

Presentation on
UTERINE TORSION
Veterinary Obstetrics (VGO- 421)

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MODULE-5: UTERINE TORSION

LEARNING OBJECTIVES



After going through this module on

Diseases and Accidents During Gestation: Part-III

* Uterine Torsion in Cattle and Goat

The learner will be able to:

1. Clearly define uterine torsion.
2. Be familiar with the clinical signs and diagnosis.
3. Explain the different methods of correction.

DEFINITION

- Uterine torsion is commonly referred to as the twisting or revolving of the gravid uterus on its longitudinal axis.

INCIDENCE

- European study: 3-4 %
- North American study: 3-7 %
- British study: 5-6 %

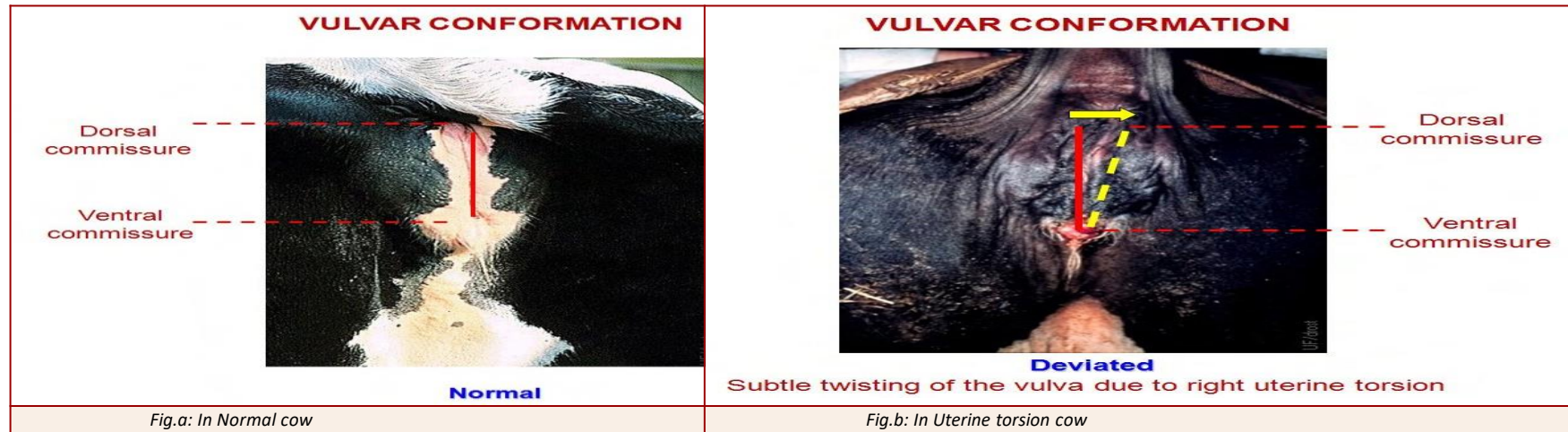
- Reported in all domestic species
- Most commonly prevalent as a cause of dystocia in cattle and usually develops during the late first stage or early second stage of labour
- Most cases involve only the uterus but some may be complicated by incarceration of other organs eg. Jejunum and bladder
- Common in cows and buffaloes; relatively high in surti buffaloes
- Occasionally in ewe and goats; rare in mare, bitch, cat and sow
- Occurs in both uniparous and multiparous animals
- In uniparous animals, both gravid and nongravid horns are involved in torsion because of the strong intercornual ligament and the distension of the uterine horns and body with placenta and fluid
- In multiparous animals, only a portion of one uterine horn containing usually only one fetus may be twisted or rotated (at the point of its junction with the body, the horn entire rotates)
- Common in pluriparous (large abdominal cavity together with decreased uterine tone and mesometrial stretching) than in primiparous animals (Frazer, et al., 1996).

ETIOLOGY

- Predisposing causes
- Environmental causes, and
- Exciting causes.

CLINICAL SIGNS

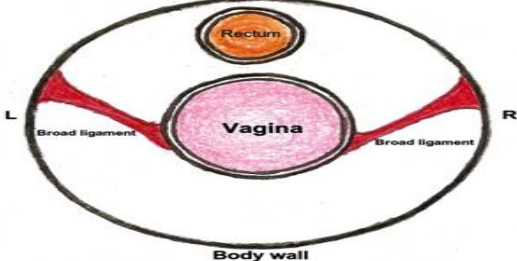
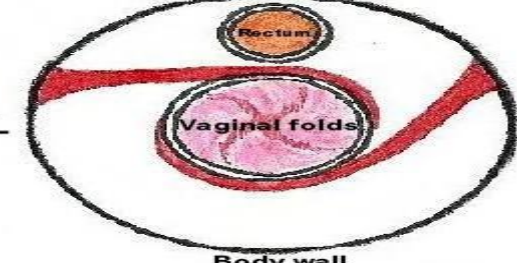
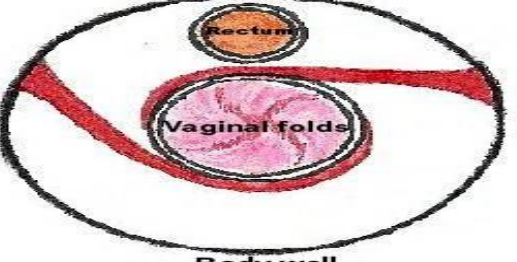
- Torsion with degree of 45-90 lacks clinical symptoms; if 180° or more definite clinical symptoms are noticed
 - Colicky pain
 - Teeth grinding
 - Restless
 - Anorexia
 - Lack of rumination
 - Rapid pulse
 - Tachycardia
 - Treading and tail switching, and
 - Displacement of dorsal commissure (Fig.a and b)
 - Tucked up udder
 - Vulval edema, and
 - Slight depression of the lumbo-sacral vertebrae (Fig.c and d).



DIAGNOSIS

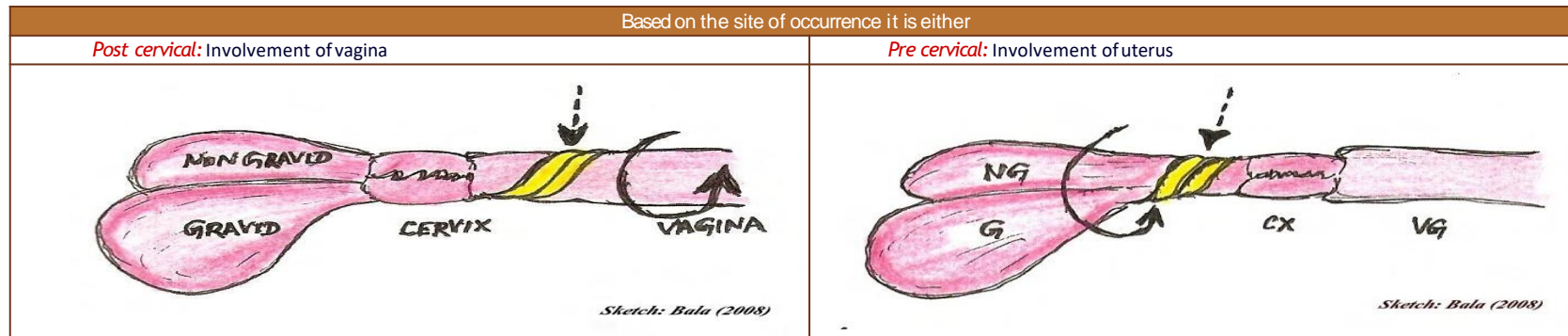
- Pregnant animals which exhibit the clinical signs must be subjected to both per rectal and per vaginum examinations to arrive at a confirmative diagnosis for
 - Direction of torsion
 - Degree of torsion, and
 - Position of torsion.

DIRECTION OF UTERINE TORSION

	<ul style="list-style-type: none"> • <i>Normal Position of Broad ligaments and vagina.</i>
	<ul style="list-style-type: none"> • <i>Clockwise (Right side torsion).</i> • <i>On rectal examination:</i> The ligament and middle uterine artery (MUA) on the right side is stretched and pulled vertically downward under the uterus, whereas the ligament on the left side is stretched and pulled tightly across the top of the uterine body.
	<ul style="list-style-type: none"> • <i>Counter clockwise (Left side torsion).</i> • <i>On rectal examination:</i> The ligament and MUA on the left side is stretched and pulled vertically downward under the uterus, whereas the ligament on the right side is stretched and pulled tightly across the top of the uterine body.

- In less than 90°: Hand could be passed to palpate the external Os of the cervix with some resistance.
- In 90°-180°: One or two fingers can be passed.
- In more than 360°: Abrupt stenosis.
- **In Pre cervical uterine torsion:** Cervix is palpable and fetus is not palpable.

POSITION OF UTERINE TORSION



DIFFERENTIAL DIAGNOSIS

- Uterine torsion should be differentiated from conditions such as
 - Indigestion
 - Pyelonephritis
 - Traumatic gastritis, and
 - Internal intussusceptions.

Vaginal examination

- Abrupt stenosis of the vagina with the vaginal wall spirally twisted and external Os of the cervix not palpable depending on the degree of torsion.

DEGREE OF UTERINE TORSION

- The degree of uterine torsion may be 45°, 90°, 180°, 360°, and 540°

Per Vaginum examination

- *In Post cervical uterine torsion*: Cervix is not palpable with abrupt closing of the vagina.

PROGNOSIS

- Prognosis of uterine torsion depends on the
 - Degree of torsion
 - Severity of torsion, and
 - Length of time of existence of torsion.

Prognosis

- *In cattle*
 - Good: If the condition is diagnosed early, before the occurrence of fetal emphysema, secondary contraction of the cervix, uterine rupture and peritonitis.

- Poor: In torsion of uterus with extensive rupture of uterus, hemorrhage, or severe uterine edema and gangrene secondary to thrombi in the large uterine vessels.
- In other species
 - Guarded to poor: Because an early diagnosis is difficult or impossible to make without an exploratory laparotomy operation.

Prognosis with respect to life of fetus

- Poor. In most cases, it is presented too late with the fetus having reduced oxygen supply leading to death due to asphyxiation.
- In most cases, unrelieved uterine torsion result in death of the dam.
- In rare cases, the fetus remains in the uterus and macerates, with extensive adhesions developing around the uterus; the condition may not be diagnosed for several months.

Mortality

- Mortality in mares may be equal to or probably greater than that in cattle.

TREATMENT APPROACHES

- Various methods have been described for relieving uterine torsion in bovines (Sloss and Dufty, 1980).
- The choice of method depends on:
 - The degree of uterine torsion
 - Stage of gestation
 - The condition of the dam, fetus and the uterus.

Different approaches

- Manual detorsion per vaginum
- Manual detorsion per vaginum in combination with external pressure on the abdomen
- Stimulation of vigorous fetal movements
- Abdominal ballotment
- Suspension of the cows body
- Detorsion by simple rotation
- Schaffer's method (Modified rolling technique)
- Intra abdominal manipulation / Flank laparotomy
- Cesarean section, and
- Medical termination of pregnancy.

DETORSION BY SIMPLE ROTATION

- Oldest and simplest method

- Requires assistance of 3-6 men depending on the size of the animal
- Rolling should be done out- of – doors, on a sand pit (Fig.a)



Fig.a : Uterine correction in ow - Rolling on a sand pit

- If the animal is large and vigorous – Give tranquilizers – Intra venous or intra muscular as a sedative 20 minutes prior to rolling.

OBJECTIVE OF SIMPLE ROLLING

- Rotate the body of the animal in the same direction as the torsion of the uterus, rapidly enough to rotate the body around or faster than the inert uterus and fetus.
- The rapidly rotating body of the animal thereby overtakes the more slowly rotating inert gravid uterus.

TECHNIQUE OF SIMPLE ROLLING

- Assess the side of uterine torsion and cast the animal on the same side as the direction of torsion
- Cast the animal adopting squeeze method
- The two hind legs of the cow are fastened together and two front legs are tied together
- The animals head is held extended
- The front and hind feet should not be tied together, because this compresses the abdominal cavity and tends to make the gravid uterus rotate with the animal
- Animal should be rapidly rotated in the same direction of uterine torsion, by strong co-ordinated pulling
- After the animal has been rapidly rolled 180 degrees, her body must then be either rolled back slowly to the original position or be pushed, usually slowly, over her legs and sternum so that she is once more in lateral recumbency on the same side as the direction of the torsion, ready to be rapidly turned over again.

CORRECTION OF UTERINE TORSION
(Right side - Post Cervical - Less than 90 degree) IN COW USING SIMPLE ROTATION



Cow is cast on the same direction of torsion and positioned in sternal recumbency.



Cow is rapidly rotated on the same direction of torsion.



After completion of one rapid rotation.

CLINICAL EVALUATION

- Some clinicians advise the operator to keep the hand in the vagina or even to grasp the fetus, in order to hold the gravid uterus in place. This is a very awkward position to assume or maintain as the animal is being rolled and is unnecessary unless the operator is uncertain as to the direction in which the uterus is rotated.
- Place the hand in the cranial portion of the vagina, if rolling is in wrong direction, then spiral folds in the vagina will tighten.
- After each 2 or 3 rapid rotations of the animal's body, the birth canal should be examined to determine if uterine torsion is corrected.
- If so, the spiral folds and stenosis disappear, if cervix is dilated, the fetus may be palpated with ease.
- Occasionally, there may be gush of fetal fluids from the uterus as torsion is relieved.
- If uterine torsion is not relieved, repeat the rolling procedure 4-5 or more times before failure is admitted and another technique is attempted.
- Rolling might result in rupture of the uterus, especially when the uterus is edematous.

SCHAFFER'S METHOD (Modified rolling technique)

- Described by Arthur (1966).
- Requires less assistance.

OBJECTIVE OF ROLLING

- The animal is rolled slowly instead of rapidly.
- The uterus and its contents are held in place by the plank and the weight of man standing on it while the animal is rotated around them.

TECHNIQUE OF ROLLING

- Cast the animal on the same side as the direction of uterine torsion
- Tie in a manner similar to that described in rolling technique
- Place the plank (9–12 feet length and 8–12 inches wide) on the animal's abdomen with the lower end of the plank on the ground (Fig.a).



Correction of uterine torsion (right side) in cow by Schaffer's method. Note the placement of plank

- An assistant stands on the plank and the animal is slowly rolled in the same direction as the torsion by pulling on the ropes around the front and hind feet (Fig.b).



Correction of uterine torsion (right side) in cow by Schaffer's method. Note an assistant standing on the plank

- The plank creates pressure first on the upper abdominal wall, then the floor and finally the opposite side of the abdomen resulting in a correction of the uterine torsion that can be determined by examining the genital tract
- If there is any question concerning the direction of the uterine torsion, the operator, by placing his hand in the canal, can readily determine whether the torsion is being relieved or not as the animal is slowly rolled
- As in the initial rolling technique, if uterine torsion is not relieved the first time the animal is rolled, the procedure may be repeated several times

- In most cases, the uterine torsion is corrected on the first rolling.

MEDICAL TERMINATION OF PREGNANCY

- Medical termination of pregnancy may be attempted to mimic the first stage of labour with prostaglandin expecting spontaneous correction due to uterine contractions and fetal movements.
- Kathiresan et.al., (2001) have concluded that fresh cases of pre-cervical uterine torsion (<math><180^\circ</math>) in cows with live fetus and no adhesions can be corrected successfully by medical termination of pregnancy.

SELECTED REFERENCE

- D.Kathiresan, S.Balasubramanian, Cecilia Joseph, T. Gnansubramanian, C. Veerapandian and S.R.Pattabiraman (2001). Medical management of pre-cervical uterine torsion in a heifer. *Indian Vet.J., Jan: 78; 55-56.*