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Parturition Behavior and Neonatal Behavior of Camel in Loose Housing System

Bhakat, C.¹ and M.S. Sahani.²

National Research Centre on Camel, Bikaner - 334 001, Rajasthan, India

E-mail - bhakat@scientist.com

Abstract: A total of ten parturition cases of Indian camel (*Camelus dromedarius*) of Bikaneri breed were randomly selected for investigation and were kept under the observation in loose housing system from one month before the expected date of calving. The parturient camel wants to be alone and separate from the main herd was very common and prominent sign. Similarly, showing two grooves on either side of the root of tail, concavity between the site of pin bone, vulva was visible swollen round, repeated lying down - standing up, superficial mammary vein become tense and tortuous and swelling of udder and teat were very common signs which indicated that delivery process was likely to be start very soon. Some other signs viz; looking to flank and aggressiveness was not so common in Indian camel. The average time gap between appearance and expulsion of allanto chorion bag was 3.50 ± 1.1 minute. The average time gap between expulsion of allanto chorion bag and appearance of foetus was 5.25 ± 1.66 minute. The 100 % cases showed normal presentation which was out stretched foreleg with chin of the calf resting on it. The average time gap between appearance and expulsion of foetus was 6.23 ± 2.44 minute (in assisted labour cases) and 42.50 ± 6.50 minute (unassisted labour cases). The post partum average time taken for expulsion of placenta was 55.86 ± 10.00 minute. The average time taken for the calf to stand on his leg was 56.23 ± 10.44 minute. After parturition maximum dam adapt their calf very quickly but there were few cases (20%) where dam took more time for this adaptation process. The average time taken for first milk suckling attempt was 80.26 ± 8.53 minute where as the time interval for milk suckling was varied from 1 to 3 times per hour. The average time taken for exertion of muconium was 32.00 ± 5.64 minute. But the average time taken for first urination was 61.50 ± 2.11 minute. In maximum cases (90%) locomotary movement of newly born calf was normal within 12 to 24 hour after parturition but some calves (10 %) took more time to normalize their locomotary movement.

Keywords: Camels, parturition, Neonatal, behavior, loose house

Introduction

As the desert land area is prone to frequent draught, the small marginal farmers of this region rely heavily on livestock enterpris for their sustenance. The livestock should be compatible with cultivation instead of competing with it for land and water resource. Camel rearing enterprise fits well with such requirements. Most structure of the four stomachs, ability to digest coarse vegetation, body temperature, passing of concentrate urine and nearly dry faeces some fine examples (Rai et al., 1995). Camel population of the world approximately 19.32 million, and of India is 1.03 million (FAO, 2000). Indian camel population is mainly confined to north - western states: Rajasthan, Gujarat, Haryana and Punjab (93.12% of total Indian camel population) with density of camel in eleven arid district of Rajasthan (70.13% of total Indian camel population) (Khanna et al., 1990). Camel carting provides gainful source of employments and a regular flow of income to the farmers and other deprived groups in society. Supplementary and complementary connection between the crop and draught animal add to the importance of maintaining draught animals. Agriculture and draught animal go side by side in bovine farming business into a profitable enterprise. Heifer Project International (HPI), a private non-profit development agency is assisting the minorities who seek gainful employment using camel for transport. Agricultural and Industrial products (Robert et al., 1995). There has been constant increase of camel driven carts even around big cities. Evaluation of IRDP in the arid lands has indicated that average increase in the income of the beneficiaries was one of the highest amongst people who has given loan for the purchase of camel and camel carts (Khan, 1994). Since 85% of the gross cultivated area of the Bikaner district is non-irrigated camel carts hold a significant potential for financial gain (Amresh, 1999). Camel energy is not only cost effective but also profitable and remunerable.

(The post partum mortality of camel calf can be reduced by adopting scientific management practices during parturition. For the convenience in discussion the whole parturition process can be divided into three phases. The first phase starts from onset of labour and will merge with next phase when the allanto, chorion bag ruptured.

expel. The second phase starts with rupture of allanto chorion bag and continues up to expulsion of foetus. The third phase is the time period between the birth of calf and expulsion of placenta. It is therefore, necessary to investigate the characteristic features of different stages of parturition behaviour and the post partum behavioural features of camel calf.)

Materials and Methods

A total of ten healthy camels (Bikaneri breed) were randomly selected and kept for observation in loose housing system. All ten parturient camels were under the observation from at least one week before the expected date of Calving. The camels were maintained under identical system of management.

The open type of shed was provided with 1.5 meter high wire fencing. The fence was supported by iron angle. Some Kikar trees (*Prosopis Juliflora*) were there to provide the shed to dam and calf. Each camel was provided with 40 - 45 meter square space and a common feeding manger with 75cm breadth and 40 cm depth (internal dimension). The floor was kachcha with loose sand dune. The soiled sand of the floor was replaced with new sand as and when required.

All related observations were recorded on a suitably developed two paged score card containing all details parameters related to parturition as well as neonatal behaviour of camel. The recorded data were classified pertaining to different aspects and tabular analysis was conducted according to standard statistical method (Snedecor et al, 1981). The derived information was classified into four different aspects. Viz: 1. Symptoms of labour pain, 2. Pattern of behaviour in different stages of parturition, 3. Post partum behavioural characteristic of dam, 4. Behavioural features of neonatal calf.

Results and Discussion

Symptoms of labor pain:

Behavioural sign of labor pain of parturient camel is presented in table 1. The parturient camel prefers to be alone and separated from the main herd and this was very common and prominent sign. The showing two grooves on either side of the root of tail, concavity between the site of pin bone which is mainly due to relaxation of sacro-siatic ligaments, vulva was visible swollen and round, repeated lying down-standing up,

superficial mammary vein becomes tense and tortuous and swell under and teats were very common signs which indicated that calving process was likely to be start very soon. Where as some other signs 'Looking to the Flank' and 'aggressiveness' was not so common signs of an imminent birth of camel calf begin about 3-5 hr prior appearance of the calf.

Pattern of Behavior in different stages of parturition:

Behavioral phenomenon during different stages of partur camel is given in table 2. In maximum cases (80 %) allanto - (A - C) bag expelled out only after rupturing where as there were few cases (20 %) where A-C bag expelled out as such and it outside and subsequently released straw colour fluid. There average of 9 liters of fetal fluids, 80-90% of which is allanto (Musa and Abusineina, 1978). Amniotic fluid never exceeds more than 1 liter, which is much less than the volumes in either the cow or the goat. The average time (minute) gap between appearance and expulsion of C bag was 3.50 ± 1.00 and it may ranged from 2 to 5 min. The time (minute) gap between expulsion of A - C bag and appearance of fetus was 5.25 ± 1.66 where as the range value was 3 to 7 min. 70 % cases showed normal presentation which was out-stretched with chin of the calf resting on it. The posture of dam at the time of expulsion of fetus was on sternal recumbency (100 %). The average time (min) gap between appearance and expulsion of fetus was 6.23 (assisted labor case) and 42.50 ± 6.50 (unassisted labor case). Labor case means where manual assistance (slight pulling out) was given in the delivery process. The holding head and leg of fetus) was given in the delivery process. The head of the calf appears, usually still within an intact amnion. The breech gradually appears and the rear portion is then quickly ejected. The breech birth the hind legs appear first, but no additional help is required. The delivery of a normally positioned calf takes about 25 minute (1985). The post partum average time (minute) taken for expulsion of placenta was 55.86 ± 10.00 where as it may ranged from 30 min to 1 hour. The placenta can come off with the calf but is normally delivered after 40-50 min (Yagil, 1985).

Postpartum behavioral characteristic of Dam:

The post partum behavioral characteristic of dam is presented in table - 3. The dam stands up as soon as the calf was expelled out and nosing and smelling the calf was very common feature. In nor

natural delivery process the placenta was not eaten by dam (100%). After parturition maximum dam (80%) adapt their calf very quickly (within 5 to 10 min) but there were few cases (20 %) where dam took more time for this adaptation process. In maximum cases (90%) dams were extremely protective of her young and not readily allow anyone to handle her calf but few dams (10 %) were reluctant to this behaviour. The mother stands as soon as the calf is out. This severs the umbilical cord. The mother does not bite the cord, lick the calf or eat the afterbirth, as do other ruminants, bitch, sow or mare (Fraser, 1968).

Behavioral feature of neonatal calf:

The neonatal behavioral feature is presented in table 4. The average time (minute) taken for the calf to stand on his leg was 56.23 ± 10.44 whereas the range value was 25 to 90 min. The average time (minute) taken for first suckling attempt was 80.26 ± 8.53 where as the time interval for suckling was varies from 1 to 3 times per hour. The average (minute) time taken for exertion of muconium was 32.00 ± 5.64 . But the average time (minute) taken for first urination was 61.50 ± 2.11 . Behavioural pattern appeared immediately following birth of camel calf. The calves in a normal parturition assumed sternal position with head slightly dropping towards the ground. The eyes were generally covered by mucous membrane; then opened up after the birth. The dam nosed and smelled the calf again and again but did not lick the young one. The newborn calf made repeated attempts to stand up until finally the hind legs flexed sufficiently to support the body. On an average, it took about 50 min (20 to 90 min) for the calves to stand (Tandon et al., 1998). The average rectal temperature (Degree C), pulse rate and respiration rate (time/min) were 36.58 ± 1.29 , 122.00 ± 8.54 and 35.50 ± 2.66 , respectively. In maximum cases (90%) the locomotary movement of newly born calf was normal within 12 to 24 hr after parturition but some calves (10 %) took more time to normalize their locomotary movement. On the other hand maximum calf (90%) can properly walk after 6 to 7 days of parturition even though there were few cases (10%) that can have a proper walk before 6 to 7 days. Shortly after birth the calves made effort to stand and took about 35.50 min to stand. Initially the movement was unsteady with staggering gait. New born calves kept their forelegs forward with slope and hindlegs stretched behind the forelegs. The locomotion became normal after 10-12 hr, and the calves started following the mother, walking by its sides or behind. The first

urination and defecation was noted between 60 to 80 min, and min postpartum respectively (Tandon et al., 1998).

Table 1: Behavioral sign of labor pain of parturient Camel

Sign	% Distribution Of Occurrence (N=10)
Wants to be alone, separate from the herd	100
Showing two grooves on either side of the root of tail	100
Concavity between the site of pin bone	100
Vulva is visibly swollen round	100
Uneasiness, scrapping the ground with hind feet	80
Repeated lying down and standing up	100
Superficial mammary vein become tense and tortuous	100
Swelling of the udder	100
Occasional discharge from vulva	90
Looking to the flank	20
Aggressiveness	10

Table 2: Behavioral phenomenon during different stages of parturition of camel

Parameter	Mean (N=10)	Range	Related feature
Expulsion of A-C bag: (%)After rupturing			80
(%)Without rupturing			20
Time gap between appearance and expulsion of A-C bag (min)	3.50±1.00	2-5	
Time gap between expulsion of A-C bag and appearance of fetus (min)	5.25±1.66	3-7	
Presentation of fetus (%):			
Normal			100
Abnormal			NK
Posture of dam at the time of expulsion of fetus (%)			100
			SR
Time gap between appearance and expulsion of fetus (min):			
Assisted labor (6)	6.23±2.44	5-10	
Non assisted labor (4)	42.50±6.50	25-60	
Postpartum time taken for expulsion of placenta (min)	55.86±10.0	30-120	

(NK= No knowledge, SR = Sternal recumbency)

Table 3: Postpartum behavioral characteristics of camel dam

Behavior	Distribut occure (N=1	%
Stands as soon as the calf being expelled (calf adoption):	100	
Quick (within 5-10 min)	80	
Not quick (> 10 min)	20	
Nosing and smelling the calf	100	
Placenta not eaten	100	
Protecting her young and not readily allowing anyone to handle her calf (%):		
Extremely	90	
Not extremely	10	

Table 4: Neonatal behavioral features in camel

Parameter	Mean	R
Time taken for the calf to stand (Min)	56.23 ± 10.44	25
Time taken for 1st suckling attempt (Min)	80.26 ± 8.53	60
Time interval for suckling (Hr)		1
Time taken for Excretion of Muconium (Min)	32.00 ± 5.64	10
Time taken for 1st Urination (Min)	61.50 ± 2.11	55
Rectal Temperature (°C)	36.58 ± 1.29	36
Pulse Rate (Time/Min)	122.00 ± 8.54	115
Respiration Rate (Time/Min)	35.50 ± 2.66	29
Locomotor movement (%):		
Normal (within 12 - 24 Hr)		90
Abnormal		10
(%) Proper walking (Days):		
After 6-7		90
Before 6-7		10

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الولادة والمواليد في الإبل الهندية ذات السنام تحت نظام الحظائر

المفتوحة

هشامياك بهكات، ساهاني م. س

عز القومي لأبحاث الإبل / بكتري 334001 - راجستيان - الهند

لبيحت: تم إجراء هذه الدراسة على عشر نوق من ذوات السنام في الشهر من الحمل وتم ملاحظتها لدراسة سلوك الولادة وسلوك صغارها بعد جريت هذه الدراسة على سلالة الجمل ذو السنامين في الهند والتي حفظت مفتوحة. قبل يوم من الولادة تم ملاحظة بعض التغيرات على النوق مثل الانعزال عن القطيع، مشاهدة انحدار على جانبي الذيل، استدارة الفتححة الخارجية وانتفاخها، انتفاخ الفرج والحلمات، بعض علامات الولادة مثل الخاصة والشرة في الإبل الهندية. متوسط الوقت بين ظهور أنشبة الجنينية كان 1.01 ± 3.50 دقائق. متوسط الوقت بين انفجار الجنينية وخروج الجنين كان 1.66 ± 5.25 دقيقة. نسبة الولادات كانت 100% حيث يخرج رأس الجنين وتحت الأرجل الأمامية ممتدة. الوقت بين ظهور الجنين وخروجه 2.44 ± 6.23 دقيقة في حالة تقديم 6.50 ± 42.50 دقيقة عند عدم تقديمها. متوسط الوقت بين الولادة ونيمة كان 10.00 ± 55.86 دقيقة. متوسط الوقت اللازم لوقوف الصغار كان 10.44 ± 56.23 دقيقة. معظم النوق (80%) تقبلت الصغار بينما احتاجت لمزيد من الوقت لقبول صغارها. متوسط الوقت من الولادة حتى الأولى للصغار كان 8.53 ± 80.26 دقيقة ومعدل الرضاعة من 1-3 الساعة. متوسط الوقت اللازم لإخراج البراز الجنيني كان 32.00 ± 3 قة. وكان أول تبول بعد 2.11 ± 61.50 دقيقة. حوالي 90% من الصغار التي بعد 12-24 ساعة بينما 10% منها احتاجت وقت أطول.