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Incidence of intussusception in cattle

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Abstract

The present study was conducted on clinical cases of cattle presented to the Department of Veterinary Surgery and Radiology (VSR), Veterinary College, Hassan during twelve months of period (September 2025 to August 2026). Detailed signalment including age, breed, sex, pregnancy status and season were recorded in all the animals. History of feed and water intake, rumination status, defecation status, type of feeding, any recent change in feed and fodder was recorded. The highest incidence of intussusception was noted in HF cross breed of cattle (37.5%), followed by Jersey cross breed (31.25%), Hallikar breed (18.75%) and Non Descriptive cattle breed (12.5%). Female cattle aged 2-6 years had higher incidence of intussusception in the present study.

Keywords: Cattle, fodder, intussusception

Introduction

Gastrointestinal surgical conditions represent a major clinical challenge in ruminant practice, with disorders in adult cattle stemming from diverse dietary, inflammatory, and mechanical etiologies (Fubini and Ducharme, 2004) [7, 6]. Among these, intussusception stands out as a critical mechanical obstruction that commonly warrants emergency surgical correction. Documenting the epidemiological patterns of this condition particularly regarding breed, age, reproductive status, seasonal trends, and predisposing factors (etiology) offers critical clinical insights. A thorough assessment of these demographic and environmental variables aids clinicians in pinpointing high-risk patients early, thereby guiding timely diagnostic and surgical interventions. Ultimately, establishing a detailed profile of intussusception incidence and its predisposing variables is essential for optimizing surgical protocols and improving overall therapeutic success in affected cattle.

Materials and Methods

The study was conducted to know the incidence of intussusception in cattle, presented to the Department of Veterinary Surgery and Radiology (VSR), Veterinary college, Hassan during the period of study (September 2025 to August 2026).

Results

A total of 8611 cases presented to Veterinary Clinical Complex (VCC), Veterinary College Hassan in twelve months period (September 2025 to August 2026). Among these, 3506 cases were presented to Department of Surgery and Radiology (VSR) for various ailments. Out of these 3506 cases, 1192 are cattle. The intussusception cases were 16 out of 1192 cattle cases. The incidence rate of intussusception in cattle was approximately 1.34 percent.

Table 1: Incidence of intussusception in cattle (n = 16)

Sl. No.	Number of cases	Total
1	Cases presented to VCC	8611
2	Cases presented to Dept. of VSR	3506
3	Cattle cases presented to Dept. of VSR	1192
4	Cattle with intussusception	16

Age-wise incidence of intussusception in cattle

The age wise incidence of intussusception in cattle was studied by classifying in to six distinct groups: 0-2 years, 2-4 years, 4-6 years, 6-8 years, 8-10 years and greater than 10 years (>10). The highest incidence was observed in the 2-4 years age group and 4-6 years group with 25 percent each (n = 4), followed by the age group of 6-8 years accounting 18.75 percent (n = 3), cattle that are aged 0-2 years and 8-10 years accounted for 12.5 percent (n = 2) respectively, while those greater than 10 years category comprised to 6.25 percent (n = 1). The age wise intussusception in cattle is represented in the Table 2 and Figure 2.

Table 2: Age-wise incidence of intussusception in cattle (n = 16)

Sl. No.	Age of the cattle	Total cases	Percent
1	0-2 Years	2	12.5
2	Above 2 year to 4 Years	4	25
3	Above 4 year-6 Years	4	25
4	Above 6 year-8 Years	3	18.75
5	Above 8 year-10 Years	2	12.5
6	>10 Years	1	6.25

Breed-wise incidence of intussusception in cattle:

Among 16 cattle with intussusception in the study, Holstein Friesian cross breed accounted higher incidence constituting 37.5 percent (n = 6) followed by Jersey cross breed with 31.25 percent (n = 6), Hallikar breed with 18.75 percent (n = 3) and non-descriptive breed with 12.5 percent (n = 2). The breed wise incidence of intussusception in cattle is provided in the Table 3 and Figure 3.

Table 3: Breed-wise incidence of intussusception in cattle (n = 16)

Sl. No.	Breed	Total Number	Percent
1	Holstein Friesian cross	6	37.5
2	Jersey cross	5	31.25
3	Hallikar	3	18.75
4	Non-descriptive	2	12.5

Gender-wise incidence of intussusception in cattle:

In the present study the incidence of intussusception in cattle was comparatively higher in female cattle which accounted for 75 percent (n = 12), while in male cattle the incidence was 25 percent (n = 4). Gender wise incidence of intussusception is presented in Table 4 and Figure 4.

Table 4: Gender wise intussusception incidence in cattle (n = 16)

Sl. No.	Gender	Total number	Percent
1	Female	12	75
2	Male	4	25

Pregnancy status-wise incidence of intussusception in cattle

In the present study the incidence of intussusception in female cattle was 75 percent (n = 12) of which 43.75 percent (n = 7) were non pregnant and 25 percent (n = 5) were found to be pregnant, of which 6.25 percent (n = 1) were in second trimester gestation and 25 percent (n = 4) were in third trimester gestation. Pregnancy status wise incidence of intussusception is presented in Table 5 and Figure 5.

Table 5: Pregnancy status wise intussusception incidence in cattle (n = 16)

Sl. No.	Gender	Pregnancy status	Total number	Percent
1	Female	Non pregnant	7	43.75
		First trimester	0	0
		Second trimester	1	6.25
		Third trimester	4	25
2	Male	(Not Applicable)	4	25

Season-wise incidence of intussusception in cattle

Season wise analysis of incidence of intussusception in cattle revealed the highest number of cattle were affected in winter comprising of 50 percent (n = 8). This was followed by rainy season accounting for 37.5 percent (n = 6) while

summer season had the least occurrence accounting for 12.5 percent (n = 2). The season wise incidence of intussusception in cattle is represented in the Table 6 and Figure 6.

Table 6: Season-wise incidence of intussusception in cattle (n = 16)

Sl. No	Season	Total Number	Percentage
1	Winter	8	50.00
2	Summer	2	12.50
3	Rainy	6	37.50

Predisposing factors-wise incidence of intussusception in cattle

In the present study 43.75 percent (n = 7) of the cases were reported with sudden feed and fodder change , 25 percent (n

= 3) were reported with a history of water intake after heavy workload, 6.25 percent (n = 1) were having a history of running (bullock cart race) the day before, 31.25 percent (n = 5) developed clinical signs without any known cause.

Table 8: Predisposing factors-wise incidence of intussusception in cattle (n = 16)

Sl. No.	Type of feeding	Total number	Percentage
1	Sudden feed and fodder change	7	43.75
2	Water intake after heavy workload	3	18.75
3	Exertion after running	1	6.25
4	Unknown causes	5	31.25

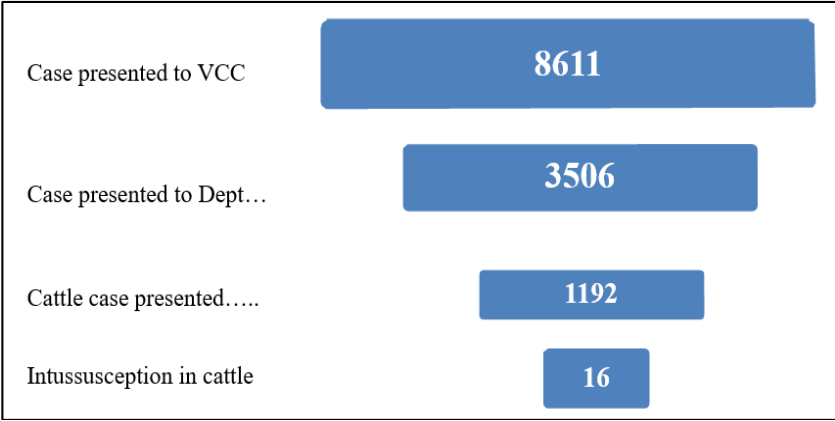


Fig 1: Incidence of intussusception in cattle

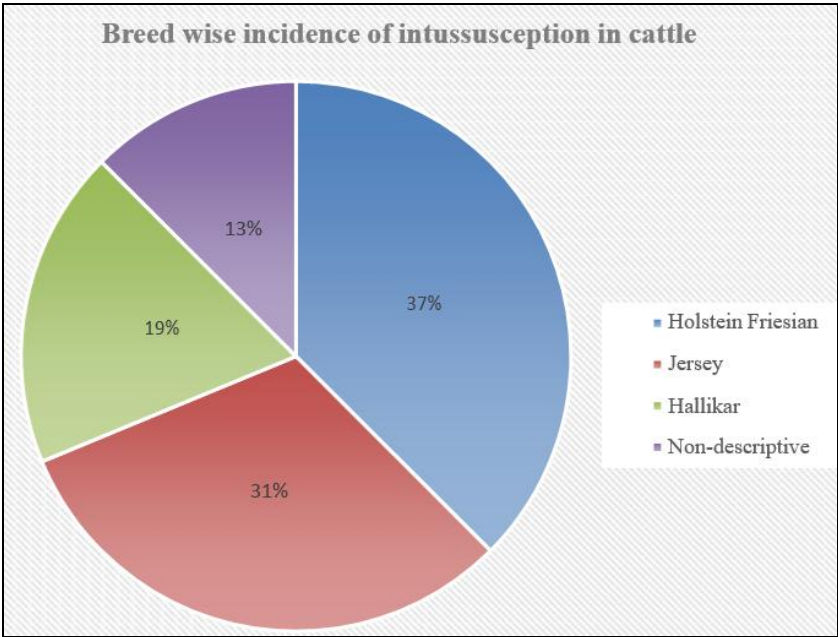


Fig 2: Breed wise incidence of intussusception in cattle

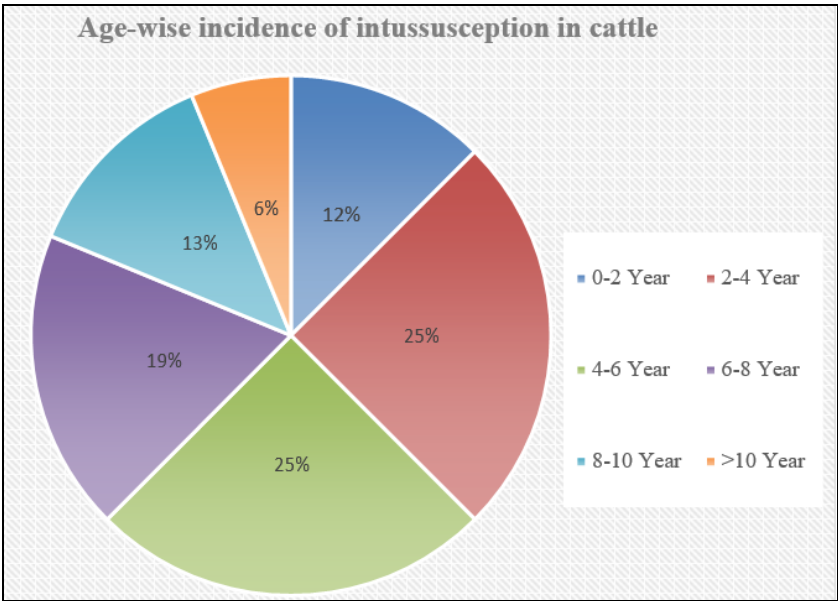


Fig 3: Age-Wise incidence of intussusception in cattle

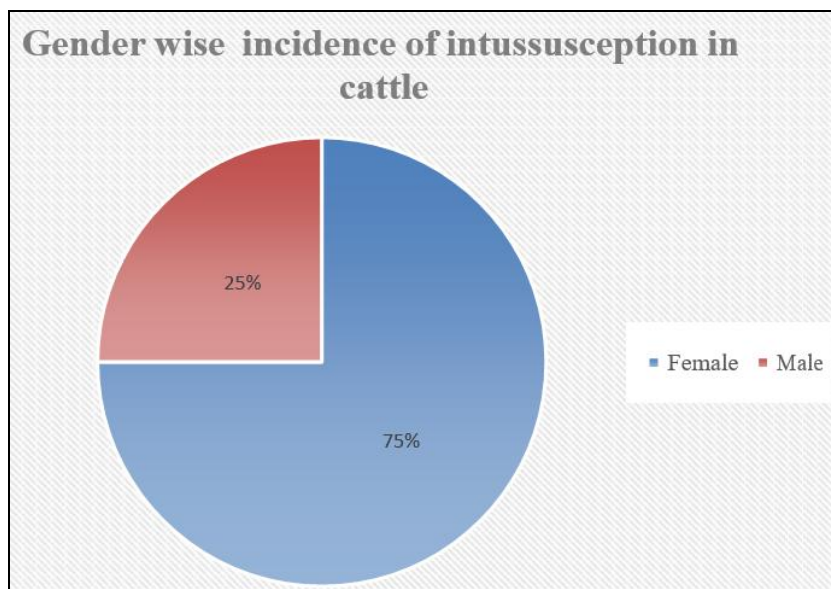


Fig 4: Gender wise incidence of intussusception in cattle

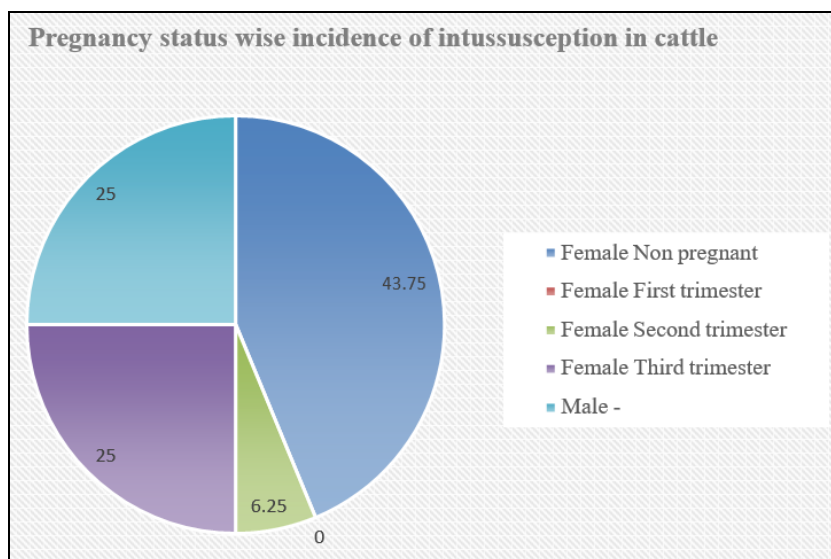


Fig 5: Pregnancy status wise incidence of intussusception in cattle

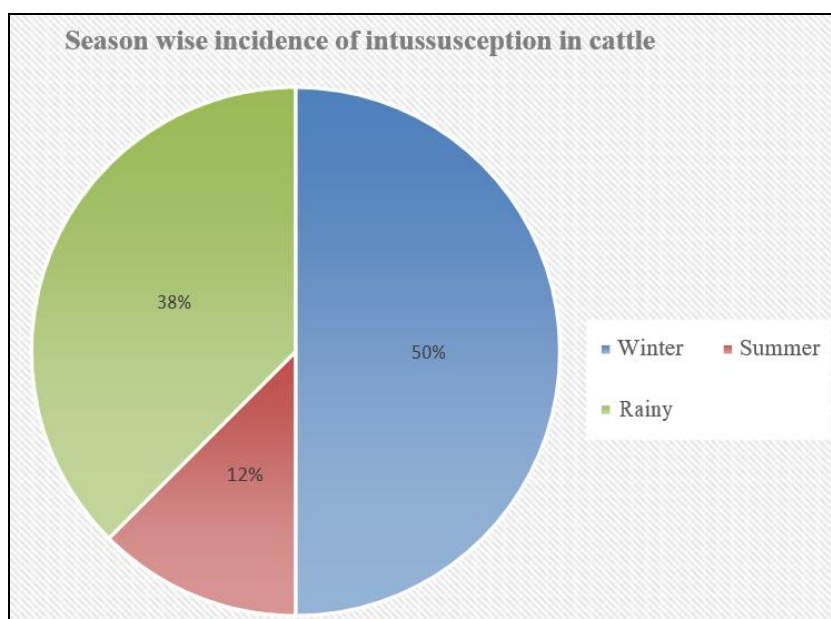


Fig 6: Season wise incidence of intussusception in cattle

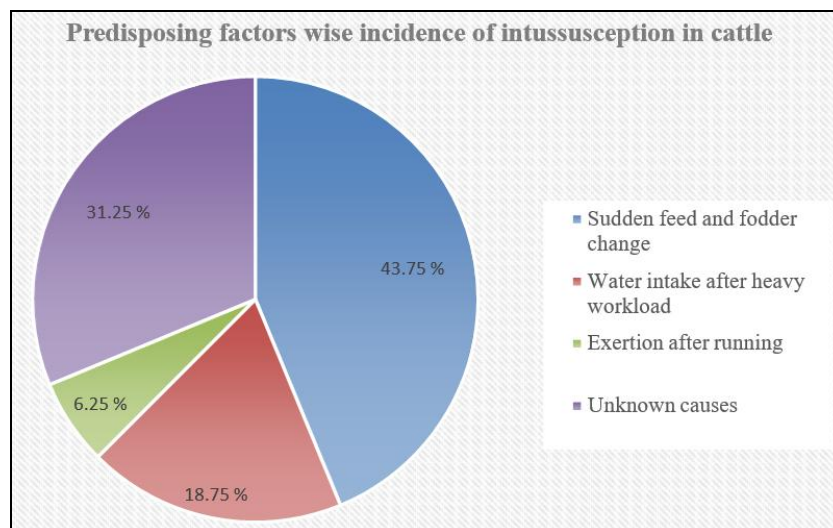


Fig 7: Predisposing factors wise incidence of intussusception in cattle

Discussion

Incidence of intussusception in cattle

The present clinical study was conducted on clinical cases of cattle presented to the Department of Veterinary Surgery and Radiology, Veterinary College, Hassan during twelve months period (September 2025 to August 2026). The findings of the present study are consistent with previous reports indicating intussusception appears to be more common of all cases of intestinal obstruction in cattle (Chakrabarti, 2014) [3]. The study's results were thoroughly analyzed and reported.

Age-wise incidence

The incidence of intussusception in cattle based on age revealed that the higher incidence was observed in the 2-4 years age group and 4-6 years group. While intestinal obstruction can occur at any age, studies consistently indicate a higher prevalence in animals between 1 and 4 years old (Kushwaha *et al.*, 2012; Mann *et al.*, 2019) [9, 11]. According to Makhdoomi *et al.* (1995) [10] this increased incidence in adult animals may be attributed to various factors, including intussusception, volvulus, torsion, peritonitis, abscesses, impacted feed, or intramural masses.

Breed-wise incidence

Among various breeds of cattle with intussusception in the study, highest incidence was seen in Holstein Friesian cross breed accounting highest for an about 37.5 percent (n = 6). Followed by Jersey cross breed with 31.25 percent (n = 6). Similar patterns have been documented by Wittek *et al.* (2005) [17] and Mann *et al.* (2019) [11]. Across different studies, breed prevalence diverges considerably. Dharmaceelan *et al.* (2012) [6] noted that Jersey crosses accounted for half of all intestinal obstruction cases, with HF crosses making up a third, while Constable *et al.* (1997) [2] observed elevated risk in Brown Swiss cattle breed relative to HF cattle breed, with Herefords breed least affected. These disparities suggest that the local differences in cattle demographics strongly influence the regional breed-wise incidence of intussusception in cattle.

Gender-wise incidence

In the present study the incidence of intussusception in cattle was comparatively higher in female cattle which accounted for 75 percent (n = 12) while in male cattle, the

incidence was 25 percent (n = 4). In the study conducted by Mann *et al.* (2019) [11] all 30 animals were female, aligning with observations by several previous authors (Braun *et al.*, 2002; Imran *et al.*, 2011) [2, 8]. In contrast, Constable *et al.* (1997) [2] found no significant association between sex and the development of intussusception in cattle. The predominance of female cases in the current investigation is likely attributable to a higher proportion of female dairy stock maintained in this region.

Pregnancy status-wise incidence

The pregnancy status analysis in cattle revealed that incidence of intussusception in female cattle is 75 percent (n = 12) of which 43.75 percent (n = 7) were non pregnant and 25 percent (n = 5) were found to be pregnant with 6.25 percent (n = 1) were in second trimester gestation and 25 percent (n = 4) were in third trimester gestation. Mann *et al.* (2019) [11] reported maximum number of animals under their study were non pregnant and intussusception does not seem to be related with pregnancy in cattle. The results of this study may be attributed to the fact that most of the female animals were non pregnant and intussusception in pregnant animals is seen mostly in the last trimester can be attributed to purchase of animals which are in last trimester gestation from different places in view of milk production immediately after calving. Long travelling stress and sudden change in feed and fodder pattern was noticed in these cases.

Season-wise incidence

Intussusception in cattle is found to be more common in winter season in the present study representing 50 percent (n = 8). This is followed by rainy season while summer season had the least occurrence. Similarly, Mann *et al.* (2019) [11] observed that out of 30 clinical case presentations, one-third (33.33%) occurred during the monsoon season (July to September 2016), whereas the remaining two-thirds (66.67%) were recorded during the winter months (January to February 2017). This winter predominance aligns with the findings of Sharma *et al.* (2003) [14], who noted that all 22 cases of intestinal obstruction in their cohort presented exclusively between November and February. Conversely, Constable *et al.* (1997) [2] found no statistically significant correlation between season and the occurrence of bovine intussusception, though they acknowledged a possible trend

toward late winter and spring. Similarly, Dharmaceelan *et al.* (2012) ^[6] reported that seasonal variation did not significantly influence the incidence of gastrointestinal obstructive disorders in bovines.

Pre-disposing factors-wise incidence

The predisposing factors for intussusception in the cattle were recorded during the collection of history in each case. It was found that 43.75 percent were reported with sudden feed and fodder change, 25 percent were reported with a history of water intake after heavy workload, 6.25 percent were having a history of running (bullock cart race) a day before and 31.25 percent developed clinical signs without any known cause. The etiology of intussusception involves several mechanical and physiological triggers. Parasitic infestation has been implicated as a predisposing factor (Venugopalan, 1994) ^[15], alongside mural lesions such as intestinal polyps, neoplasia, local inflammation, and the ingestion of cold water (Aher *et al.*, 1995) ^[1]. Tyagi and Singh (1996) ^[14] emphasized that enteritis and subsequent hyperperistalsis frequently precipitate invagination. Furthermore, abrupt dietary changes have been widely documented as contributing causes (Pearson, 1971; Fubini and Ducharme, 2004) ^[12, 7]. Physical exertion is another notable trigger. Yadav *et al.* (2009) ^[18] evaluated 12 affected bullocks and noted that strenuous work followed by rapid consumption of feed and water preceded obstruction in 75 percent of cases (n = 9), with diarrhea 16.66 percent (n = 2) and sudden jumping activity 8.33 percent (n = 1) identified as the remaining antecedent events.

Conclusion

In conclusion female, adult cattle with age group between 2-6 years, non pregnant and Holstein Friesian cross breed were reported with highest incidence of intussusception. Intussusception cases were more reported in winter season and sudden changes in feeding pattern were recorded more in this current study.

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