

Research Article

A Retrospective Study on Type and Extent of Uterine Torsion in Buffaloes

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Abstract | Twenty five buffaloes suffering from uterine torsion were examined for stage of gestation, degree, site and direction of torsion. Results showed that uterine torsion in buffaloes occurred mostly in pluriparous buffaloes (56%) at full-term (72%), in clockwise direction (92%) and postcervical location (80%). It was mostly of 180° (48%) followed by 360° (32%) and >360° (20%). It is concluded that uterine torsion is mostly of 180 degree, clock-wise and post-cervical and it occurs mostly at term of pregnancy. Pluriparous buffaloes might be at greater risk of uterine torsion than primiparous.

Keywords | Stage of gestation, Degree of torsion, Pluriparous, Clockwise, Postcervical

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INTRODUCTION

Uterine torsion is a rotation of the gravid horn around its long axis (Rakuljic-Zelov, 2002) which leads to narrowing of the birth canal causing dystocia. Majority of uterine torsion cases involve the cephalic portion of vagina leading to stenosis along with spiral twisting of its wall (Roberts, 1986).

Torsion of the gravid uterus in bovine is a common condition encountered by the field veterinarians and has been reported to be one of the major causes of dystocia (Pearson, 1971; Sidiquee and Mehta, 1992; Singh et al., 1992). As far as bovine species is concerned, torsion of uterus is of great importance due to its incidence. Uterine torsion cases varied in its incidence in buffaloes from 53% to 83% of the dystocia

presented at different referral centers (Vasishta, 1983, Malhotra 1990, Singh, 1991a, Prabhakar et al., 1994, Purohit and Mehta, 2006, Srinivas et al., 2007, Purohit et al., 2011a, Purohit et al., 2011b, Purohit et al., 2012).

It appears that pregnancy stages affect the incidence of uterine torsion with a greater incidence during advanced pregnancy, immediately before parturition (Rakuljic-Zelov, 2002), and mostly during the second stage of labour (Arthur et al., 1989), although uterine torsion observed commonly in pluriparous animal at the time of parturition or during the last month of gestation and occasionally diagnosed at 5th–8th month of pregnancy (Roberts, 1986). It is considered as one of the complicated cause of maternal dystocia in buffaloes culminating in death of both the fetus

and the dam if not treated early. The present study evaluates retrospectively the type and extent of uterine torsion in affected buffaloes.

MATERIAL AND METHOD

ANIMALS

The present investigation was conducted on 25 buffaloes presented with varying degrees of uterine torsion at the Clinic of veterinary gynaecology and obstetrics, CVAS, Bikaner, with history of dystocia or due to a general medical problem like colic, straining or reduced food intake.

CLINICAL EXAMINATION

Clinical examination included transvaginal and transrectal examination of buffaloes to determine the degree, direction of torsion and presence of vaginal involvement. The location of broad ligaments or the twist in the vagina was the basis to determine the degree and direction of uterine torsion.

Diagnosis of postcervical uterine torsion was made by palpating the stenosed anterior vagina, whose walls were usually disposed in oblique spirals, which indicated the direction of uterine rotation. The cervix might not be immediately palpable, but by carefully following the folds into the narrowing vagina, the lubricated fingers could usually be pressed gently forwards and through the partially dilated cervix.

In buffaloes with precervical location of uterine torsion, the vagina was much less involved, and diagnosis was assisted by palpating the uterus by transrectal examination. Transrectal examination revealed the broad ligaments as displaced. One side of the ligament was pulled tightly over the uterus while the other was pulled ventrally to the uterus. Degree and its site were recorded for each case.

The stage of gestation was ascertained by examination of the signs of approaching parturition including relaxation of sacrosciatic ligaments and udder development. The classification was done as pre term (below 290 days) and full term (310±10 days). The age and parity of the dam was recorded from the history. Buffaloes were further grouped according to parity into either in 1st parity or 2nd parity or more than 2nd parity. Buffaloes were classified and grouped into age as 3-5 years, >5-7 years and above 7 years.

RESULTS AND DISCUSSION

Results showed that pluriparous buffaloes or aged buffaloes might be at greater risk of uterine torsion than primipara. In present study, 44% primiparous buffaloes suffered from uterine torsion, and pluriparous buffaloes accounted 56% of total cases. Similar observations have been recorded in previous studies (Kolla et al., 1999; Pascal et al., 2008; Amin et al., 2011). The proposed reasons include larger abdominal cavity, stretching of pelvic ligaments, loose and long broad ligaments together with loosening of uterine tissue and decreased uterine tone in aged bovines (Roberts, 1986; Berger, 1995; Drost, 2007; Aubry et al., 2008).

It is also noted in this study that as the age and parity increased the incidence of uterine torsion observed to be lower. In 3-5 years age buffaloes or in first parity it was 44% and in >5-7 years and more than 7 years it was 36% and 20%, respectively. And in second and above second parity the incidence of uterine torsion cases were 32% and 24%, respectively. The results supports the finding of previous study by Pearson (1971) that 28%, 22%, 24%, 14% and 12% of the cases were first, second, third, fourth and fifth gestations, respectively. It may be due to increased thickness of uterine muscles in pluriparous bovines that rejects the concept of loosening and destabilization of uterine tissue (Mochow and Olds, 1966). There is controversial statement with parity number that some authors claiming that the number of previous pregnancies does not appear to influence of uterine torsions (Arthur et al., 1989).

Most animals (72%) in the present study were at full term pregnancy which in agreement with the studies of Pearson (1971) and Manning et al. (1982) observed 98% cases of uterine torsion in cows at term. Uterine torsion may occasionally be diagnosed at 5 to 8 months of gestation (DeBruin, 1910; Craig, 1930; Arthur and Jenner, 1960; Pearson, 1971; Sloss and Dufty, 1980; Roberts, 1986; Ruegg, 1988).

Most cases of uterine torsion in the present study were postcervical torsion (80%) and only a few cases were precervical torsion (20%). These results were similar to that obtained by other authors (Pearson, 1971; Sloss and Dufty, 1980; Roberts, 1986; Arthur et al., 1989; Sharma et al., 1995; Frazer et al., 1996; Kolla et al., 1999; Aubry et al., 2008) who found that most of the

cases were postcervical. The probable reason for this could be because the anterior vagina is weakest point of the bovine genital tract or due to the absence of the muscles in the cervical area of broad ligaments (Singh, 1991b). Although Singh et al. (1992) reported equal frequency of pre- and post-cervical torsion. But Purohit et al. (2011a) reported the incidence of pre-cervical uterine torsion as 83.6% in buffaloes. Frazer et al. (1996) reported that precervical torsion was more likely to occur during the last trimester.

Results of the present study revealed that there was a tendency toward right sided uterine torsion (92%). Many previous studies on buffaloes (Vasishta, 1983; Malhotra, 1990; Prabhakar et al., 1994; Srinivas et al., 2007) also reported similar results in their studies. It is suggested that the rumen prevents rotation of the uterus to the left side and absence of a muscular fold on right broad ligament increases the possibility of right torsion (Singh, 1991b).

Table: Relationship of type and extent of torsion, with the age and parity of the dam and the stage of gestation in uterine torsion affected buffaloes (n=25).

Sr. no.	Parameters	n (%)		
1	Direction of uterine torsion	Right side 23 (92%) Left side 2 (8%)		
	2	Location of torsion	Precervical 5 (20%) Postcervical 20 (80%)	
3		Degree of torsion	180° 12 (48%) 360° 8 (32%) >360° 5 (20%)	
	4		Age of dam	3-5 yrs 11 (44%) >5 -7 yrs 9 (36%) >7 yrs 5 (20%)
				5
6		Stage of gestation		

Torsion of greater than 45° may result in dystocia (Sloss and Dufty, 1980). Minor torsions (45 to 90°) may be detected during routine pregnancy diagnosis, and probably undergo spontaneous correction (Roberts, 1986). During the present study mostly (48%) animals evidenced uterine torsion of 180°. These re-

sults in agreement with Sloss and Dufty (1980), Manning et al. (1982), Matharu and Prabhakar (2001), Aubry et al. (2008) and Pascal et al. (2008). Wright (1958) stated that the degree of uterine torsion (90-180) was considered the most common. Torsions of less than 180° are generally managed in the field and account for only 6 to 15% of referral cases (Pearson, 1971; Sloss and Dufty, 1980; Manning et al., 1982). In the present study 32% buffaloes evidenced uterine torsion of 360°. Interestingly, in one referral population, 66% torsions were of 360° (Williams, 1948). Proportion of above 360° torsion (20%) was less than others which was also seen in the studies of Pearson (1971), Sloss and Dufty (1980), Manning (2008). et al. (1982), Ruegg (1988), Frazer et al. (1996), Noakes et al. (2001) and Aubry et al. (2008).

CONCLUSION

The study was conducted on 25 buffaloes presented to the Clinics of Department of Veterinary Gynaecology and Obstetrics, CVAS, Bikaner for evaluating the incidence and type for uterine torsion. The diagnosis was confirmed by clinical examination; transrectal and transvaginal examination. History, sign and symptoms revealed that uterine torsion mostly occurred in the pluriparous buffaloes or in aged buffaloes (56%) at full term of gestation period (72%). Per rectal and per vaginal examination showed that majority of the cases were right side or clockwise (92%) and postcervical (80%). Incidence of 180° torsion was greater (48%) than 360° (32%) and above 360° (20%).

It is concluded that uterine torsion is mostly of 180 degree, clock-wise and post-cervical and it occurs mostly at term. Pluriparous buffaloes might be at greater risk of uterine torsion than primiparous.

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