

CAESAREAN SECTION IN UTERINE TORSION AT BUFFALO (ROMANIAN INDIGENOUS BUFFALO) – A CASE STUDY CEZARIANA IN TORSIUNEA UTERINE LA BIVOLIȚĂ (BIVOLUL INDIGEN ROMÂNESC) – STUDIU DE CAZ

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ABSTRACT | REZUMAT

In Romania, buffalo exploitation has a traditional character and over 75% of the current buffalo population is in Transylvania. The current interest in the development of buffalo farms is in milk production and its properties. That is why, lately, farmers with micro-farms have appeared in other areas of Romania without tradition in growing buffalo. The reproduction in buffaloes is similar to the cow, but there are significant differences regarding the seasonality, the manifestation of the oestrous phase, the gestation. One of the conditions that seriously affect the reproductive function is the uterine torsion (T.U). Uterine torsion is an accident during the topographic gestation, which produces hemodynamic and lesional changes incompatible with gestation and parturition. Uterine torsion is a medical emergency because the life of the foetus and childbirth is endangered. In a buffalo farm in N-E Romania (*Terra di Bufala*, Războieni, Iași), a case of maternal dystocia was diagnosed represented by the topographic modification of the pregnant uterus, in the sense of turning the uterus around its axis. UT diagnosed was post-cervical, with a twist of over 180° in the right session. After a few detorsion attempts by reversing the female, the surgical treatment decision was made. Caesarean section was performed in straight decubitus. The intervention saved the buffalo life and the postoperative evolution was favourable with the resumption of genital function after 45 days. Uterine torsion is a disorder common in the cow and less commonly encountered or reported in buffaloes. The rarity of the affection for buffaloes in Romania makes this case to be presented in more detail and to represent the purpose of this work.

Keywords: buffalo, dystocia, uterine torsion, caesarean section, ultrasonography

În România creșterea bivolițelor are un caracter tradițional și peste 75% din populația actuală de bubaline se află în Transilvania. Un interes actual în creșterea bivolițelor este dat de producția de lapte și proprietățile acestuia. În ultimul timp au apărut ferme și în alte zone ale României fără tradiție în creșterea bivolițelor. Reproducția la bivolițe este asemănătoare cu cea de la vacă, dar sunt și diferențe semnificative în ceea ce privește sezonabilitatea, manifestarea fazei estrale, gestația. Una dintre afecțiunile care afectează grav funcția de reproducție este torsiunea uterină (T.U). Torsiunea uterină este un accident din timpul gestației de natură topografică, ce produce modificări hemodinamice și lezionale incompatibile cu gestația și parturiția. Torsiunea uterină este o urgență medicală, deoarece viața fetei și a parturientei este pusă în pericol. Într-o fermă de bivolițe din N-E României (*Terra di Bufala*, Războieni, Iași) a fost diagnosticată o distocie de origine maternă reprezentată de o modificare topografică a uterului gestant, în sensul răsucirii lui în jurul propriului ax. T.U. diagnosticată a fost postcervicală, cu o răsucire de peste 180° în sens dreapta. După câteva încercări de detorsionare prin rostogolirea parturientei, a fost luată decizia tratamentului operator. Cezariana a fost efectuată în decubit costoabdominal drept. În urma intervenției a fost salvată viața parturientei și evoluția postoperatorie a fost favorabilă cu reluarea funcției genitale după 45 de zile. Torsiunea uterină este o afecțiune frecventă la vaci și mai puțin întâlnită sau raportată la bivolițe. Raritatea afecțiunii pentru bivoli la nivel național face ca acest caz să fie prezentat mai detaliat și să reprezinte scopul acestei lucrări.

Cuvinte cheie: bivoliță, distocie, torsiune uterină, cezariană, ecografie

A higher risk of uterine torsion in bovine during the late first stage or early second stage is of great concern for the life of the foetus, dam, and economics of livestock owner. Status of the pregnancy at the 250-

260 days in cattle and 295-300 days in buffalo in important prerequisites to avoid parturition complications such as dystocia due to uterine torsion (1, 6, 16). Obstetrical problems adversely affect the reproductive efficiency of bovines. Uterine torsion, the rotation of uterus on its longitudinal axis is observed frequently in dairy cattle and buffaloes confined for long periods mostly during parturition and less commonly during

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gestation (9, 17). Both maternal and foetal causes are attributed to the etiologic of uterine torsion. The entire length of the pregnant uterine horn rotates on its longitudinal axis to the left (anticlockwise) or right side (clockwise) along with the uterine body, cervix, and cranial vagina mostly (2, 15).

In severe cases of uterine torsion, there is a vascular compromise to the foetus resulting in the death of a foetus in the uterus. Since uterine torsion frequently occurs during parturition, there is twisting of the birth canal so delivery of foetuses cannot occur without external aids. Uterine torsion is a diagnostic dilemma for Veterinarians and a difficult obstetric procedure for less experienced persons. Prognosis and future fertility of the dam will be depending on the severity and duration of uterine torsion and methods of handling, subsequently reflected in the quality of all buffalo productions (4, 10, 18).

According to data recently published by some authors (7, 8, 14), UT may appear during pregnancy, at parturition, or post-partum is one of the complicated causes of maternal dystocia in buffaloes culminating in the death of both the foetus and the dam if not treated early. The degree of torsion is generally 90° to 180° although it can occur up to 360° or even more. Because of the rapidity of foetal death that ensues following torsion and the uterine adhesions with visceral organs that develop, uterine torsion must be considered an emergency (9, 15).

HISTORY AND CLINICAL OBSERVATIONS

A five years old pluriparous Romanian indigenous buffalo in her second lactation with full-term gestation was presented with complaints of intermittent abdominal straining for the last ten hours with no progression in foetal delivery.

Physical examination revealed signs of dullness, depression, arching back, horse stance posture, abdominal pain with a rectal temperature of 41°C. Conjunctiva was congested and hyperaemic. Trans-rectal examination revealed post-cervical right side uterine torsion. Per vaginal examination revealed right twisted vaginal folds confirming uterine torsion to the extent of more than 180 degrees.

TREATMENT

Based on clinical symptoms and trans-vaginal and trans-rectal examinations, the case was diagnosed as dystocia due to right side uterine torsion. Hence, it was decided to initiate treatment to detort it using modified Schaffer's method (2, 16). Female was cast on left side tying the front and rear leg separately and a 2.5 m long wooden plank was applied on the upper right flank to fix uterus and foetus, keeping an assistant on

the plank while turning the buffalo. Failing to detort the torsion upon three rolling, it was decided to go for C-section/laparo-hysterotomy.

Caesarean section is a common obstetrical operation undertaken by field Veterinarians which markedly affects the reproductive efficiency of animals. The place of election and incision was in the inferior-lateral-right area, above and parallel to the mammary vein, close to the mammary gland (Fig. 1).

The surgical site was aseptically prepared after shaving the site using a surgical solution (Betadine - 7.5% Povidone-iodine). Local anaesthesia was achieved by infiltration of 20 ml of 2% Procaine on the incision line. To prevent tenesmus and violent movement, posterior epidural anaesthesia using 40 ml of 2% Procaine was also given.

A horizontal line of incision about 35 cm long was put to incise the skin. Further, abdominal muscles were incised ligating all bleeding vessels, while peritoneum was incised using scissors. Uterus was brought to the operative site by holding it through the foetal legs. Uterus was sectioned avoiding placentoms on greater curvature and a dead foetus in the anterior presentation was removed. Foetal fluid and membranes were removed out. Uterus was cleaned using Normal saline solution while placing pessaries in the uterus. The uterine incision was sutured by the Cushing method followed by the Lambert method using Surgicryle absorbable suture material. Uterus was replaced in the abdominal cavity after thorough washing and detort. The skin incision was sutured by horizontal mattress sutures using non-absorbable silk material, with a drain held 12 h.

Post-operatively, the buffalo was given venous therapy with calcium, glucose, vitamin C, 10 ml Tribiveta (Vitamins B1, B6, and B12, IV), 15 ml Meloxicam IM (Melonexa), while Amoxicillin and Clavulanic acid 4.5 g (IV) was given pre-operatively. The antibiotics and analgesics were given for successive five. The buffalo had a favourable outcome (Fig. 1).

POSTOPERATIVE UTERINE EVOLUTION

After caesarean surgery and specific postoperative therapy, the evolution of the uterus was monitored in the dynamics by repeated ultrasound examinations. Thus, at 24 hours after caesarean section, the uterus no longer had signs of torsion through trans-rectal, trans-vaginal, and imaging explorations. By ultrasound examination, the uterine structure was observed in the involution (uterine wall and caruncles) (Fig. 2), foetal annexes being eliminated, and the female was in good clinical condition (Fig. 1).

At 35 days after caesarean section, the uterus was completely enveloped and was notified at the trans-rectal examination, induration areas at the place of the



Fig. 1. Buffalo-cow, after 24 hours of remedying the uterine torsion by caesarean section



Fig. 3. Uterus 35 days after caesarean section. We observed a hyperechogenic hardened and fibrous area produced by the suture of the uterus, lack of fluids in the lumen

incision and suture of the uterine wall. The ultrasound we observed a hyperechogenic hardened and fibrous area produced by the suture of the uterus. lack of fluids in the lumen (Fig. 3). At 45 days after uterine torsion, an evolutionary follicle was discovered on the left ovary, which explains the resumption of cyclic hormonal activity (Fig. 4). The ovary is normal in size (around 2 cm) much smaller than in the cow.

DISCUSSION

Uterine torsion has been reported mostly in dairy type buffaloes of India, Pakistan, and Egypt, however, reports of its occurrence in the swamp buffalo are not seen. In Europe and Romania, the incidence is minimal (17). The incidence is known to be higher in pluriparous buffaloes (7) with maximum frequency during se-

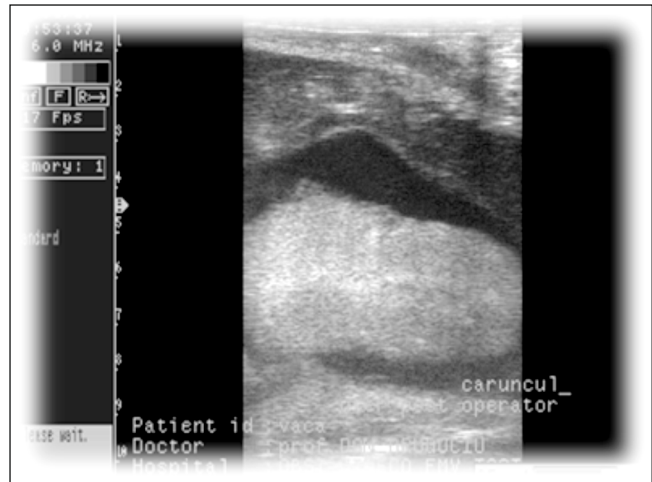


Fig. 2. Buffalo uterus 24 hours after caesarean section. Caruncles and uterine wall in involution, the intrauterine fluid in small quantity



Fig. 4. Ovary left of buffalo with a diameter of 1.35 cm, evolutionary follicle, 45 days after uterine torsion

cond and third calving (8). Although a seasonal incidence has been described in buffaloes, it appears to be because of higher seasonal calving. The usual age of buffaloes that suffer from uterine torsion is 4-12 years old (11, 13).

According to the literature, UT refers to rotation of the pregnant uterus on its longitudinal axis (13). May occur in all species of animals but is more prevalent as a cause of maternal dystocia in cattle. Depending on the direction of the torsion In *Bos indicus* cattle, 83% and in *Bubalus bubalis* buffaloes 95-98% torsions are towards the right side (11). In our case, the direction of the torsion was also to the right. About 66-96% torsions are post-cervical in which the twist extends caudal to the cervix and involves the anterior vagina in rotation similar to the case described by us. Both duration and the degree of torsion appear to influence calf

survivability, while dam survivability is dependent on the time elapsed between the onset of parturition and correction of torsion. Uterine torsion affected buffaloes are under acute stress as suggested by elevated plasma cortisol and suppressed ruminal, liver, and kidney functions (5).

The incidence of uterine torsion as well as the time of occurrence in bovines emphasizes its impact on dam's health and thus dairy herd profitability. Other conditions associated include ovarian vein rupture, rotation of urinary bladder, intestinal obstruction, haemoperitoneum, uterine perforation, and formation of adhesions of the uterus with surrounding viscera (16). The majority of uterine torsion cases comprise the cephalic area of the vagina leading to stenosis along with spiral twisting of its wall (8). On trans-rectal palpation, the orientation of broad ligaments is distinctly altered depending on either to the left or right side of torsion leading to respective broad ligament being pulled tightly across the uterus. As regards the degree of torsion, it is stated that: a degree of 45 to 90° it's very uncommon, 20% are 90-180°, 57% are 180-270° (as in our case) and 22% are 270-360°. With the increasing severity of torsion, successful attempts to roll the buffalo and deliver foetus decreases. Expulsion of a foetus is impossible unless the condition is corrected and circulatory disturbances can result in the death of both the foetus and cow if prompt diagnosis and treatment are not carried out (9, 16). Also, in the case presented by us, placental circulatory phenomena were affected, and the foetus died due to brain hypoxia. Different operative sites for a caesarean are suggested including the right or left flank, midline (on or parallel to *linea alba*), horizontal incision above *arcus cruralis*, or appropriate incision in the right, left lower flank (11) or an oblique ventro-lateral approach with the animal in right lateral recumbency. Many authors (3, 15) consider the left oblique ventro-lateral approach with the animal in right lateral recumbency as a better operative site, as it results in minimum postoperative complications. The anaesthesia usually required is mild sedation with local infiltration (2). Similar to the case presented by us.

CONCLUSION AND RECOMMENDATION

UT is a serious obstetrical problem for buffaloes, it is mostly of severe degree, clockwise, post cervical, and occurred before and at term in approximately equal percentages, resulting in high foetal mortalities. Foetal size and fluids seem to be factors for the degree and site of torsion, while the relationship between the rumen and foetus might determine the direction of torsion.

Since the duration of torsion is an important factor in foetal and maternal mortalities, all cases of general medical problems should be examined at advanced pregnancy to exclude the UT in buffaloes. The most objective method of intervention is caesarean surgery.

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