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Short Communication

STUDIES ON FETAL DYSTOCIA DUE TO DEVIATION OF HEAD AND NECK IN DAIRY ANIMALS

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SUMMARY

A total number of 39 clinical cases of cows and buffaloes suffering from dystocia due to deviation of head and neck were included in this study during a period of three years (2011-2014). General history included the age of dam, parity, previous calving history, and assistance provided before the start of treatment and basic clinical parameters including temperature, pulse, and respiration rate were recorded. On vaginal examination, upward, downward and lateral deviation of head and neck and status of fetus (live/dead) were also studied. Study revealed that frequency of dystocia is double in buffalo (n=26) compared to cattle (n=13). Treatment strategies adapted to relieve the dystocia were mostly the obstetrical mutations in 30 and alternative remedy was fetotomy in 9 animals and none required the caesarean.

Keywords: Buffalo, Cow, Dystocia, Fetotomy, Head and Neck deviation, Obstetrical mutation

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Dystocia is defined as delayed or difficult calving, sometimes require significant human assistance (Lombard *et al.*, 2007; Zaborski *et al.*, 2009; Uzamy *et al.*, 2010). Fetal causes of dystocia are more common and account for 64.08%; head deviation 20.4% and limb flexion 19.4% (Purohit and Mehta, 2006). The deviation of head and neck may be in any direction with respect to four quadrants of dam. Dystocia due to lateral deviation of head and neck constitutes one of the most common types of postural abnormality in anterior presentation and it may arise during late gestation rather than during birth (Noakes *et al.*, 2019). Lateral deviation of the head is seen most often in unipara and the prognosis is serious when the fetus is dead and the deviations are due to muscle contractures (Sane *et al.*, 1994). However, Srinivas *et al.* (2007) reported that 40.84 percent of dystocia in graded Murrah buffalo is due to fetal cause, among which head deviations were of 42.22 percent. The deviation can be corrected by using mutation and traction, cesarean section or fetotomy (Noakes *et al.*, 2019).

A total 39 clinical cases of cows and buffaloes suffering from dystocia due to deviation of head and neck were included in this study during a period of three years. All animals were presented for treatment in the Department of Veterinary Obstetrics and Gynaecology, College of Veterinary Science and Animal Husbandry, Mathura. General history included the age of dam, parity, previous calving history, and assistance provided before the start of treatment and basic clinical parameters including temperature, pulse, and respiration rate were recorded. Upward, downward and lateral deviation of head and neck and status of fetus (Live/dead) were also recorded. Strategies adapted to relieve the dystocia were (i) obstetrical mutation (n=30, cattle-10 and buffalo-20), (ii) fetotomy (n=9, cattle-3, and buffalo-6).

Among the 39 cases presented, 13 (33.33%) were cows, and 26 (66.66%) were buffaloes. Out of thirteen cases in cattle, 2 (15.38%), 9 (69.23%), and 2 (15.38%) were in the age group of 2-4, 5-7, and >7 years, respectively. However, 2 (28.57%) and 11 (84.62%) cases were primipara and pluripara cows, respectively. Amongst the pluripara cows 1 (9.09%), 9 (81.82%), and 1 (9.09%) fell in the parity range of 2-4, 5-7, and >7, respectively (Table 1). Out of 26 cases in buffaloes, 4 (15.38%), 20 (76.92%), and 2 (7.69%) were in the age group of 2-4, 5-7, and > 7 years, respectively. However, 5 (19.23%) and 21 (80.77%) were primipara and pluripara buffaloes, respectively. Amongst the pluripara buffaloes, 3 (14.29%), 16 (76.19%), and 2(9.52%) fell in the parity range of 2-4, 5-7, and >7, respectively. All the buffaloes have an earlier history of normal calving and were provided veterinary assistance before being brought to clinics (Table 1).

In cows, general status of health was good in 11 (84.62%) and fair and poor status was observed in one each. The basic clinical parameters i.e. temperature, pulse and respiration in cattle were 102.4±0.12 ºF, 84.45±0.02/minute and 46.22±0.24/minute in good, 103.01±0.02 ºF, 90.28±2.09/minute and 50.37±1.43/minute in fair and 103.20±0.14 ºF, 92.69±3.02/minute and 52.56±2.13/minute in poor health status, respectively (Table 2). On vaginal examination of 13 cases of dystocia in cows, 1

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Table 1

General history of cases of dystocia due to deviation of head and neck

S. No.	General history	Cows-13 (%)	Buffaloes -26 (%)
1.	Age of Dam (years)		
1.1	2-4	2 (15.38)	4 (15.38)
1.2	5-7	9 (69.23)	20 (76.92)
1.3	>7	2 (15.38)	2 (7.69)
2.	Parity (numbers)	2 (15.38)	5 (19.23)
2.1	Primipara (First Calving)	11 (84.62)	21 (80.77)
2.2	Pluripara (more than one calving)	1 (9.09)	3 (14.29)
2.2.1	2-4	9 (81.82)	16 (76.19)
2.2.2	5-7	1 (9.09)	2 (9.52)
2.2.3	>7		
3.	Previous calving history		
3.1	Normal	13 (100)	26 (100)
3.2	Dystocia	Nil	Nil
4.	Assistance provided before brought to clinic	13 (100%)	26 (100%)

Table 3

Parameters studied in cases of dystocia in cows and buffaloes treated for deviation of head and neck

S. No.	Attributes	Deviation of head and neck	
		Cows (%)	Buffaloes (%)
1.	Number of cases handled	13 (33.33)	26 (66.66)
2.	Type of deviation of head		
2.1	Up ward	1 (7.69)	3 (11.54)
2.2	Down ward	5(38.46)	10 (38.46)
2.3	Lateral	7(53.85)	13 (50.00)
3.	General Status of animal (Based on external examination)		
3.1	Good	11 (84.62)	24 (95.15)
3.2	Fair	1 (7.69)	1 (03.85)
3.3	Poor	1 (7.69)	1 (03.85)
4.	Strategies adopted for relieving deviation		
4.1	Obstetrical Mutation	10 (76.92)	20 (76.92)
4.2	Fetotomy	3 (23.08)	6 (23.08)
5.	Cases relieved	13 (100.00)	26 (100.00)
6.	Status of fetus delivered		
6.1	Live	1 (07.69)	3 (11.54)
6.2	Dead	12 (92.31)	23 (88.46)

(7.69%) was upward, 5 (38.46%) were having downward, while 7 (53.85%) were having lateral deviation of head and neck. Out of 13 cases, 10 (76.92%) and 3 (23.08) were treated by obstetrical mutation and fetotomy, respectively. In cows, 1 (7.69%) live and 12 (92.31%) dead fetuses were delivered (Table 3).

Table 2

Basic clinical parameter recorded in cows and buffaloes suffering from dystocia due to deviation of head and neck

Species	Temperature (°F)	Pulse (per minute)	Respiration (per minute)
Cattle	102.4±0.12	84.45±0.02	46.22±0.24
	103.01±0.02	90.28±2.09	50.37±1.43
	103.20±0.14	92.69±3.02	52.56±2.13
Buffalo	102.20±0.49	83.13±0.80	46.24±0.23
	102.80±0.26	86.65±3.42	52.22±1.29
	103.40±0.19	88.55±2.38	54.18±2.07

Among buffaloes, general status of health was good in 24 (95.15%) and fair and poor status was observed in one each. The basic clinical parameters i.e. temperature, pulse and respiration in buffaloes were 102.20±0.49 ºF, 83.13±0.80/minute and 46.24±0.23/minute in good, 102.80±0.26 ºF, 86.65±3.42/minute and 52.22± 1.29/minute in fair and 103.40±0.19 ºF, 88.55± 2.38/minute and 54.18±2.07/minute in poor health status, respectively (Table 2). On vaginal examination of 26 cases of dystocia in buffaloes, 3 (11.54%) upward, 10 (38.46%) downward, while 13 (50.00%) were having lateral deviation of head and neck (Table 2). Out of 26 cases, 20 (76.92%) and 6 (23.08%) were treated by obstetrical mutation and fetotomy, respectively. In buffaloes, 3 (11.54%) live and 23 (88.46%) dead fetus were delivered (Table 3).

Deviations of the head, although less common in buffalo than cows (Purohit and Mehta, 2006) but are more serious causes of dystocia than dystocia due to forelimb deviation. The most common deviation of the head was the lateral deviation (Purohit and Mehta, 2006) followed by upward and downward deviation. The deviation is known to occur due to deflection of the nose against a partially open cervix, and with the progressive contractions of the uterus, the deviation may further increase (Mudasir *et al.*, 2010). When the deviations are slight and the fetus is alive, the head can be brought to its normal position with mutation manipulation, but there is poor prognosis when the fetus is dead and deviations are due to muscle contractures. Lateral deviation can be corrected by bringing the head into a normal position after repulsion and by using hooks and snares. In difficult cases, partial fetotomy may be performed (Phogat *et al.*, 1992). Various options can be considered according to the individual case and the obstetrician's decision may depend on the space available in the pelvic canal, the presence of emphysema and rigidness of the neck. The incidence of head deviation

recorded varied from 2.5-20.4% in cows (Purohit and Mehta, 2006) and from 7.5-12.2% in buffaloes (Purohit and Mehta, 2006; Srinivas *et al.*, 2007). Two types of downward deviations are usually encountered, first one includes Vertex presentation and the second comprised of Nape presentation. Correction of the first type is easy, especially if the fetus is alive, and can be achieved by grasping the muzzle or nose. Correction of the second type is more difficult and may be attempted by repulsion of fetus. When manipulation of the fetus is not possible, fetotomy is the another alternative (Wehrend *et al.*, 2002). However, in difficult cases with live fetus, caesarean section is advisable. Dystocia due to upward deviation of the head is rare in cattle and buffalo (Purohit *et al.*, 2012).

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