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Studies on dystocia in does: A retrospective study

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Abstract

In this retrospective study, dystocia weather maternal and / or fetal causes in does were analyzed. A total of 12 does suffering with dystocia (maternal dystocia, n=6) and (fetal dystocia, n=6) admitted to the Clinics College of Veterinary Science, Kamdhenu university Gujarat were the subject of study. The recorded incidence of dystocia in does was 39.38% being higher in the month of August (62.50%) followed by March-May (50.00%) and June-July (46.15%). Ring womb/indialation of cervix, uterine twisting were the major causes for maternal dystocia while the postural abnormalities includes deviation of head, hip flexion, shoulder flexion and breech presentation and were responsible for fetal dystocia. From this study, it is concluded that in order to obtain high fetal and dam survival and also to reduce the cost of treatment, does with dystocia should be presented without undue delay.

Keywords: Doe, dystocia, Obstetrico-clinical examination

Introduction

India is predominantly an agricultural country with about 70 percent of its population dependent on agriculture. Livestock is an important component of the Indian rural economy. Goat is kept for milk and meat production. Reproduction in goats is described as seasonal. Goats are the most fertile species of the domestic animals with conception rates in the range of 90% (Peaker,1978) [25] with gestation period of 142-145 days. Dystocia is a common obstetrical problem in all farm animals and defined as “a birth that reduces calf viability, causes maternal injury and requires assistance” (Noakes 2019) [24]. Immediate or long term consequences due to dystocia can turn the effort into an uneconomical and wasteful endeavor. As considerable time, effort and expenses are spent in ensuring that a female conceives, by artificial insemination (AI) or natural service, dystocia can have a huge economic impact on farmers due to kid morbidity and mortality (Abera *et al.* 2017) [2], increased veterinary costs, decreased production (McGuirk *et al.* 2007) [22], reduced fertility (Purohit *et al.* 2012) [26], and in extreme cases, injury to or death of the dam (Bicalho *et al.* 2008) [8]. Recent research suggests that dystocia can also have potential long-term effects on the kid born, reducing survival rate to adulthood and subsequent milk production in them (Atashi *et al.* 2012) [6]. Report on the incidence and various clinical attributes related to dystocia in small ruminants under a defined study area is meager. The present study was thus planned to cover the incidence, and various clinical attributes related to dystocia in does

Materials and Methods

A total of 12 does suffering from dystocia during the period of last two years were the subject of study. The data recorded from the case records of Department of Veterinary Gynecology and Obstetrics, Dr. V. M. Jhala Clinical Complex, Kamdhenu University, Deesa and Government Veterinary Policlinic, Palanpur, were compiled and analyzed retrospectively to know the incidence and month wise distribution of dystocia in does. Immediately after clinical presentation, anamnesis and vital parameters of each animal was noted down. Detailed Obstetrico-clinical observation and their findings are tabulated and interpreted (table 1-5). Animals were rehydrated if required, before subjecting them to any obstetrical maneuvers.

Results and Discussions

Incidence of dystocia

The overall incidence, month wise distribution of dystocia cases in does has been depicted in (Table 1). The incidence of dystocia in does was 39.38% (102/259). Maximum number of dystocia cases was observed during the month of August (62.50%) followed by March-May (50.00%) and June-July (46.15%).

The observed incidence of dystocia in does was similar to the report of Bhattacharya *et al.* (2015)^[7] and Gopal *et al.* (2015)^[13]. Although, it was lesser than that reported by Majeed and Taha (1995)^[21] who stated that dystocia accounts for more than 50% of reproductive disorders. Mehta *et al.* (2002)^[23] in goats and Brounts *et al.* (2004)^[10] in sheep and goats reported very low incidence of dystocia than the present findings. The month-wise incidence obtained in this study is in accordance with results of Gopal *et al.* (2015)^[13] who recorded maximum obstetrical cases between July to October.

History

The anamnesis in the cases of dystocia is of prime importance in order to achieve maximum success rate. The collected history of dystocic does of Group-I and II is tabulated in table 2. Reduced Feed intake was noticed in both dystocia affected groups under the present study agrees with the report of Ansari (2014)^[5] in dystocia affected doe. However, Siddique and Chaudhary (2000)^[30], Shukla *et al.* (2007)^[28], Das *et al.* (2009)^[12], Islam *et al.* (2012)^[14], Kumar *et al.* (2014a)^[17] and Mahto and Kushum (2014)^[20] noticed anorexia in dystocia affected doe. Kumari *et al.* (2013)^[19] reported dystocia in doe with previously three normal kidding is in accordance with present findings where maximum does (9/12) had previous normal kidding. Siddique and Chaudhary (2000)^[30], Das *et al.* (2009)^[12], Sharma *et al.* (2011)^[27], Kulkarni *et al.* (2013)^[16], Jaykumar *et al.* (2013)^[29], Shweta *et al.* (2014)^[35], Kumar *et al.* (2014a)^[17], Ansari (2014)^[5] and Tripathi and Mehta (2016)^[34] have reported dystocia in does at complete gestation period similar to the present study. Overall duration of dystocia recorded in the present study agrees with Sharma *et al.* (2011)^[27] and Kumar *et al.* (2014b)^[18]. Contrary to this Shukla *et al.* (2007)^[28], Suthar *et al.* (2011b)^[33], Suthar *et al.* (2011a)^[32], Kumari *et al.* (2013)^[19], Jaykumar *et al.* (2013)^[29], Sofi *et al.* (2013)^[31], Ahmed *et al.* (2013)^[14], Kumar *et al.* (2014a)^[17], Ansari (2014)^[5] and Mahto and Kushum (2014)^[20] reported lesser duration of dystocia in does. The does with maternal dystocia (group-I) did not show any vaginal discharge, whereas, it was observed in does affected with fetal origin dystocia (group-II). Similarly, Sharma *et al.* (2011)^[27] reported absence of vaginal discharge while Islam *et al.* (2012)^[14], Sofi *et al.* (2013)^[31] and Kumar *et al.* (2014b)^[18] reported abnormal discharge in dystocia affected does. Only two does under the study were treated at farmers door step likewise Adhikari and Joshi (2011)^[3] and Tripathi and Mehta (2016)^[34] also reported handling of dystocia at farmers door step.

Clinical examinations

Following history, clinical examination accounts most in view to resolve the dystocia and survivability of dam. All the does presented to the clinics were in standing posture contrary to this Adhikari and Joshi (2011)^[3], Kumar *et al.* (2014a)^[17] and Abdullah *et al.* (2015)^[1] reported recumbent posture in most dystocia affected does. The majority of dystocic does during study were dull depressed (8/12) as reported by Jaykumar *et al.* (2013)^[29], Shweta *et al.* (2014)^[35] and Tripathi and Mehta (2016)^[34] and one was found to be dehydrated as reported by Sharma *et al.* (2011)^[27]. The recorded elevation in rectal temperature is in harmony with Shukla *et al.* (2007)^[28], Suthar *et al.* (2011a)^[35], Sweta *et al.* (2014)^[35] and Kumar *et al.* (2014a)^[17]. Conflicting to this finding Jaykumar *et al.* (2013)^[29] reported hypothermia in dystocia affected doe. However, Sharma *et al.* (2011)^[27], Kulkarni *et al.* (2013)^[16]

and Ahmed *et al.* (2013)^[14] reported normal rectal temperature in dystocic does. The recorded heart rates in present study were higher in dystocic than normally kidded does. Similarly, higher heart rates were recorded by Jaykumar *et al.* (2013)^[29], Ansari (2014)^[5] and Ahmed *et al.* (2013)^[14] in does and by Bronzo *et al.* (2011)^[11] and Abdullah *et al.* (2015)^[1] in sheep affected with dystocia. Contrary to these Sharma *et al.* (2011)^[27] reported normal respiration rate in dystocia affected doe. The documented respiration rates were also found to be increased in present study corroborating with results of Jaykumar *et al.* (2013)^[29] and Kumar *et al.* (2014b)^[18] in dystocia affected does. The conjunctival mucus membrane was congested in 8/12 and normal in 4/12 dystocic does. Analogous to this congestion of conjunctival mucus membrane was also noticed by Kumar *et al.* (2014a)^[17] in dystocic does and Bronzo *et al.* (2011) and Abdullah *et al.* (2015)^[1] in dystocic sheep. Whereas, Sharma *et al.* (2011)^[27] reported normal conjunctival mucus membrane in dystocia affected does. This variation in reports of vital parameters may be due to either longer duration of dystocia or transportation stress or previous health of animals.

Obstetrical examination

To salvage the productive and reproductive ability of dam as well as life of fetus careful obstetrical examination is key point in dystocia cases. Obstetrical examination of all the dystocic does of either maternal or fetal origin revealed normal pelvis. Contrarily, Islam *et al.* (2012)^[14] reported dystocia in a doe due with abnormal pelvis due to an accidental fall. Das *et al.* (2009)^[12], Suthar *et al.* (2011a)^[32], Sofi *et al.* (2013)^[31] and Shweta *et al.* (2014)^[35] reported congestion of vaginal mucus membranes and edema of vulva in dystocic does which agrees with the findings of present study. Relaxation of vagina was noticed in maximum number of does in the present study being normal physiology during act of parturition. However, only one doe suffered with maternal dystocia (group-I) under present study had twisting of vagina as noticed by Mahto and Kushum (2014)^[20], Ansari (2014)^[5] and Shweta *et al.* (2014)^[35] due to uterine torsion. The twist was 90 degree right side post cervical in the present study. However, Shukla *et al.* (2007)^[28], Shweta *et al.* (2014)^[35] and Biswal *et al.* (2015)^[9] reported higher degree of post cervical twisting in does. Further, pre-cervical twisting has also been reported by Sharma *et al.* (2011)^[27] and Ansari (2014)^[5] in does. Das *et al.* (2009)^[12], Sharma *et al.* (2011)^[27], Suthar *et al.* (2011a)^[32], Suthar *et al.* (2011b)^[33], Adhikari and Joshi (2011)^[3], Islam *et al.* (2012)^[14] and Ahmed *et al.* (2013)^[14] had reported palpable cervix in dystocia affected does which is also true for present study. However, cervix was not palpable in uterine torsion affected doe of group-I under study which agrees with findings of Shukla *et al.* (2007)^[28], Shweta *et al.* (2014)^[35] and Mahto and Kushum (2014)^[20]. Cervix found to be dilated in all does suffered with fetal dystocia (group-II) as reported by Sofi *et al.* (2013)^[31] and Biswal *et al.* (2015)^[9] in dystocic doe and Abdullah *et al.* (2015)^[1] in dystocic ewes. Contrarily, cervix was non-dilated/partial dilated in maximum number of maternal origin dystocic does of group-I in this study is in harmony with Das *et al.* (2009)^[12], Ahmed *et al.* (2013)^[14] and Brozos *et al.* (2011)^[11]. Predominantly, does of group-I delivered twins followed by single kid and does of group-II delivered single kid followed by twins during present study. Similarly, Sharma *et al.* (2011)^[27], Islam *et al.* (2012)^[14], Ahmed *et al.* (2013)^[14], Kumar I *et*

al. (2013) [19], Sofi *et al.* (2013) [31], Shukla *et al.* (2007) [28] and Das *et al.* (2009) [12] reported dystocia with single kid as well as twin kids in does. The delivery of triplet and quadruplet kids in dystocic does are also reported by Suthar *et al.* (2011b) [33] and Kumar *et al.* (2014a) [17]. Most delivered kids were dead (10/23) in the present study. Similarly, Shukla *et al.* (2007) [28], Das *et al.* (2009) [12], Sharma *et al.* (2011) [27], Suthar *et al.* (2011a) [32] Adhikari and Joshi. (2011) [3], Islam *et al.* (2012) [14], Kulkarni *et al.* (2013) [16] and Kumari *et al.* (2013) [19] reported delivery of dead kids in dystocia affected does. Maximum numbers of delivered kids were of male sex similar to results of Kumar *et al.* (2014) [17] and Ansari (2014) [5] in doe and Brozos *et al.* (2011) [11] in ewes. Most of the delivered kids were in anterior longitudinal presentation, only few (4/20) were in the posterior presentation similar presentation was reported by Das *et al.* 2011 [27], Sofi *et al.* 2013 [31], Ahmed *et al.* 2013 [14], Shweta *et al.* 2014 [35] and Abdullah *et al.* 2015 [1] in doe and ewe respectively. In the present study most of kids were in dorso-sacrum position similar to report of Shweta *et al.* (2014) [35] and contrary to

Abdullah *et al.* (2015) [1] who reported dorso-ventral position of delivered fetus in dystocia affected ewe. The reported postural defects resulting in fetal dystocia are deviation of fetal head by Sofi *et al.* (2013) [31] in doe and hip flexion by das *et al.* (2011) [27] in ewe. Similarly, the postural abnormalities found in the present study were deviation of head, hip flexion, shoulder flexion and breech presentation. The presentation, position and posture of kids in both Group-I and II are illustrated in table The presentation of kids in Group-I was anterior longitudinal in seven and posterior longitudinal in four does with dorsosacral position and normal posture. Out of 6 assisted delivery of Group-II, four does' kids were in anterior longitudinal presentation and four were in posterior longitudinal presentation with dorsosacral position in six and dorsoiliac in two does. The postural defects resulting in fetal dystocia (Group-II) were downward deviation of head (2/8), hip flexion (1/8), shoulder flexion (3/8) and breech presentation (2/8). Average time taken for placenta expulsion was 12-20 hrs. and 16-30 hrs. in Group-I and Group-II, respectively.

Table 1: Overall month wise distribution of dystocia in does

Months	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Overall
Total no. of reproductive ailments in does	30	26	24	21	14	13	13	16	40	23	25	14	259
No of dystocia affected does	10	8	12	8	7	6	6	10	16	9	6	4	102
Percent (%)	33.33	30.77	50.00	38.10	50.00	46.15	46.15	62.50	40.00	39.13	24.00	28.57	39.38

Table 2: History of dystocia affected does

Group	Gestation period		Duration of dystocia	Previous kidding		Feed Intake	Treatment at door step		Vaginal discharge		
	C	P		N	Ab		Y	N	Abs	N	Ab.
G-I(n=6)	4	2	24-36 hrs.	5	1	Reduced	-	6	6	-	0
G-II(n=6)	5	1	20-48 hrs.	4	2		2	4	-	3	4
Overall	9	3	28±0.35 hrs.	9	3		2	10	6	3	4

C=Complete, N=Normal, Ab=Abnormal, Abs=absent, Y=yes, N=no., P=Prolonged

Table 3: Clinical observations on does had dystocia

Group/clinical parameters	Posture of does		Physical status of dam			Vital parameter of different groups of does			C.M.M.	
	S	R	D.D	N	D	R.T. °F	R. R./min.	H.R./min.	C	N
G-1(n=6)	5	1	3	3	-	103±0.36	35.66±0.62	95.62±0.42	3	3
G-2(n=6)	6	-	5	-	1	104±0.62	35.83±0.87	94.66±1.02	5	1
Overall	11	1	8	3	1	103.5±0.49	35.74±0.74	95.14±0.72	8	4

S=Standing, R=recumbent, D.D.=Dull and Depressed, N=Normal, D=Dehydrated, C=Congested, C.M.M.= Conjunctival Mucus Membrane, R.T.= Rectal Temperature, R.R.= Respiration Rate, H. R.=Heart Rate, min.=Minute

Table 4: Finding of per vaginal examination in dystocic does

Group/obst etrical examination	Pelvis		Vulva		Vaginal Mucus Membrane		Vagina		Twisting of vagina			Cervix				Kids						
	Normal	Abnormal	Edematous with congestion	Normal	Congested	Pale	R	Nr	No	Yes			P	Np	D	Nd/p	No.			Viability	Sex	
										Side	Site	Degree					S	T	Tr			M
G-1(n=6)	6	-	4	2	5	1	3	3	5	Right	Post cervical	90°	6	-	1	5	2	3	1	3	7	4
G-2(n=6)	6	-	3	3	4	2	6	-	6	-	-	-	6	-	6	-	4	2	-	2	5	3
Overall	12	-	7	5	9	3	9	3	11	1	1	1	12	-	7	5	6	5	1	5	12	7

R=Relaxed, Nr=Not relaxed, P=Palpable, Np=Not palpable, D=Dialted, Nd/p=Partial/Non dialated, S=Single, T=Twin, Tr=Triplet, M=Male, F=Female

Table 5: Presentation, position and posture of delivered kids in dystocia affected does (Group-I and II)

Sr. No	Presentation, position and posture of delivered kids		No. of kids		
			Group-I	Group-II	
1.	Presentation	Anterior longitudinal		7	4
		Posterior longitudinal		4	4
2.	Position	Dorso sacrum		11	6
		Dorsoiliac		-	2
3.	Posture	Normal		11	-
		Downward deviation of head		-	2

		Hip flexion	-	1
		Shoulder flexion	-	3
		Breech presentation	-	2

Conclusion

From the study, it is concluded that among the various reproductive ailments presented to clinics, dystocia shows higher incidence (39.38%). Prolonged dystocia, unnecessary and prolonged attempts for vaginal delivery seriously affect the case outcome. Does suffering from dystocia should be presented for treatment to specialists without any delay to save both fetus and dam. Strict supervision is required in the maiden one during delivery.

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