

CLINICAL MANAGEMENT OF PRE AND POST PARTUM PROLAPSE IN SMALL RUMINANTS USING A MODIFIED VULVAR SUTURE

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ABSTRACT

Eighteen small ruminants presented for the treatment of genital prolapse (uterine, 6 and vaginal, 12) were included in this study. Vaginal prolapses were predominantly observed during gestation (usually advanced stage) and uterine prolapses were following parturition. Highest prevalence of genital prolapse was recorded in goats within their 1st and 3rd parity in winter months. First grade vaginal prolapse could be controlled effectively by exogenous progesterone therapy (@250 mg hydroxyprogesterone i.m. twice a week) with hind quarter elevation of the affected animals. However, Modified Buhner's suture resulted in persistent retention of the prolapsed parts without causing disfigurement of the vulvar lips in animals suffering from 2nd and 3rd grade vaginal and from uterine prolapse.

INTRODUCTION

Genital prolapse associated with excessive oedema, mucosal trauma, contamination and fatal haemorrhage should be considered as emergency with grave prognosis. These conditions are always challenging to the veterinarian under field condition. Although high estrogen level is considered as prime factor for ante-partum vaginal prolapse (Roberts, 1971), exact etiology of uterine prolapse is ambiguous (Noakes *et al.*, 2001a). Incidence of reproductive tract prolapse in cattle ranges between 1-2% (Patterson *et al.*, 1981); however, this conditions in small

ruminants is very low. Barring a few reports (Bhattacharyya *et al.*, 2006) no literature is available regarding this condition. Several methods to manage this condition have been described (Noakes *et al.*, 2001a, b and Bhattacharyya *et al.*, 2006). The present study describes prevalence and management of genital prolapse in small ruminants.

MATERIALS & METHODS

Small ruminants (8 sheep and 10 goats) presented with prolapse constituted the materials of the present investigation. The study was carried out on 6 cases of uterine (Fig 1) and 12 cases of vaginal (Fig 2) prolapse. Out of which Uterine prolapse was found in 4 sheep and 2 goats, while vaginal prolapse was recorded in 6 sheep and 6 goats. Vaginal prolapse was developed predominantly during pregnancy (3-4 months) and uterine prolapse following parturition. Prevalence of the condition was recorded with respect to species, parity and season. Vaginal prolapse was graded as 1st, 2nd and 3rd degree. (Noakes *et al.*, 2001b). First degree vaginal prolapses were treated with exogenous progesterone therapy (@250 mg/ animal twice a week intramuscularly) along with hind quarter elevation for 2-3 weeks. In case of 2nd and 3rd degree prolapse modified Buhner's suture was applied.

Anesthesia was achieved by injecting 3 ml of 2% lignocaine hydrochloride epidurally. The animals were restrained in revolving table with the standing adjustments keeping rear parts elevated few inches off the table. Prolapsed mass as on washed for 5-10 minutes (Fig 3)

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with potassium permanganate solution (1:10000) prepared in cold water (4-6°C) to achieve vasoconstriction and reduce the prolapsed part. Bleeding points in uterus in one of the animals suffering from uterine prolapse were ligated using chromic catgut no 1. Prolapsed parts were manually raised few inches above to facilitate evacuation of urine efficiently. Vaseline was then applied liberally to the prolapsed mass and replaced (Fig 4) gently by standard procedure and protocol. Modified Buhner's suture was applied using black braided silk no 3 as follows:

A curved traumatic needle (4 no) was threaded with 4 folded 3 No. silk. The needle was punctured subcutaneously from one side of the vulvar lip (1-2 cm away from vulvar margin and 1-2 cm dorsal to the ventral commissure) in upward direction without piercing vulvar mucosa and passed through the mid area at dorsal commissure between anus and vulvar opening. The needle was reinserted through the same hole at dorsal commissure and passed subcutaneously in the other vulvar lip in downward direction. Needle was taken out through another hole which was at the same level and at equal distance from the hole of corresponding vulvar lip. Thus the free ends of the thread came out through two openings (Fig 5) near ventral commissure. A slippery knot was applied and tied firmly (Fig 6) to create a gap for urination between knot and the ventral commissure. A course of parenteral antibiotic, analgesic for 2-3 days, calcium borogluconate 25% (100 ml) and DNS 250 ml intravenously daily for 2-3 days (if required) was administered after application of suture. Besides this, one single dose of exogenous progesterone was given to the animals suffering from 2nd and 3rd degree vaginal prolapse when occurred upto 130 days of pregnancy but not beyond that. In the cases suffering from vaginal prolapse during advanced stages of pregnancy stitch was retained until parturition and owners

were advised to carefully loosen the knot without pulling the thread out at the time of parturition and reapplication of the knot if prolapse recurred. Finally dam survival was determined by follow up till 3 months of the treatment.

RESULTS & DISCUSSION

The study revealed an overall prevalence of genital prolapse in small ruminants as 1.08% (18/ 1666). Patterson *et al.* (1981) also reported similar finding in cattle. High prevalence was observed in goat on its 3rd parity (Table 1). Earlier reports indicated that primiparous animals are mostly affected with genital prolapse (Anonymous, 2008). However, no case beyond 3rd parity was reported to suffer with the condition. Under local condition there is a practice to sale off the small ruminants after 4-6 years of age. Both vaginal and uterine prolapse were observed predominantly during winter (Table 1). Under agro-climatic condition of Kashmir, sheep and goats are usually bred during late summer to autumn (August-October) and subsequently prolapse of reproductive tract develop during winter months (November-February). No seasonal view point has been documented regarding the condition so far in scanned literature.

All animals suffering from uterine prolapse were handled by quack/veterinarian elsewhere they failed and were referred, where as only 50% cases of vaginal prolapse were referred. Animals suffering from uterine prolapse were presented within a mean period of 12 hours, the range being 3-22 hours. However, exact duration of vaginal prolapse could not be ascertained as some of the cases were observed by the owner quite earlier before its presentation.

Uterine prolapse was developed immediately following parturition in majority of the animals (66.67%, 4/6) and in other 2 animals, prolapse developed on day 3 and 5 following parturition. Contrary to this vaginal prolapse cases were

predominant (10/12) during pregnancy and only 2 animals suffered from the condition immediately following parturition. Earlier observations revealed that advancing pregnancy tends to accentuate the occurrence of vaginal prolapse and mostly seen in last trimester of pregnancy (Noakes *et al.*, 2001b). It is indicated that animals suffering from ante-partum vaginal prolapse should be culled after weaning the current offspring because of its hereditary nature (Miesner and Anderson, 2008).

Tearing and laceration of vulva was observed in some animals (22.22%, 4/18) at the time of presentation and this was mainly due to faulty vulval suturing by para-veterinarian in field condition. Severity of vaginal prolapse was recorded as 1st, 2nd and 3rd grade in 33.33, 16.67 and 50.00% cases respectively. Exogenous progesterone therapy along with hind quarter elevation for few weeks could cure all the animals suffering from 1st degree vaginal prolapse. This supports our earlier observations that exogenous progesterone therapy can be used as good treatment protocol for controlling 1st grade vaginal prolapse in sheep and goat (Bhattacharyya *et al.*, 2006). Makhdoomi and Hussain (2001) were able to treat a chronic and recurrent 2nd degree vaginal prolapse in a goat successfully giving amyl alcohol epidurally.

Modified Buhner's suture was found advantageous over other vulval suture as it takes less time and minimum man power requirement. In the standard Buhner's technique two incisions are made, one below the ventral commissure and the other above the dorsal commissure of vulva, through which needle is inserted subcutaneously from lower one to upper one and then from upper to lower on the opposite side. Consequently both the free ends of the suture material come out through the lower incision. A knot is applied with the free ends of the suture material leaving a 3-4 finger space for urination. After completion of suture the skin of both the incisions are to be sutured.

However, in the present study needle was inserted through two different spots 1-2 cm above the ventral commissure away from the vulvar lips to create a gap between visible knot and ventral commissure of vulva for urination. Advantage of this modified technique is the surety of sufficient space left for normal urination. Moreover there is no need to suture the incisions below and above the vulvar area. Intravenous use of calcium borogluconate at the completion of suture application helps to correct hypocalcaemia generally occurring simultaneously in majority of the prolapsed animals (Noakes *et al.*, 2001a, b).

Overall dam survival was recorded as 88.89%; two animals died were in uterine prolapse category. Death of these animals might be resulting from shock and excessive blood loss. Therefore dam survivability can be increased by presenting the affected animals without causing further delay. Jubb *et al* (1990) recorded 73.5% survival rate with 84% post-prolapse conception rate in cattle.

From the study it can be concluded that 1st degree vaginal prolapse can effectively be controlled with exogenous progesterone therapy, where as modified Buhner's suture may be used as a good alternative to other traditionally used vulval truss in small ruminants suffering from 2nd and 3rd degree vaginal and uterine prolapse.

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Table-1: Prevalence of genital prolapse in small ruminants with respect to species, parity and season.

Parameters		Vaginal prolapse (n=12)	Uterine prolapse (n=6)	Genital prolapse (n=18)
Species	Goat	6 (50.00%)	4 (66.67%)	10 (55.56%)
	Sheep	6 (50.00%)	2 (33.33%)	8 (44.44%)
Parity	1 st	4 (33.33%)	4 (66.67%)	8 (44.44%)
	2 nd	2 (16.67%)	0	2 (11.11%)
	3 rd	6 (50.00%)	2 (33.33%)	8 (44.44%)
Season	Summer	2 (16.67%)	0	2 (11.11%)
	Spring	2 (16.67%)	0	2 (11.11%)
	Autumn	2 (16.67%)	0	2 (11.11%)
	Winter	6 (50.00%)	6 (50.00%)	12 (66.67%)



Fig 1: Uterine prolapse in a goat



Fig 2: Vaginal prolapse in a sheep



Fig 3: Washing of prolapsed uterus



Fig 4: Replacement of prolapsed parts

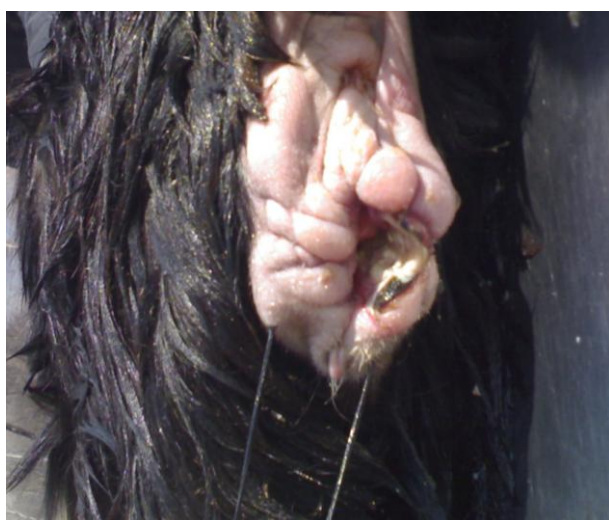


Fig 5: Free ends of the thread placed subcutaneously



Fig 6: Application of a slippery knot

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