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Retrospective Analysis of Dystocia in Small Ruminants of North Western Himalayas

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Abstract: A brief retrospective analysis of thirty small ruminants reared in north western Himalayas, suffering from dystocia were evaluated over a period of two years in Teaching Veterinary Clinical Complex, Palampur, India. The clinical cases of dystocia were categorized into fetal (n = 11) and maternal causes (n = 19). Fetal causes included faulty maldisposition (n = 5), fetal monster (n = 2) and oversized fetus (n = 4). Similarly, maternal causes includes incomplete cervical dilatation (n = 8), uterine torsion (n = 2), narrow pelvis (n = 7) and secondary uterine inertia (n = 2). Thirteen animals were relieved from dystocia by gentle traction and rest seventeen animals were subjected to caesarean section by lower left flank laparohysterotomy. All does except three, had an uneventful recovery. Only 21.62% (n = 8) live kid/lamb were delivered by traction or caesarean section procedures adopted. In our study major causes of dystocia due to fetal and maternal origin were faulty maldisposition (45.45%) and incomplete cervical dilatation (42.10%). The 60% (18/30) of dystocia were present in yearling or primiparous females.

Key words: Small ruminants, dystocia, caesarean section, females, lamb

INTRODUCTION

Dystocia or difficult birth is a common condition in small ruminants (Sheep and Goats) resulting in huge economic losses to the farmers either due to death of new born or dam or adversely affects the fertility of dam (Mcsporran, 1980). Difficult births in the ewe flocks have been reported to be 3% (Jackson, 1995) but the variation exists in breeds with incidence ranging from 4.1% in Merino ewes (George, 1975) to 34% in Dorset ewes (George, 1975). Obstetrical problems in goats are similar to those in sheep (Rahim and Arthur, 1982; Majeed, 1994), however, the incidence of dystocia is considered higher in goats compared to ewes (Sharma *et al*., 1999; Mehta *et al*., 2002). The incidence of dystocia generally is influenced by factors such as breed of the sire, breed of the dam, age of the dam, number of foetus and body weight of the dam (Hanie, 2006).

The causes of dystocia can be classified according to origin viz. maternal and fetal (Arthur *et al*., 1996). Various procedures have been used for treatment of dystocia in ewes, including; pharmacological, correction of fetal maldisposition with traction and caesarean section (Roberts 1986; Arthur *et al*., 1996). Attempts at dystocia correction must, therefore, be directed towards removal of primary cause of dystocia followed by manual delivery and administration of injections of oxytocin (Jackson, 1995).

The objective of this study was to perform retrospective analysis of various referred cases of dystocia in small ruminants presented in Teaching Veterinary Clinical Complex (TVCC).

MATERIALS AND METHODS

The study was conducted in thirty referred clinical cases of sheep and goat suffering from dystocia presented in Teaching Veterinary Clinical Complex (TVCC) of College of Veterinary and Animal Sciences, Palampur, India over duration of 2 years (Jan, 2012-Dec, 2013). The cases were diagnosed and suitably categorised to either fetal or maternal causes of dystocia. Animals were

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Table 1: Incidence of various etiologies of dystocia in small ruminants

Fetal	Causes	Incidence (%)
Fetal (n = 11)	Faulty disposition (n = 5)	45.45
	Monster (n = 2)	18.18
	Oversized fetus (n = 4)	36.37
	Overall incidence	36.67
Maternal (n = 19)	Incomplete cervical dilatation (n = 8)	42.10
	Uterine torsion (n = 2)	10.53
	Narrow pelvis (n = 7)	36.84
	Secondary uterine inertia (n = 2)	10.53
	Overall incidence	63.33

Table 2: Comparison of fetal survivability using different treatment procedures adopted to relieve dystocia in small ruminants

	Fetus delievered		
Procedure adopted	Male	Female	Fetal survival rate (%)
T_1 manual traction (n =13)	9	6	-
	-	-	-
	-	-	4/15
	-	-	(26.66%)
T_2 caesarean section (n = 17)	18	4	4/22 (18.18%)

subjected to either manual Traction (T_1) or caesarean section (T_2) depending upon history, time of rupture of water bags and per vaginal examinations. Caesarean section was performed by lower left flank laparohysterotomy (Arthur *et al*., 1996).

RESULTS

Thirty animals aging 1-5 years presented in TVCC were subjected to either forced extraction by gentle Traction (T_1) or caesarean section (T_2). The animals were subjected to either of treatment protocols depending upon time of initiation of the labour pains, rupture of water bags and prior handling by field paravet staff. Causes of dystocia and their treatment procedures have been summarized in Table 1 and 2.

Various causes of dystocia were categorised to fetal (36.67%) and maternal causes (63.33%) depending upon the etiologies. Fetal factors include faulty disposition (45.45%), monster (18.18%) and oversized fetus (36.37%). Similarly maternal factors include incomplete cervical dilatation (42.10%), uterine torsion (10.53%), secondary uterine inertia (10.53%) and narrow pelvis (36.84%).

Thirteen animals (43.33%) were relieved from dystocia by following standard procedures (Jackson, 2004) of correction of faulty disposition (mainly postural defects) by gentle traction, similarly seventeen animals (56.67%) were subjected to caesarean section by lower left flank laparohysterotomy. Eight live kid/lamb were delivered by traction or caesarean section procedures adopted for relieving dystocia. All the animals were treated with Injection Amoxirum forte® @5-10 mg kg^{-1} BW o.d i/m and Meloxicam® @ 0.2-03 mg kg^{-1} BW i/m and supportive treatment for 5-7 days. Sutures were removed fortnight after the caesarean section. All animals except three (two with ventral vaginal tear approximately 4-5 inches leading to cloaca formation and other, delayed case of secondary uterine inertia i.e., 4-5 days after first lam1bing) had uneventful recovery. Only 21.62% live kid/lamb were delivered by traction or caesarean section procedures adopted.

DISCUSSION

The birth canal of the parturient sheep and goat is very fragile and undue force in pulling out a maldisposed fetus results in uterine rupture with subsequent prolapse of abdominal organs and hence care must be exercised in manual delivery. Incidence of fetal and maternal dystocia in present study was 36.67 and 63.33%, respectively. Incidence of maternal causes of dystocia was reported to be 31.4-57.8% (Majeed and Taha, 1989; Purohit *et al.*, 2006) in goats and 35-50% (Hughes Ellis, 1958; Thomas, 1990; Majeed and Taha, 1995; Kloss *et al.*, 2002) in sheep.

In present study faulty maldisposition (45.45%) and incomplete cervical dilatation (42.10%) were main causes responsible for dystocia and similar findings have been earlier reported by Hughes-Ellis (1958), Blackmore (1960), Thomas (1990) and Jackson (2004) in sheep and (Rahim and Arthur, 1982; Purohit *et al*., 2006) in goats. The incidence of postural abnormalities has been reported between 63-69% in sheep and goat (Sharma *et al.*, 1999; Purohit *et al.*, 2006). Failure of the cervix to dilate (ring womb) in sheep and goats has been suggested to be due to hypocalcaemia, hypophosphatemia, mineral imbalance and or/ingestion of estrogen by pregnant animals, present in fungi or clover Adams, 1986; Al-Sultan and Majeed, 1996; Braun, 1997).

All the animals were subjected to either manual traction (43.33%) or caesarean section (56.67%) depending upon history, time of rupture of water bags and per vaginal examinations. The success of these treatments are related to several factors including absence of infections, cervical prolapse and trauma resulting from attempted delivery of fetus by farmers, duration of case (Majeed *et al.*, 1993; Majeed, 1994; Scott, 2005).

Cesarean section was reported to be an effective method for treatment of most types of dystocia and was safe for the dam as well as the fetus, especially when performed as early as possible after onset of labor (Cox, 1982; Scott, 1989; Majeed *et al.*, 1993; Majeed, 1994; Sharma *et al.*, 2010). The most common indications for caesarean section in the ewe are failure of

the cervix to dilate and relative or absolute oversize of the fetus (Cox, 1982; Roberts, 1986; Arthur *et al.*, 1996). In rare cases, fetal emphysema, uterine torsion and monsters (Kisani and Wachida, 2012) may require a caesarean section to deliver the fetus (Roberts, 1986).

CONCLUSION

In the study 21.62% live kid/ram were delivered by traction or caesarean section procedures adopted as most of the animals presented were beyond 3-5 h after the rupture of water bags so foetal survival rate was below the desirable standards. The 60% (18/30) of dystocia were present in yearling or primiparous females in our study which has earlier been suggested by Jackson (2004). In conclusions, major causes of dystocia in small ruminants were faulty maldisposition (45.45%) and incomplete cervical dilatation (42.10%).

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