RESEARCH ARTICLE

Retrospective Study on Incidence of Equine Affections Reported at Veterinary Clinical Complex, Anand, Gujarat, India

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Abstract

Retrospective survey was conducted for last three years of equine cases recorded at Veterinary Clinical Complex, Anand Agricultural University, Anand, Gujarat (India) from January 2016 to December 2018. Total 589 cases with various affections of surgical, gynecological, and medicinal were recorded, which included affections of musculoskeletal system (29.03%), colic (19.52%), wound (16.63%), eye (10.52%), fracture (4.41%), genital system (3.73%), neoplasm (3.39%), sinus, fistula and abscess (2.20%), urinary system (2.03%), digestive system (1.69%), hernia (0.33%) and others (6.45%). Out of different surgical affections musculoskeletal system affections (29.03%) were highest and amongst them 49.65% affection were in ceremonial horses (Dancing), whereas 44.75% affections were recorded during training period. Age wise incidence was found highest in 0 to 5 years age group (64.51%), followed by 6 to 10 years (24.27%) and above 10 years (11.20%) age groups. Seasonal incidence was highest in summer (39.04%), followed by winter (32.59%) and lowest in monsoon (28.35%). Sex wise higher incidences were found in males (58.91%) than in females (41.08%), while breed wise incidences were higher in non-descript breed (52.63%) followed by Kathiawadi (16.63%), Marwadi (15.61%), Kutchhi-Sindhi (14.43%), Thoroughbred (0.33%) and Crossbreds (0.33%). These findings reflected the needs for preventive and curative measures to be adopted in precious equines to reduce losses in equine industry.

Keywords: Age, Breed, Equine affection, Incidence, Seasonal, Sex.

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Introduction

The horse (*Equus caballus*) is one of the earliest domesticated species and has played a key role in the development of human societies: acting as a source of food, a means of transport, for draught and agricultural work and for sport, hunting, and warfare (Wade *et al.,* 2009). Mistry *et al*. (2012) reported ten years retrospective investigation on equine case records. A total 176 cases (22.11%) with various kinds of lameness ailments were reported. The highest incidence was recorded in younger age group of less than 2 years as well as in females. The incidence of foot affections was highest followed by hock and fetlock joint disorders. Out of different causes reported wounds had highest incidence followed by laminitis, arthritis, fractures and others. Horses are more commonly associated with wounds than other animal species because of the conditions in which they are kept, work in which they are involved, and their flight and fright temperament, which is their best means of defense against predators (Houpt and Lieb, 2000; Pollock, 2011). Equines were also found to have more incidences of lameness (Mohsina *et al*., 2014), tumours (Kimura *et al*., 2012) and sinus, cysts, and fistulas (Fenner *et al.,* 2019). This paper reports the incidences of various surgical, gynecological, and medicinal affections in equines based on retrospective study of past three years cases at Veterinary Clinics of College in Anand, Gujarat, India.

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Materials and Methods

The retrospective study on equine case records was performed using 3 year's data (January 2016 to December 2018) at Veterinary Clinical Complex and Surgery Department of Veterinary College, Anand Agricultural University, Anand, Gujrat, India. The retrospective data of total 589 horses registered over 3 years study period were collected from patient case records for various surgical, medicinal, and gynecological affections. All cases were classified and analyzed as per disease condition overall, and season, sex, breed, and age wise for incidences of various affections, and were expressed as number and per cent frequency.

Results and Discussion

Overall Incidence of Equine Affections

Among total 589 case records screened for various surgical, medicinal, and gynecological affections, the common affection found in descending order were musculoskeletal system (29.03%), colic (19.52%), wound (16.63%), eye (10.52%), fracture (4.41%), genital system (3.73%), neoplasm (3.39%), sinus, fistula & abscess (2.20%), urinary system (2.03%), digestive system (1.69%), hernia (0.33%) and others (6.45%) (Table 1).

Musculoskeletal system affections recorded were highest 171 (29.03%) amongst all the affections, which comprised of 143 (83.62%) cases of lameness, 26 (15.20%) traumatic injury and 2 (1.16%) congenital anomalies. Lameness incidences belonged to 71 (49.65%) in ceremonial (Dancing) horses, 64 (44.75%) in trainee horses, 5 (3.49%) in racing/exercise horses and 3 (2.09%) in hobby purpose equines. According to Mohsina *et al*. (2014), equines were found to have more incidence of lameness and out of total of 109 lameness cases, 17% were reported with right forelimb affection, 13% with right hind limb affection, 11% with left forelimb affection, 4% with diseases of right shoulder, hind quarter weakness and bilateral forelimb affection each, 3% with lateral dislocation of patella, 9% with affections of both hind limbs, 5.5% with tenosynovitis, arthritis and bone spavin, 7% due to laminitis of right hind and forelimb and 4.5% due to quitter.

Colic was recorded as second highest 115 cases (19.52%) of those 34 cases (29.56%) were occurred as secondary during treatment of primary cause, 29 (25.21%) spasmodic colic, 21 (18.26%) parasitic infestation, 16 (13.91%) high concentrate & low roughage diet and 15 (13.04%) abrupt changes in feed. Equine colic could be divided into two major types according to its origin medically managed or surgical colic depending on severity of pain and involvement of system (Morwal *et al*., 2017).

Wounds recorded as third highest affections in equines with 98 (16.63%) cases. These were further classified in to 11 (11.22%) lacerated wound, 39 (39.79%) maggot wound, 23 (23.46%) proud flesh, 9 (9.18%) puncture wound, 12 (12.24%) auto-mobile/accidental injury, 1 (1.02%) haematoma and 3 (3.06%) contusion. The prevalence of wound in horses is usually high (Singer *et al*., 2003), and traumatic wounds commonly occur in equine (Stashak and Theoret, 2008).

Ocular affections were recorded in 62 (10.52%) horses, which comprised of 23 (37.09%) tumor, 21 (33.87%) eye worm, 3 (4.83%) injury, 2 (3.22%) loss of vision, 2 (3.22%) cataract, 3 (4.83%) corneal ulcer, 6 (9.67%) conjunctivitis, and 2 (3.22%) uveitis. A high incidence of ocular setariasis (9.43%) has also been reported by Arafat *et al*. (2016).

Genital system affections were recorded in 22 (3.73%) cases. Out of those affections 12 (54.54%) were in males and 10 (45.45%) in females. Male affections comprised of 4 (33.33%) castration, 2 (16.66%) paraphimosis, 1 (8.33%) hydrocele, 3 (25%) scrotal swelling, 1 (8.33%) scrotal edema and 1 (8.33%) scrotal laceration, while in female affections 5 (50%) were recto-vaginal fistula /3rd degree perineal laceration, 2 (20%) prolapse of uterus, 2 (20%) cervical injury and 1 (10%) vaginal tumor.

In the current retrospective study, neoplasms were found in 3.39% cases, whereas the incidences of digestive and urinary affections, hernia and miscellaneous disorders were negligible (Table 1). Kimura *et al*. (2012) reported that the most frequent neoplasms in equines were squamous call carcinoma (46%, n = 28) with 26% in the skin, 19% in the eye, 15% in third eyelid gland and eyelid gland, 7% in mouth, 4% penis, prepuce, esophagus, distal limbs and 4% were missing data; sarcoid (10%, n=6), fibroma (8%, n = 5), fibrosarcoma (5%, n = 3), undifferentiated carcinoma (3%, n = 2), hemangiosarcoma (3%, n=2), malignant peripheral nerve sheath tumor (3%, n = 2). Other tumors had a percentage below 1% and 5% (n = 3) were with missing data.

The incidence of sinus, fistula and abscess was just 2.30% in present survey. According to Fenner *et al*. (2019),

Table 1: Year wise overall incidence of various surgical, gynecological, and medicinal cases in equines registered at VCC, Anand, Gujrat

S. No.	*Disease/ System*	*2016*	*2017*	*2018*	*Total*	*%*
1	Wound	33	37	28	98	16.63
2	Sinus, fistula, abscess	02	05	06	13	2.20
3	Hernia	01	01	00	02	0.33
4	Digestive system	02	06	02	10	1.69
5	Urinary system	03	04	05	12	2.03
6	Genital system	11	05	06	22	3.73
7	Musculoskeletal system	57	56	58	171	29.03
8	Fracture	10	10	06	26	4.41
9	Neoplasm	09	05	06	20	3.39
10	Eye	20	20	22	62	10.52
11	Colic	37	37	41	115	19.52
12	Others	11	06	21	38	6.45
13	Total	196	192	201	589	100

the diagnosis and treatment of sinus, cysts was straightforward and carried a good prognosis. In long-standing cases complications secondary to the expansive growth of cysts will dramatically affect the prognosis for full recovery due to pressure-induced changes to facial bones, cheek teeth and nerves. Those secondary complications occurred in older horses may be due to a combination of a longer period of affection and the inflexibility of older horses' bones. Cysts recurred following treatment were 19%.

Seasonal Incidence

In summer season, the incidence of equine affections was higher (39.04%) as compared to winter (32.59%) and monsoon (28.35%). The musculoskeletal affections, colic and genital system affections were recorded more in summer. Equine affections in winter season comprised of 32.59%, with eye and neoplasm incidences two times higher than summer and monsoon seasons. The incidences of sinus, fistula and abscess were found higher in monsoon due to wet and humid environment (Table 2).

Age and Sex Wise Incidence

Age wise incidence of equine affections was found highest in young 0-5 years age group (380/589, 64.51%) due to a greater number of horses were trained in youthful age. The incidences of musculoskeletal injuries and colic were found higher in youthful age. These findings were opposite to observations reported by Reeves *et al*. (1989), where they observed older horses more likely to be presented with colic (Table 3).

Table 2: Season wise incidence of various surgical, gynecological, and medicinal cases in equines

	Season		
Equine affections	*Winter (Nov. to Feb.)*	*Summer (March to June)*	*Monsoon (July to Oct.)*
Wound	33	32	33
Sinus, fistula and abscess	04	03	06
Hernia	01	01	00
Digestive system	04	03	03
Urinary system	01	09	02
Genital system	05	10	07
Musculoskeletal system	50	78	43
Fracture	10	9	7
Neoplasm	11	4	5
Eye	36	18	8
Colic	27	46	42
Others	10	17	11
Total	192	230	167
%	32.59%	39.04%	28.35%

Table 3: Age and sex wise incidence of various surgical, gynecological, and medicinal cases in equines

	Age groups			*Sex*	
Surgical affection	*0-–5 years*	*6–10 years*	*> 10 years*	*Male*	*Female*
Wound	73	17	8	54	44
Sinus, Fistula & Abscess	8	5	-	10	03
Hernia	2	-	-	02	00
Digestive system	6	3	1	07	03
Urinary system	9	2	1	05	07
Genital system	11	7	4	13	09
Musculoskeletal system	95	50	26	88	83
Fracture	23	2	1	15	11
Neoplasm	12	4	4	10	10
Eye	38	18	6	40	22
Colic	80	26	9	79	36
Other	23	9	6	24	14
Total	380	143	66	347	242
%	64.51%	24.27%	11.20%	58.91%	41.08%

Table 4: Breed wise incidence of various surgical, gynecological, and medicinal cases in equines

	Year				
Breed	*2016*	*2017*	*2018*	*Total*	*%*
Kathiawadi	26	41	31	98	16.63%
Marwadi	26	34	32	92	15.61%
Kutchhi-Sindhi	39	21	25	85	14.43%
Throughbred	01	01	00	02	0.33%
Crossbred	01	00	01	02	0.33%
Non-descript	108	95	107	310	52.63%

Sex wise incidences of equine affections were found higher in males (58.91%) than in females (41.08%) because more males are used in racing and draft purpose. Out of 98 cases of wounds 55.10% were found in male and 44.89% in female. Out of 171 cases of musculoskeletal system 51.46% were observed in male and 48.53% in female. Ophthalmic affections (62 cases) were also found higher in male (64.51%) than in female (35.48%). Colic affections were also more prominent in male (68.69%) than in female (31.30%) (Table 3).

Breed Wise Incidence

The results obtained from the retrospective study of equine affections were observed to be highest in non-descript breed (52.63%), followed by Kathiawadi (16.63%), Marwadi (15.61%), Kutchhi-Sindhi (14.43%), Thoroughbred (0.33%) and crossbreds 0.33%, Table 4. Equivalent results were also reported by Mistry *et al*. (2012), where they found higher affections in non-descript breed (156) followed by Marwadi (16), Kathiawadi (3) and Thoroughbred (1).

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