

Indigenous management of Dystocia in ruminant livestock of northern guinea savanna of Nigeria

G. N. Akpa, O. J. Ifut and F. Mohammed

Department of Animal Science, Ahmadu Bello University, Zaria

Abstract

This study, conducted in Bauchi and Zaria areas of the northern guinea savanna zone of Nigeria involved livestock that encountered problems during parturition. Ninety eight Hausa-Fulani livestock holdings involving cattle, sheep and goats were investigated. The study focused on causes of and remedies for dystocia. The study showed that farmers have traditional means of handling difficult birth in ruminants. The identifiable causes of dystocia included age and size of dam, abnormal foetal presentation, poor health, multiple foetuses and weight and sex of the young. The management of this problem included the use of hand to correct foetal position, lubrication of the vulvo-vagina passage with mashed okra fruit for easy passage, and oral administration of solutions from native herbs, snake scales, potash and ashes.

Keywords: *Traditional knowledge, Dystocia, ruminants, Nigeria*

Introduction

Ruminant livestock production plays an important role in the economy of developing countries. Cattle, sheep and goats are found in every sub-region of the African continent (ILCA, 1981). Nigeria possesses about 13.9, 22.1 and 34.5 million cattle, sheep and goats, respectively (FDLPCS, 1991). They supply food and raw materials, and also serve as source of foreign exchange. However, ruminant animal production has been hindered by high rate of mortality partly caused by dystocia.

The improvement in production of ruminant animals in developing countries is important in order to ensure maximum contribution from these species. However, factors such as foetal

death during gestation accounted for approximately 82% of the reduction in calf crop (Belows and Short, 1994). Calf death at or shortly after birth ranked second in importance among the factors that reduce the potential net calf crop. Anderson *et al.* (1979) found that 72% of the anatomically normal calves lost at or shortly after birth were due to the difficult birth. There is dearth of information on dystocia and its management in Nigeria. This study was therefore, designed to determine the prevalence and causes of dystocia in traditionally managed ruminant herds as well as the remedies adopted by the farmers.

Materials and methods

The study was conducted in two areas of northern guinea savanna zone of Nigeria, namely, Bauchi and Zaria. In Bauchi, nine locations, Tirwun, Yelwa, Bayara, Yali, Shadawanka, Durum, Galambi, Kyangare and Jahun while Zaria, eight locations, Samaru, Biye, Jama'a, Hayin Mallam, Tudun Sarki, Zango, shika and Borno, with Hausa-fulani livestock holdings were investigated. Bauchi is located on latitude 10°17'N and longitude 09°49'E with an altitude of 600m above sea level. It has an average annual rainfall of 1095mm and temperature of 25°C. Also, Zaria is located on latitude 11°12'N and longitude 07°33'E with an altitude of 610m above sea level. The average annual rainfall and temperature were 1107mm and 24°C, respectively.

A total of 98 Hausa-fulani ruminant holdings were studied for incidence, cause of and indigenous remedies for dystocia. Also investigated was the effectiveness of each remedy as practiced by the farmers. The study covered the 7 months of active calving, lambing and kidding period of the year in the north, from August, 1998 to March, 1999. Data were collected through direct observation in the herds and personal discussion with herd owners. After initial visit, a return visit was made a month later to check the effectiveness of their remedial practices as evidenced by whether the dam and/or the young survived or died. During the study period, the parturition records for the herds were 433 cattle, 312 sheep and 135 goats and 68, 42 and 15 respectively of these suffered dystocia. Summary and descriptive statistics were used to present the results of the study.

Results

Incidence of Dystocia

Table 1 shows the incidence of dystocia in ruminant farm animals of northern guinea

savanna of Nigeria. Fifty-six cases of dystocia out of four hundred and eighty parturition were recorded in Bauchi and sixty-nine out of four hundred and seventy in Zaria. In the northern guinea savanna, the incidence of dystocia was 13%; 7,4 and 2% in cattle, sheep and goats respectively. However, on individual species basis, the incidence of dystocia was 16, 15 and 11% for cattle, sheep and goats, respectively. Generally, the incidence was about the same in both Bauchi (13.3%) and Zaria (13.7%).

Causes and remedies for dystocia

The cause of dystocia in ruminant farm animals were age, size, poor health and feeding, Bullying of dam, abnormal foetal presentation, sex, weight of young and multiple births (Table 2). The most frequent cause of dystocia (Table 3) was abnormal foetal presentation, followed by age and size of dam. The least frequent causes were sex of young and multiple birth; and affected only cows and does, respectively. In Bauchi, weight of young at birth as a cause of dystocia was observed to affect cows only; while in Zaria, it affected both cows and ewes. However, weight of young at birth and health of dam were not observed as causes of dystocia in does.

The use of hand to correct, okra on birth canal, native herbs, ashes, potash, snake scales and veterinary clinics for caesarean operations were adopted as remedies.

Efficacy of remedies

The use of hand and application of okra paste on birth canal (Table 4) were prominent in all the species but dam and young total mortalities were higher compared to other remedies, excepting in the sheep. The use of native herbs, ashes potash and snake scales were adopted mainly in Zaria, and proved to be effective, except in ewes where the dam was lost from the application of potash. Caesarean operations in veterinary clinics also were predominantly

Management of dystocia in ruminants

adopted in all species and were moderately effective except in Bauchi where the cows and ewes died. In all, from the 68 cows, 42 ewes and 15 does that suffered dystocia, only 3 cows and 11 calves, 1 ewe and 1 lamb, and 0 doe and

10 kids, were lost through the adoption of the various remedies. The total number of young for the affected cows, ewes and does were 68 calves, 44 lambs and 21 kids, respectively (Table 3).

Table 1 Incidence of difficult birth among ruminant animals in Zaria and Bauchi environments

Location	Species	No	Problem atic	Free	Cause	Remedy
Bauchi	Cattle (Cows)	201	31(16)	170	Age of animal. Size of animal. Abnormal position. Sex of young	Operation in veterinary clinic. Use of hand to correct. Use of okra on birth canal.
	Sheep (Ewes)	142	17(12)	125	Poor health. Bullying. Poor feeding	Use of hand to correct
	Goat (Does)	65	8(12)	57	Age of animal. Twinning. Poor health. Abnormal position. Poor feeding	Use of hand to correct operation in veterinary clinic.
Zaria	Cattle (cows)	232	37(16)	195	Age of animal. Twinning multiple birth. Poor feeding., Animal position. Size of animal	Use of hand to correct operation in veterinary clinic.
	Sheep (Ewes)	170	25(15)	145	Age of animal. Size of animal. Poor health. Poor feeding. Abnormal position. Sex of young. Weight of young. Twinning.	Use of hand to correct. Use of native herbs. Use of ashes. Use of snake scale. Operation in veterinary clinic.
	Goat (Does)	70	7(10)	63	Age of animal. Abnormal position Twinning. Poor feeding. Poor health. Size of lamb	Use of hand to correct. Use of native herb. Use of potash. Operation in veterinary clinic.
Overall	Cattle (Cows)	433	68(16)		Age of animal. Multiple birth. Twinning. Abnormal position	Use of hand to correct. Use of native herb.
	Sheep (Ewes)	312	42(15)			
	Goat (Does)	135	15(11)			

Figures in parenthesis are percentages.

Table 2 Frequency of individual causes of difficult birth in ruminants.

Cause	Species	Frequency		
		Bauchi	Zaria	Total
Age of animal	Cattle (cows)	7(2.58)	8(21.62)	15(22.06)
	Sheep (Ewes)	3(17.65)	5(20.00)	8(19.05)
	Goat (Does)	2(25.00)	1(14.28)	3(20.00)
Size of animal	Cattle (cows)	4(12.90)	4(10.81)	8(11.76)
	Sheep (Ewes)	-	3(12.00)	3(7.14)
	Goat (Does)	1(12.90)	1(7.00)	2(13.33)
Poor feeding	Cattle (cows)	2(6.45)	1(2.70)	3(4.41)
	Sheep (Ewes)	1(5.88)	1(4.00)	2(4.76)
	Goat (Does)	1(12.50)	1(14.26)	2(13.33)
Abnormal position	Cattle (cows)	7(22.58)	11(29.72)	18(26.47)
	Sheep (Ewes)	6(35.29)	4(20.00)	10(26.19)
	Goat (Does)	2(25.00)	2(28.57)	4(26.66)
Poor health	Cattle (cows)	4(12.90)	3(8.11)	7(10.29)
	Sheep (Ewes)	1(5.88)	6(24.00)	7(16.76)
	Goat (Does)	-	-	-
Twinning	Cattle (cows)	-	1(2.70)	1(1.47)
	Sheep (Ewes)	5(29.41)	4(16.00)	9(21.42)
	Goat (Does)	1(12.50)	1(14.26)	2(13.33)
Multiple birth	Cattle (cows)	-	-	-
	Sheep (Ewes)	-	-	-
	Goat (Does)	1(12.50)	1(14.26)	2(13.33)
Weight of birth	Cattle (cows)	1(3.23)	5(13.51)	6(8.82)
	Sheep (Ewes)	-	1(4.00)	1(2.38)
	Goat (Does)	-	-	-
Bullying	Cattle (cows)	3(9.68)	-	3(4.41)
	Sheep (Ewes)	1(5.88)	-	1(2.38)
	Goat (Does)	-	1(14.28)	1(6.67)

Figures in parenthesis are percentages

Discussion

Foetal malpresentation was the major cause of dystocia in ruminant farm animals. This assertion agrees with the observation by Morton and Cox (1968). Farmers handled this condition mainly by introducing their hands into the birth canal after applying paste of okra fruit. The role of okra was to lubricate the passage and ease entry of hand into the birth canal for manipulation of the foetal position. Native herbs were also administered orally by the farmers to facilitate delivery. However, the

names of such herbs were kept as top secret by the farmers.

Age and size of dam, to some degree, caused dystocia, especially among dams of first parity that were young. This is in agreement with the report by Arthur *et al.* (1982). However, multiparous aged dams were sometimes also affected. This according to the farmers was probably due to decreasing ability of the older dams to cope with pregnancy and the associated stress. On size of dam the sheep and

Management of dystocia in ruminants

Table 3 Efficacy of remedial in handling difficult birth in ruminants

Remedy	Species	No	Bauchi						Zaria						Overall	
			Survival		Dead		Survival		Dead		Survive		Dead		Dam	Young
			Dam	Young	Dam	Young	Dam	Young	Dam	Young	Dam	Young	Dam	Young		
Use of hand to correct and use of okro on birth canal	Cattle (cows)	28	26	23	2	5	21	21	17	0	4	49	47	40	2	9
Operating in veterinary clinic		3	2	1	1	2	8	8	8	0	0	11	10	9	1	2
Use of native herb		-	-	-	-	-	4	4	4	0	0	4	4	4	0	0
Use of ashes		-	-	-	-	-	2	2	2	0	0	2	2	2	0	0
Use of snake scale		-	-	-	-	-	2	2	2	0	0	2	2	2	0	0
Use of hand to correct and use of okro on birth canal	Sheep (Ewes)	17	17	20	0	2	20	20	18	0	5	37	37	38	0	0
Use of native herb		-	-	-	-	-	2	2	2	0	0	2	2	2	0	0
Use of ashes		-	-	-	-	-	1	1	1	0	0	1	1	1	0	0
Use of potash		-	-	-	-	-	1	1	1	0	1	1	1	1	0	1
Operation in veterinary clinic		-	-	-	-	-	1	1	1	0	1	1	1	1	0	1
Use of hand to correct and use of okro on birth canal	Goat (Does)	7	7	4	0	6	6	6	5	0	2	13	13	9	0	8
Operation in veterinary clinic		1	1	1	0	2	-	-	-	-	-	1	1	1	0	2
Use of native herb		-	-	-	-	-	1	1	1	0	0	1	1	1	0	0

goats had more of the difficulties than cattle and conforms with the report by Neumann (1977).

Twinning and multiple births were observed to be low for first parity dams than multiparous ones, in consonance with the observations by Arthur *et al.* (1982). Multiple birth resulted in dystocia only in does while twinning caused it only in ewes. This was so because only the goats had records of triplets and the sheep had maximum birth of twins with the cow producing only singles. Sex and weight of young influenced occur of dystocia mainly in cows and sparingly in ewes and not in goats. This was associated with the size of the foetus at birth; and it was more prominent with male offspring which were heavier than their female counterparts. Laster *et al.* (1973) reported that some ruminants that had problem at birth had bigger offspring than those that did not.

Most farmers associated poor feeding with dystocia because feeding of animals became quite difficult during the dry season and affects them especially if it correspond with the period of pregnancy. Similar reasons were given by Osuagwuh (1980) for incidence of dystocia and parturition losses in cross bred sheep. Poor health as a cause of dystocia was prominent in ewes and cows, especially if the particular illness was left untreated. To avoid this, adequate health care is recommended during pregnancy. Bulling as a cause of dystocia was reported for all species but was observed most in goats and least sheep. This can be prevented by separating pregnant from non-pregnant animals.

For most of the remedial measures adopted by farmers, they were prepared in liquid form. For instance, The snake scale was soaked in water and administered to affected animal orally. This was believed to facilitate quick delivery. On the

use of ash, it was dissolved in water and administered orally; some of the ashes was applied to make a line along the spine to the tail of the animal to facilitate delivery. Potash was dissolved in water and the solution administered orally to clear the system, and facilitate delivery.

Conclusion

There were incidence of dystocia in traditionally managed ruminant animals. The livestock owners have a good knowledge of the causes of the problems, and have individually developed means of handling it. Such remedial measures adopted include manual manipulation of the foetus, oral or vulvo-virginal application of concocted materials.

References

- Anderson, G. B., Cupps, P. T., and Drost M.** 1979. Induction of twins in different breeds of cattle, *J. Anim. Sci.* 54:485
- Arthur, G. H. Noake, D. E. and Pearson, H.** 1982. Dystokia in Veterinary Reproduction and Obstetrics. 5th Edition, Bailliere tindel, pp. 145.
- Bellows, R. A. and Short, R. E.** 1994. Factors affecting calf crop. In: L M.J.Fields and R. S. Sand (Eds.) Reproduction losses in Beef Industry, CRC Press, Boca, Raton FL; pp. 109.
- FDLPCS.** 1991. Nigerian National Livestock Survey: Federal Department of Livestock and Pest Control Services. Federal Ministry of Agriculture and natural Resources, Abuja, Vol. 1, pp. 289.
- ILCA.** 1981. Trends and prospects for livestock and crop production in Tropical Africa. Working document No. 5 Addis Ababa, Ethiopia.

Management of dystocia in ruminants

- dystocia and the effect of dystocia on subsequent reproduction in beef cattle, *J. Anima. Sci.*, 36: 696-705.
- Morton, D. H. and Cox, J. E.** 1968. Types of dystocia and with the species. In: G. H. Arthur (ed.) *Veterinary reproduction and obsterics*. 3rd Edition. Bailliere Tindall; pp. 137.
- Neumann, A. L.** 1977. *Pregnancy, parturition and care of the calves in beef cattle*. 7th edition, Canada; pp. 164.
- Osuagwuh, G. I. A.** 1980. Cross breeding in tropical sheep, incidence of dystocia and parturition losses. *Trop. Anim. Hlth. Prod.* 12(2): 85-86.

(Received 14 November 2000; Accepted 10 October 2001)