Outcome of different regimes of treatment for uterine torsion in bovine at field level – A clinical study

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ABSTRACT
Total 41 bovine field cases (buffalo 27 and cow 14) of uterine torsion were studied for the outcome of treatment and survival rate of dam by Sharma’s modified method. Caesarean section was done in animals with incomplete cervical dilatation and neglected cases. For this study animals were divided into 3 groups depending upon the onset of labour pains. In Group I (upto 36 hrs) comprised fresh cases and detorsion with Sharma’s modified method. In Group II (upto 36-72 hrs) comprised those cases not relived by rolling of cervix failed to dilate cesarean section were performed. In Group III (beyond 72 hrs) comprised of all neglected cases of uterine torsion where caesarean was performed. The overall dam survival rates in the three respective groups were 87.50 per cent, 55.55 per cent, and 62.5 per cent, respectively. In the present study, the incidences of maternal and foetal mortality were 21.95 per cent and 43.90 per cent, respectively. Higher incidence of uterine torsion was recorded in pluriparous (73.17 per cent) bovine and occurrence of right sided uterine torsion in (92.68 per cent) of cases. The majority of the calves delivered were male (73.17 per cent). In conclusion, quick approach and early execution of right type of treatment for torsion helped in better survival rate to dam and foetus. The Sharma’s modified method is best method in fresh and unspoiled cases of uterine torsion.

Key words: Bovines, Incidence, Survival rate, Treatment regimes, Uterine torsion.

INTRODUCTION
Torsion of the gravid uterus in bovine was a common condition encountered by field veterinarians and had been reported to be major causes of dystocia (Sidiquee and Mehta, 1992; Singh et al., 1992). Uterine torsion was considered to be the single largest condition contributing to dystocia in buffaloes with incidence as high as 56 to 83 per cent (Srinivas et al., 2007; Lyons et al., 2012) and uterine torsion had been reported mostly in dairy type buffaloes of India, Pakistan and Egypt, but reports on its occurrence in the swamp buffalo were not seen, as reported by Purohit et al., (2011).

Rolling of the dam with a modified Schaffer’s method was the best in relieving cases of uterine torsion if attempted within 36 hours of exhibition of clinical signs, as opined by Srinivas et al., (2007) and Mudasir et al., (2010). Kumbhar et al., 2011 and Solanki et al., 2012 mentioned 100 per cent survival rate in modified Schaffers method. The use of the plank improved the success rate with up to 90 per cent attempted cases being corrected (Sloss and Dufty, 1980). Prabhakar et al., (1997) observed that if cervix failed to dilate uterine torsion and such condition had existed for more than 36 hrs, caesarean should be performed without attempting detorsion to improve the dam survival. The irreducible uterine torsion was the indication for the c-section (Arthur, 1992). Kolla Krishna Murthy et al., (1999) reported higher mortality rate in cases treated over 72 hours after appearance of clinical sign might be due to stress, toxemia, septicemia, dehydration, shock and peritonitis. Singh and Dhaliwal (1998) reported that cesarean section performed later than 18 to 36 hours led to high mortality due to endotoxemia, uterine edema, haemorrhage and dehydration.

The present paper deals with objective to describe field cases of uterine torsion with success of treatment and survival rate in bovine by Sharma’s modified method, caesarean after rolling of dam and caesarean without rolling.

MATERIALS AND METHODS
A total clinical cases of 41 bovine (buffaloes 27 and cow 14) with uterine torsion those presented in field for the treatment of dystocia having uterine torsion were recorded. Depending upon the general status, time, chronicity the type of handling and damage caused prior to presenting, the cases were divided into three groups. Animals were maintained under free-range system and were let loose for grazing in the field. The animal had free access to drinking water. Treatment
protocols included allowing finite amount of time for the animal to calve by itself, therapy to increase myometrial tone and cervical dilatation, which included supplementation of calcium, fluids, oxytocin (Nanda et al., 1991) and velathamide bromide.

In uterine torsion cases, durations of dystocia were classified according to the time of exhibition of clinical signs as below 36 hours, 36 – 72 hours, and over 72 hours as reported by Prabhakar et al., (1997). In group I (upto 36 hrs) comprised fresh cases and which were apparently free from vaginal tears or utero-omental adhesions and those animals were either standing or were able to stand were included. In Group II (upto 36-72 hrs) comprised cases suffering from uterine torsion but not relieved by rolling and cervix failed to dilate were included. These cases were subjected to caesarean section. In Group I and II, the rolling of the dam in a modified Schaffer’s method – Sharma’s method as described by Singh and Nanda (1996) was followed. In group III (beyond 72 hrs) comprised of all neglected cases of uterine torsion which were brought to clinics 2 to 3 days late, those cases were considered as unfit for rolling. Caesarean section was done through right paramedian site as per the standard procedure as reported by Roberts (1982). For all the cases of uterine torsions, the details were recorded on the incidences of maternal and foetal mortality, primiparous/pluriparous type animals, right/left type of torsion, clinical signs and after parturition which type of sex of foetus were delivered.

RESULTS AND DISCUSSION
Out of 24 cases in Group I included 21 cases (87.50 per cent) were successfully detorted by Sharma’s modified method (Srinivas et al., 2007; Das et al., 2010). The cervix was found fully dilated in 8 cases, partially dilated in 12 cases and completely closed in 4 cases after relieving the torsion. In cases with fully dilated cervix foetuses were delivered in few minutes after detorsion. In cases with partially dilated or closed cervix were treated by medicinal treatment and mechanical dilatation done as per the need. These cases in which there is no dilatation of cervix with in the next 12-24 hrs of interval then velathamide bromide was repeated. Out of 12 cases in partially dilated cervix and 4 cases of closed cervix only 11 and 2 cases dilated and delivered normally, respectively. The survival rate in buffaloes with fully dilated cervix, partially dilated and closed cervix were 100 per cent, 91.67 per cent and 50 per cent, respectively. In fully dilated cervix survival rate was higher due to less stress during handling and early treatment of torsion as compared to the cases of partially dilated cervix and closed cervix, in which 3 cases died after caesarean. The survival rate decreased with increase in the time taken for expulsion of foetus following torsion. These results were in close agreement with Nanda et al., (1991) and Srinivas et al., (2007).

In Group II caesarean performed soon after unsuccessful rolling and cervix failed to dilate. Out of 9 cases 6 (66.67) cases survived and 3 (33.33) cases died within 12-24 hrs after caesarean. These results were in very close agreement with Shivprasad et al., (2000). The maternal survival rate in the present investigation was higher than that recorded by Nanda et al., (1991) and Prabhakar et al., (1997). Whereas, Srinivas et al., (2007) reported that higher survival rate than the present investigation i.e. 77.77 per cent in bovine.

In Group III total 8 cases were found unfit for rolling, in this caesarean section was performed by right paramedian approach. The reason for this is due to advantages of this approach over flank incision and ventral medial incision (Singh et al., 2007). The right para-median incision gave better results with moderate haemorrhage, easy exteriorization of the uterus and its detorsion following uterine closure, easy closure of the surgical wound and minimal spillage of uterine fluids into the peritoneal cavity. This incision may also be taken when the left flank approach is obstructed by adhesion as a result of previous surgery, if there is rumen distention from left side and presence of large fetus at right horn and also by this approach there is prevention of herniation (Sagar et al., 2009). In this group, in which 5 (62.5 per cent) cases survived and 3 (37.5 per cent) cases died after operation. These results were in close agreement with Singh et al., (1978) and Nanda et al., (1991). Whereas, Shivprasad et al., (2000) and Srinivas et al., (2007) reported that higher survival rate than the present investigation i.e. 90.69 and 75.00 per cent in bovine, respectively. However, Prabhakar et al., (1997) reported that lower survival rate than the present investigation i.e. 47.30 per cent in bovine.

Detorsion failure was common in cases presented beyond 36 hours of delay and in animals where dead emphysematous fetus was present or uterine adhesions or uterine rupture was present (Purohit et al., 2011). In the first 36 hrs, from beginning of torsion udder and pelvic ligament was relaxed but after 72hrs, they were contracted (Prabhakar et al., 1994).

In the present study, the incidences of maternal and foetal mortality were 21.95 per cent and 43.90 per cent, respectively. Where as Amer and Hashem (2008) reported that 30.6 per cent mortality rate in buffaloes and foetal 55.6 per cent. Ali et al., (2011) reported that maternal and foetal mortalities occurred in 23.8 per cent and 78.6 per cent of the cases, respectively. Kumbhar et al., (2011) observed 73.33 per cent buffaloes were delivered with live fetus whereas in 26.66 per cent buffaloes fetuses were dead. Manning (1982) found that foetal survival rates in uterine torsion cases were between 44 and 58 per cent. The variability in survival rate was difficult to explain, but obviously factors such as duration of the condition and severity of the torsion were major
determinants of the outcome, where foetal mortality increased with increase severity as well as duration of uterine torsion (Amer et al., 2008).

In the present study, a high incidence of uterine torsion was recorded in pluriparous (73.17 percent) as compared to the primiparous (26.83 percent) bovines. These findings were in close agreement with Srinivas et al. (2007). Where as Ali et al., (2011) reported that incidence of uterine torsion in pluriparous (81.7 per cent) and primiparous (18.3 per cent) buffaloes, respectively. In the present study, it was observed that uterine torsions occurred more commonly in advanced stages of pregnancy (60.97 per cent) and at full term (39.02 per cent) in buffaloes. This might be due to vigorous foetal movements at term and probably to the dam’s capacious abdomen and weak/less musculature in broad ligaments and sudden slipping or jerky movements of the dam, as opined by Kolla Krishna Murthy et al., (1999) and Matharu and Prabhakar (2001).

Clinical examination revealed that, the occurrence of right sided uterine torsion in 92.68 per cent of cases. These results were in agreement with Ebriehim (2010) who mentioned right sided uterine torsion in buffaloes was more frequent. Moreover, Roberts (1982) and Frazer et al., (1996) stated left torsion were very rare in both cows and buffaloes. These findings were in close agreement with Matharu and Prabhakar (2001), Srinivas et al., (2007) and Ali et al., (2011). However, Manning (1982) recorded degree of torsion varied considerably from one study to another, and there was a marked difference between cases.

The predominant clinical findings recorded in cases of uterine torsion included non-progression of labor, anorexia of varying degrees, increased respiratory rate with grinding of teeth, normal temperature, colic pain, mucoid scanty dung, distended abdomen, dullness, depression and vulval oedema. These results were in close agreement with Purohit et al., (2011), Anjaneya et al., (2011) and Ayman et al., (2012). In present study the arching of back in buffaloes was reported, as similar finding was observed by Purohit et al., (2011). Higher incidence of straining was observed in more sever torsion. The high degree of tension may stimulate stretch receptor in the vagina invoking reflex abdominal straining and vulval oedema may be due to the compression of the vaginal veins and lymphatic drainage (Frazer et al., 1996). Anjaneya et al., (2011) reported that, the animal had normal temperature, sluggish ruminal activity, tachycardia and tachypnoea was observed in cases of uterine torsion. Some cases associated with teeth grinding, slight depression of lumbosacral vertebrae had been reported to be frequent symptoms of uterine torsion. Moreover, Sharma et al., (1995) mentioned mild colicky pain, partial anorexia, dullness, depression and shrunken udder were marked as common symptoms of torsion specially delayed cases.

The majority of the calves delivered were male (73.17 per cent) and female (26.83 per cent). These results were in close agreement with Shivprasad et al., (2000) and Srinivas et al., (2007). Where as, Prabhakar et al. (1994) and Matharu and Prabhakar (2001) reported male to female calf ratios in buffaloes were 5.5 to 4.5 and 4.4 to 5.5, respectively. However, Purohit et al. (2011) reported 7.1 per cent (2/28) of calves and 6.12 per cent (3/49) buffalo calves could be delivered live because of the reason that majority of the cases were brought after 36-48 hours of uterine torsion.

Results of the present study revealed that quick approach and early execution of right type of treatment for torsion helped in better survival rate to dam and foetus. The Sharma’s modified method was the best method in fresh and unhandled cases of uterine torsion. While dealing the cases by this method if the torsion was unable to relieved after 3-4 rolling, further rolling should be avoided to decrease the stress on animal for better survival rate. The uterine torsion had detrimental effect on the cervical dilatation and majority of cases required c-section for delivery of foetuses.

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