals at the Mollahat, Fokhirhat, and Bagerhat Sadar upazila in Bagerhat district. A total of 5238 patients (calves) were recorded from the respective three upazilas, Mollahat (N=2978), Fokhirhat (N=588), and Bagerhat Sadar (N=1672). The history of each case was recorded from the data sheet recorded by the hospital authority during the study period as well as direct dealing with the local people come to Upazila Veterinary Hospital.

Study Designs

The recorded surgical affections of animals were classified based on the sex (male and female) and breed (indigenous and cross).

Data Arrangement and Analysis

All data found from the case record, were organized and percentages of surgical affections in different breeds and sex were calculated in the Microsoft Excel 2007. The data collected were coded, scored, compiled, tabulated and analyzed in accordance with the objectives. The prevalence of surgical attachments was estimated as the specific cases of surgical affections divided by the total number of infected animals $\times 100$.

RESULT

The occurrence of various surgical affections of calves according to sex and breed in Mollahat, Fakhirhat and Bagerhat Sadar upazila are presented in Table 1 and Table 2. The highest number of surgical affections found in all three upazila was navel ill with myiasis.

The incidence of surgical affections was higher in male than female calves in Mollahat, Fakhirhat and Bagerhat Sadar upazila. Among the affections, navel ill with myiasis was higher (66.67% and 71.43%) in male than female calves (33.33% and 28.57%) in Mollahat and Fakhirhat upazila, respectively. However, in Bagerhat Sadar upazila congenital cataract was higher (71.43%) in male calves compared to female (28.57%). Navel ill with myiasis were 64.80% for male and 55.62% for female which was higher among the affections, whereas abscess was more frequently found in female (13.67%) than male (8.98%) calves (Table 1).

Table 1. Occurrence of surgical affections in new born calves at Mollahat, Fakirhat and Bagerhat Sadar upazila according to sex

Name of the affections	Sex	Incidence (%)		
		Mollahat (2978)	Fakhirhat (588)	Bagerhat Sadar (1672)
Umbilical Hernia (n = 500)	Male	64.20	65.00	69.23
	Female	35.80	35.00	30.37
Atresia ani et Recti (n = 90)	Male	62.22	55.00	59.65
	Female	37.78	45.00	40.35
Dermoid Cyst (n = 120)	Male	50.00	60.00	51.67
	Female	50.00	40.00	48.33
Navel ill with myiasis (n =1800)	Male	66.67	71.43	69.65
	Female	33.33	28.57	30.35
Abscess (n= 350)	Male	53.43	52.00	57.69
	Female	46.57	48.00	42.31
Fracture (n = 50)	Male	54.00	53.33	60.00
	Female	46.00	46.67	40.00
Congenital cataract (n = 08)	Male	50.00	62.50	71.43
	Female	50.00	37.50	28.57
Amputation of leg (n = 60)	Male	53.33	53.33	58.93
	Female	46.67	46.66	41.07

Legends: n: number; %: percentage

Among all the affections, navel ill with myiasis were higher (64.85%) followed by umbilical hernia (18.74%) in cross breed calves. While navel ill with myiasis were higher (56.01%) followed by abscess (15.93%) in indigenous breed calves.

Table 2 show the effect of breed on various surgical affections of new born calves in Mollahat, Fakirhat and Bagerhat Sadar upazila, respectively. Atresia ani et Recti was higher in Mollahat (66.67%) and Fakhirhat (60%) upazila while abscess was higher in Bagerhat Sadar upazila (60.44%) in indigenous breed. In cross breed calves, umbilical hernia was higher (85%, 60% and 69.23%) in Mollahat, Fakhirhat and Bagerhat Sadar upazila, respectively. In Bagerhat Sadar upazila navel ill with myiasis was higher which 70.15% in cross breed calves.

DISCUSSION

Various surgical affections were discovered in the calves in the study, with myiasis, abscess, and umbilical hernia being the most prevalent. The highest proportionate incidence of navel ill and abscess is thought to be due to poor hygienic management conditions on the farm and in the surrounding area (Mathews, 1999; Shihab et al., 2021). This could be due to contamination during the severing of the umbilical cord.

Table 2. Occurrence of surgical affections in new born calves at Mollahat, Fakirhat and Bagerhat Sadar upazila according to breed

Name of the affections	Breed	Incidence (%)		
		Mollahat (2978)	Fakirhat (588)	Bagerhat Sadar (1672)
Umbilical Hernia (n = 500)	Indigenous	15.00	40.00	30.37
	Cross	85.00	60.00	69.23
Atresia ani et Recti (n = 90)	Indigenous	66.67	60.00	52.63
	Cross	33.33	40.00	47.37
Dermoid Cyst (n = 120)	Indigenous	54.17	60.00	53.33
	Cross	45.83	40.00	46.67
Navel ill with myiasis (n = 1800)	Indigenous	34.44	40.48	29.85
	Cross	65.56	59.52	70.15
Abscess (n = 350)	Indigenous	52.86	60.00	60.44
	Cross	47.14	40.00	39.56
Fracture (n = 50)	Indigenous	56.00	60.00	57.78
	Cross	44.00	40.00	42.22
Congenital cataract (n = 08)	Indigenous	62.50	62.50	57.14
	Cross	37.50	37.50	42.86
Amputation of leg (n = 60)	Indigenous	51.67	53.33	57.14
	Cross	48.33	46.67	42.86

Legends: n: number; %: percentage

The abscesses could have developed as a result of poor umbilical area hygiene. Indigenous calves had a higher frequency of abscesses than cross-bred calves. This could be because cross-bred calves are handled more closely than indigenous calves. However, umbilical hernia in calves may account for the genetic abnormality discovered in lambs by Dennis and Leipold (1968).

Another common congenital anomaly of the gastro-intestinal tract in calves was discovered to be atresia ani, which agrees with the findings of Cohrs (1967). This study also indicated that atresia ani can occur alone or in combination with other malformations; however, only a few calves had other malformations in addition to atresia ani. According to Roberts (1971), atresia ani and other malformations were normal. In calves, the majority of the dermoids were cystic. Hairs, hair follicles, and keratinous tissue were found, which agrees with Angelo et al. (1975). A bilateral dermoid (dermoid in both eyes) was discovered in one calf.

According to this research, congenital cataract in calves is uncommon. This may be because people are more conscious of the need to treat their calves as soon as they experience signs. People in Bangladesh treat their calves with care because calves assist in the milking of cows and the calf is an asset for the farmers (i.e., the economic value of calves is great for the owner), so they want to treat them as well as possible (Salam et al., 2022). The occurrences of surgical affections of new born calves based on sex in all upazilas were significant. Navel ill with myiasis were higher for male cross breed and female indigenous breed. The occurrence of this condition is mainly associated with poor hygienic maintenance of maternity pen, prolonged residency of new born calf in unhygienic maternity pen, lack of adequate and early intake of

good quality colostrum and immediate navel antiseptics after parturition (Waltner-Toews et al., 1986). Abscess was more frequently affected in female than the male calves. As a result of infection of the organ, an abscess may develop in any part of the body. The acute abscess progresses rapidly within three to five days of the initiation of the infection (Mee, 2008).

CONCLUSIONS

This study looked at the incidence of surgical affections in newborn calves at Mollahat, Fakhirhat, and Bagerhat Sadar upazilas in Bagerhat district. It can be concluded that the variation of navel ill with myiasis is more in male and cross-bred calves, according to sex and breed, and female calves have a lower rate of umbilical hernia, atresia ani et recti, abscess, fracture, and leg amputation than male calves.

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CONFLICT OF INTEREST

Authors have no conflicts of interest to declare.

REFERENCES

1. Angelo S J, J P Vanla and G S Malik, 1975: Dermoid cystectomy on nictating membrane in Haryana Bull calf. *Indian Veterinary Journal*, 52: 871-873.
2. Cohrs P, 1967: Nieberie and Cohrs Text Book of Special Pathological Anatomy of Domestic Animals, Oxford London, Edinburgh, New York Toronto, Paris, Braunschweig, Pergamon Press, pp. 389-982.
3. Dennis S M and H W Leipold, 1968: Ovine congenital defects. *Veterinary Bulletin*, 49: 233- 239.
4. Gill B S and R P Tyagi, 1972: A study on fracture repair and management of long bones in large animals with special reference to external fixation. *Indian Veterinary Journal*, 49: 366.
5. Hossain M A, M M Sen and M A Rahman, 1980. A new born calf with a supernumerary limb and atresia ani - A case report. *Veterinary Medical Records*, 2:178-179.
6. Hossain M A, M Shahidullah and M A Ali, 1986. A report on surgical diseases and reproductive disorders recorded at the Veterinary Hospital of Bangladesh Agricultural University, Mymensingh. *Bangladesh Veterinary Journal*, 20:1-5.
7. Islam A, M A Akter and M M Alam, 2020. Prevalence and temporal distribution of surgical diseases in goats (*Capra hircus*) in Mymensingh district of Bangladesh. *Journal of Advance VetBio Science and Technology*, 5:72–80.
8. Leipold H W, S M Dennis and K Huston, 1972. Congenital defects of cattle: Nature, cause and effect. *Advance Veterinary Science and Comparative Medicine*, 16: 103-150.
9. Mathews J G, 1999. Lameness in adult goats. *Disease of goat*. Blackwell publishers; Pp: 66-87.
10. Mee J F, 2008. New born dairy calf management in *Veterinary Clinics of North America*. *Food Animal Practice*, 24: 1-17.
11. Naik G, K Ananda, R B Kavitha, A Kotresh, B Shambulingappa and S Patel, 2011. Navel ill in new born calves and its successful treatment. *Veterinary World*, 4: 326-327.
12. Roberts S J, 1971. *Veterinary obstetrics and genital diseases* New York, Scientific Book Agency, 54: 57- 64.
13. Salam A, M A Akter, M M Rahman and R A Runa, 2022. Prevalence of Surgical Affections and their Risk Factors in Goats in Selected Upazilas of Chuadanga District, Bangladesh. *PSM Veterinary Research*, 7(1): 1-10.

14. Samad M A, 1988. Veterinary Clinician Guide. Bangladesh Agricultural University Campus, Mymensingh. Lyric-Epic Prokasoni.
15. Shihab M M, M A Akter, S J Tamanna and M M Alam, 2021. Investigation on Clinical, Haematological and Serum Biochemical Changes in Experimentally Induced Ruminal Acidosis in Black Bengal Goats. Journal of Animal and Veterinary Advances, 20(5): 118-123.
16. Waltner-Toews D, S Martin and A Meek, 1986. Dairy calf management, morbidity and mortality in Ontario Holstein herds. III. Association of management with morbidity. Preventive Veterinary Medicine, 4: 137-158.