

Diseases and accidents of gestation (Problems of Pregnancy)

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Problems of pregnancy (COMPLICATIONS OF GESTATION)

FETAL	Fetal Death	Before day 45 EED Abortion Mummification Maceration
	Fetal compromise	Monsters Dropsical conditions: Ascites, Anasarca, Hydrocephalus

MATERNAL COMPLICATIONS

Dropsy of the placental membranes Hydroallantois, Hydroamnion
Abdominal, inguinal, umbilical hernias
Rupture of prepubic tendon
Ectopic pregnancy
Rupture of vagina
Cervico-vaginal prolapse
Uterine torsion
Metabolic disorders
Prolonged gestation
Hydrometra
Prolapse



FETAL PROBLEMS EED & ABORTION



Abortion: Expulsion of a fetus that is incapable of independent life before completion of gestation

- Infectious

- Hormonal

- Chemicals & Drugs

- Physical

- Genetic

Fetal mummification: Fetal death without CL Lysis during last third of gestation



Haematic (cattle, buffalo) → blood because of cotyledon involution

Papyraceous (dogs, cats, swine) paper like

Etiology: Campylobacter, BVD, Leptospira, Hog cholera & Aujeszky's disease in pigs

Torsion of umbilical cord

In pigs **Berkshire breed** is known to have higher incidence of mummified fetuses

Clinical findings anestrus or shrinkage of udder in primipara

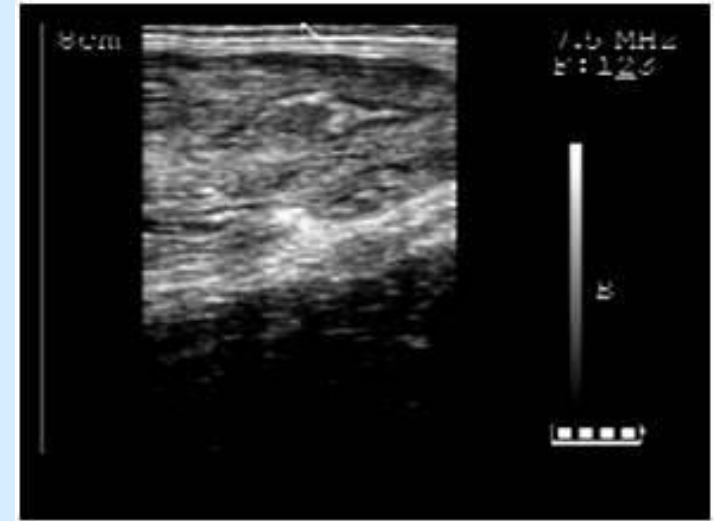
The cervix is closed and fetus is sterile

One or more mummified fetus with one or more live fetuses is seen in pigs and occasionally in dogs and cats or goats

In cattle mummified fetus with normal calf is called *static fetal cadaver*.

Diagnosis Rectal palpation of a thick wall and mummy like fetus with empty eye sockets

Ultrasonography reveals thick uterine walls, and hyperechoic bones without fluid.



Therapy: PG, manual removal after PG, laparo-hysterotomy

Beta-2 adrenergic such as isoxsuprine may sometimes be helpful in long standing cases

Colpotomy and hysterotomy in low value animals.

- Future fertility: Fair to good
- If fetus embedded in uterine wall fertility is questionable
- In goat mummification of one fetus subsequent to delivery of one fetus has been recorded
- In pigs mummification occurs between 40-90 days
- Viral Diseases like PRRS



Fetal maceration common in cattle and buffalo

Failure of abortion of a dead fetus (after fetal bones formation :4 months) followed by disintegration with a partially open cervix. Fetal death due to many reasons.

Clinical signs of discharge of pus with fetal bones

Constant straining

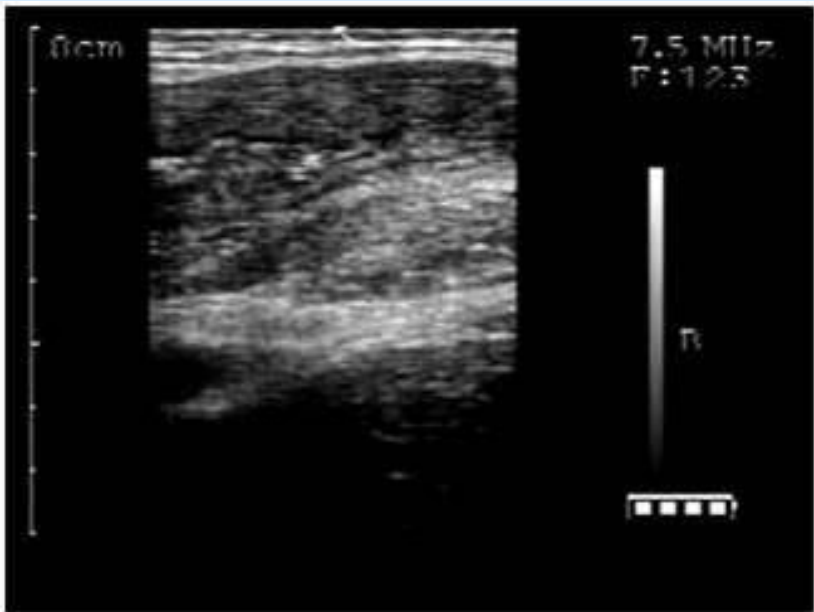
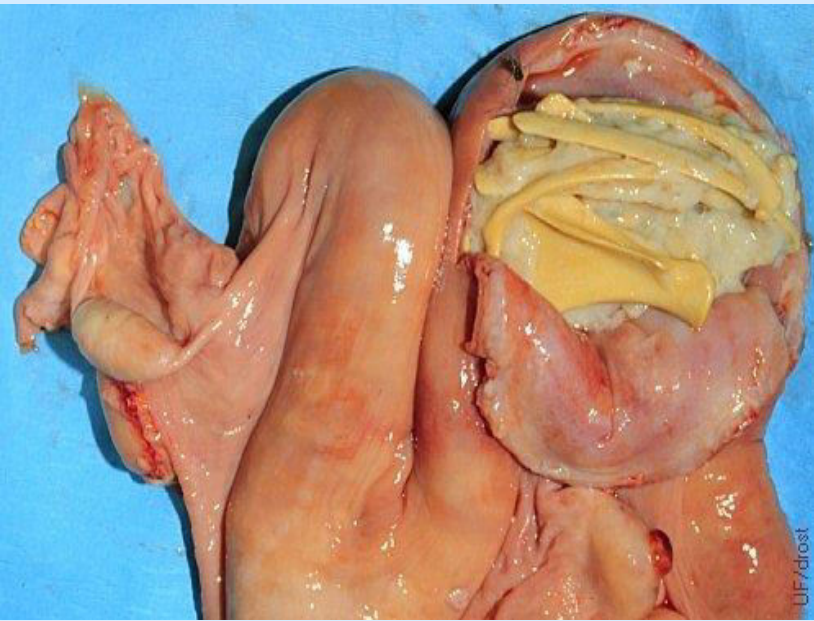
Diagnosis: finding of a piece of bone lodged in cervix or vagina, rectal finding of thick walled uterus with crepitating feel, discharge of bones and pus. Sonographic finding of hyperechoic bone in echogenic pus. Rarely bone pieces may pierce the uterine wall and enter the abdominal cavity.

Therapy: PG and manual removal of bone pieces

Surgical removal

Supportive therapy

Future fertility is poor



Fetal dropsical conditions

- Dropsy means swelling of soft tissues due to excessive accumulation of water
- Fetal ascites, fetal anasarca, hydrocephalus, hydrothorax
- **Fetal ascites** *Ascites*: < Greek askos; "a bag of wine"
- Accumulation of excess fluid in the abdominal cavity
- Etiology: brucellosis, mesotheliomas of fetal abdomen
- Obstruction of lymphatics or diminished urinary excretion
- Results in difficult birth

Hydrops fetalis (HF) may be due to any factor/s that cause passive venous congestion i.e. intra-peritoneal or intra-thoracic neoplasia (leiomyomas, teratomas hepatoblastomas), liver cirrhosis or other liver anomalies, cardiac anomalies, pulmonic valve stenosis or dysplasia of the lungs themselves. Some of these anomalies are heritable in several breeds of cattle.

Degenerative changes in liver and polycystic kidneys



Fetal anasarca

- *Anasarca*: < ana : "throughout" & sarca: "new flesh"
- Fetus with generalized edema all over the body
- Observed in cattle, sheep and goat
- In Ayrshire cattle this is common and caused by a autosomal recessive gene.
- Delivered dead or may abort
- May result in dystocia

Hydrocephalus

- (1) Internal hydrocephalus, a collection of fluid in the cerebral ventricles
- (2) external hydrocephalus, a collection of fluid outside the brain substance.
- Bovine hydrocephalus occurs widely in cattle and has been reported in virtually all major beef and dairy breeds, including Hereford, Shorthorn, Ayrshire, Holstein-Friesian, Jersey, and Angus.

Neuropathic Hydrocephalus (NH) is a lethal genetic condition caused by a recessive mutation that affects **Angus and Angus-influenced** cattle. Affected calves are born dead with an extremely large cranium with little or no brain material or spinal cord.

In mares also inheritance was proven to some extent

- Bovine fetal infection with bovine virus diarrhea virus (BVDV), Schmallenberg virus (SBV), blue tongue virus (BTV), Akabane virus (AKAV), or Aino virus (AV), are associated with a range of congenital malformations of which the most prominent develop in the CNS
- Hydrocephalic fetuses may cause dystocia and
- sometimes born live while most die shortly
- after birth



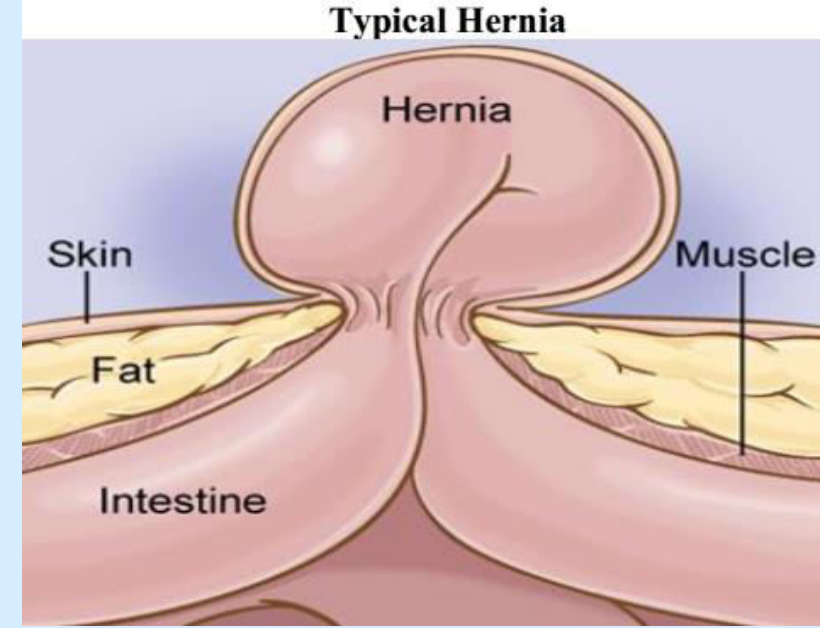




MATERNAL COMPLICATIONS OF GESTATION

Hernia

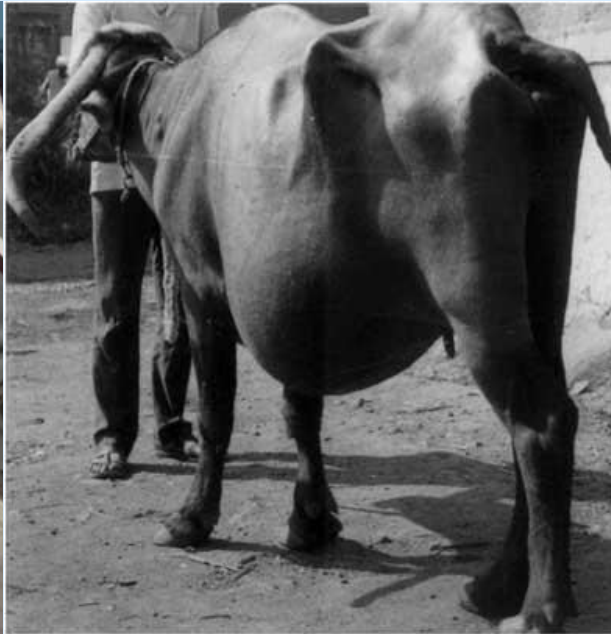
- Hernia is a bulge of skin that contain material of a body cavity passing through a weak spot of the body wall. This possibly will occur by accident or due to normal anatomical opening, which does not completely fulfill its function.



Abdominal hernias

- Hernias may be due to trauma arising due to fights, horn butting or weak musculature that ruptures spontaneously
- Abdominal hernias cause difficulty in movement of the animal and also result in difficult births due to poor abdominal contractions
- Hernias should be supported before delivery and corrected surgically post partum

Ventral hernia



Umbilical hernias

- Umbilical hernias are hereditary but usually small
- Cows with umbilical hernias should not be bred
- They have been recorded in rams

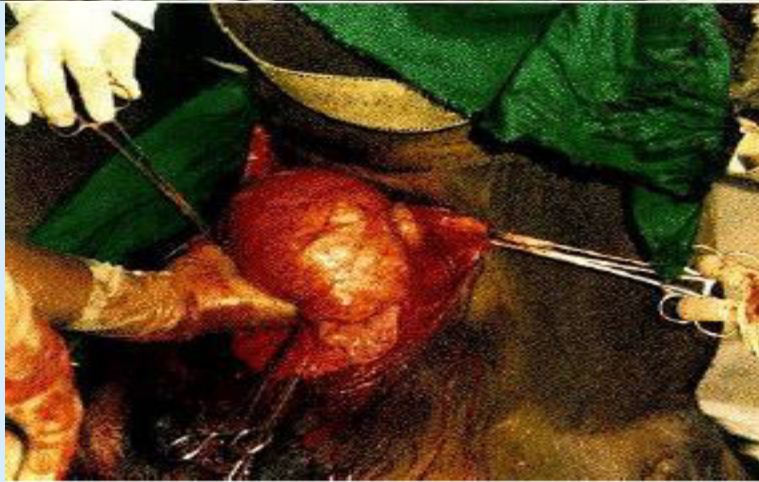
Inguinal hernias are hereditary or acquired and are common in the bitch but rare in other animals



Inguinal and Perineal hernias in dogs

- Inguinal hernia in dogs results from a defect in the inguinal ring through which abdominal contents protrude. Inguinal hernia in adult dogs usually occurs in middle-aged, intact bitches
- Perineal hernia results from failure of the pelvic diaphragm to impede the passage of abdominal organs into the pelvic cavity and perineum. The pelvic diaphragm is formed by the coccygeal and levator ani muscles, together with their external and internal fascial coverings, and supports the rectal wall. Perineal hernia is relatively common in middle-aged and older, intact male dogs.

Perineal and inguinal hernia



Dropsy of the placental membranes

- Hydroallantois
- Hydroamnion

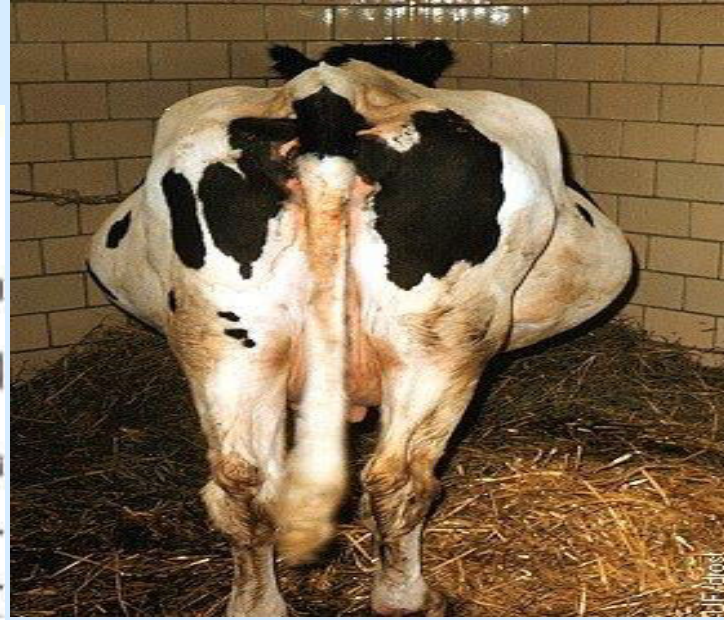
Hydroamnion

- Hydramnios is a dropsical condition of fetal sac in which there is excessive accumulation of fluid in amniotic sac which is associated with genetic (recessive autosomal genes) or congenitally defective fetus.

- Normally, amniotic fluid is secreted by the fetal salivary glands, lungs, skin and associated structures, moreover from mid gestation onwards amniotic fluid becomes viscous and syrupy in consistency because watery fluid is swallowed into large bronchi and finally absorbed through fetal intestine. However, impaired deglutition or renal malfunction leads to accumulation of amniotic fluid as much as 19 to 114 litres against its normal volume i.e. 3.8 to 7.6 litres.

Fetal defects such as cleft palate, pituitary hypoplasia in Guernsey cattle or bull dog calves in Dexter cattle result in defective calves with hydramnion

- Clinical signs are not specific except the slightly enlarged abdomen and discharge of large quantity of amniotic fluid
- Transrectal palpation reveals enlarged uterus with normal placentomes. Ultrasonographic findings are non specific.
- Therapy: Medical termination of pregnancy should be considered, but care should be taken for fluid replacements.



Hydroallantois

- **Hydroallantois** is one of the gestational disorder in which sudden increase in allantoic fluid occurs in allantoic cavity due to foetal membrane pathology leading to bilateral enlargement of abdomen.

- The abnormality is probably caused because of structural or functional changes in the allantois chorion including its vessels, and transudation and collection of fluid resembling plasma. The condition usually affects both beef and dairy cows of 3 years or more of age. Fetuses may be slightly smaller and show some edema.

- Placental dysfunction is involved in hydroallantois.
- Fluid accumulation increases rapidly over a period of 5 to 20 days and is recognizable clinically by bilateral distension of the uterus and abdomen after mid gestation.
- Affected animals have an apple shaped abdomen
- Animals are distressed, anorectic, may have difficulty in getting up and sometimes respiratory distress and constipation.

On transrectal examination the uterus is enlarged with small cotyledons and fetus is not palpable.

- Ultrasonography reveals only fluid and small cotyledons

- Diagnosis: Rapid onset and transrectal findings
- Therapy: Consider pregnancy termination if animal is in severe distress using PG and corticosteroids plus slow IV oxytocin
- Sufficient fluid replacement is an essence.
- Cesarean section with slow withdrawal of fluid
- Prognosis is poor

- **Hydroallantois in mare**
- Rare condition that develops after 7 months of gestation
- Associated with other abnormalities of pregnancy - fetal deformities Hydrocephalus, multiple pregnancies Twinning, placentitis and placental insufficiency.
- Abdominal distension with signs of colic
- Mare may have respiratory difficulty and difficulty in walking
- Diagnosis based on rapid onset and transrectal examination
- Manual dilation with puncture of chorioallantois to deliver the foal

Dropsy of Placental membranes

	Hydrops amnion	Hydrops allantois
Incidence	n	15n
Onset	Insidious (5-6 months of gestation)	Rapid (7-8 months of gestation)
Calf	Abnormal (Cleft palate)	Normal
Placenta	Normal	Abnormal diseased
Fluid	Mucoid (80 litres)	Watery (80-200 litres) Normal fluid 8-15 litres
Prognosis	Guarded	Poor
Abdomen	Pear shape	Apple shape





Rupture of prepubic tendon (Desmorrhexis)

Common in heavy idle mares

Less common in cows because of presence of sub-pubic tendon

Etiology: Trauma, overweight, jumps.

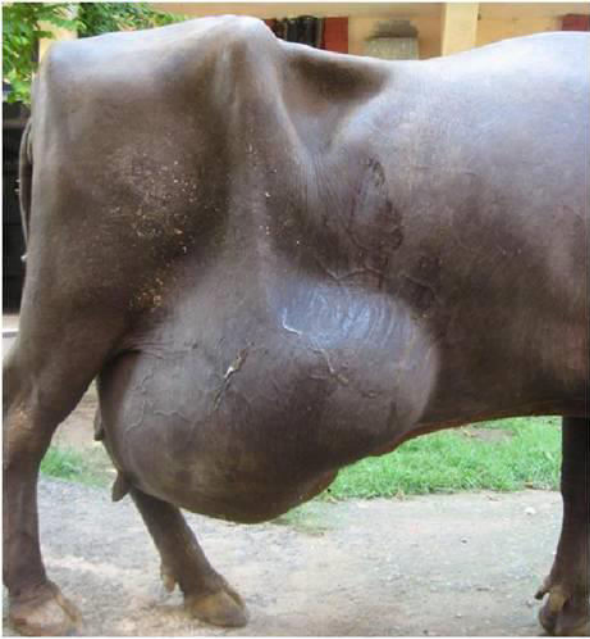
Common in late pregnancy

Clinical signs Pain, colic, severe ventral edema at abdomen, increased respiration, reluctance to lie down, in severe cases death.

Prognosis: Poor

Therapy: Canvas straps are suggested till completion of gestation







Ectopic pregnancy

Primary or secondary

Tubal ectopic pregnancy in humans in this the feto-placental unit forms outside the uterus. True ectopic pregnancy is not possible in animals

Because:

1. Presence of embryo in uterus not required in woman for progesterone production
2. Human embryo can survive both in oviduct and uterus
3. Placenta is hemochorial and implantation is invasive in humans

Some cases are reported in cats however, true extra-uterine pregnancy is not possible in cats.



Hemorrhagic discharge in a pregnant mare

- Bloody vaginal discharge in the pregnant mare without outward signs of discomfort or illness is not an uncommon complaint. The most common cause is haemorrhage from **vaginal varicose veins**. The extent of bleeding is variable and may be observed when the mare squats to urinate. In some cases, a large pool of fresh blood and blood clots may be observed when the mare is recumbent.

- Diagnosis is best performed by vaginal examination, using a Polanski speculum.
- The vaginal varicosities are more frequent in older, large-frame mares. Application of astringent creams may help in some cases; however, these products have not been thoroughly evaluated in pregnant mares. Laser cautery is an option if the bleeding becomes more frequent and abundant.
- If the mare presents with colic and vaginal bleeding, abortion or foaling must be ruled out. If there is no evidence of cervical or vaginal bleeding, the urinary bladder should be examined by endoscopy.

Mucopurulent Discharge in mares

- Ascending placentitis should be suspected in pregnant mares with mucopurulent vaginal discharge, particularly if there are other predisposing factors (ie, advanced age, loss of body condition, abnormal perineal conformation, etc). Mares with placentitis will often show premature mammary development and lactation.
- The degree of placental compromise should be evaluated by transrectal ultrasonography.

- Management of placentitis in the mare can be done by the administration of anti-inflammatory drugs, antimicrobial therapy, tocolytics, scavengers of inflammatory products (ie, pentoxifylline), and improvement of blood flow and fetal oxygenation.
Oral administration of pentoxifylline at the dose rate of 17-20 mg/Kg twice daily has been suggested.

Vaginal discharges in cows

- Bloody vaginal discharge in cows is frequently a sign of an impending abortion however, it may arise due to vaginal injury. Clinicians often administer progesterone to such cows which might be dangerous if the process of abortion has already started and the cervix is open.
- Severe vulvar edema can be reduced to some extent by oral administration of tamoxifen citrate 50 mg BD for 3-5 days.
- Mucopurulent vaginal discharge is often indicative of fetal death and maceration however, some non-pregnant cows with pyometra or pregnant cows with vaginitis may show a muco-purulent discharge and even attract bulls and therapy be done carefully.

Metabolic disorders of pregnancy

Pregnancy toxemia of sheep and goat

Pregnancy toxemia is a metabolic disorder of heavily pregnant animals characterized by hypoglycemia and ketonuria



Clinical signs Dullness, inability to stand,
labored breathing, head pressing, low body
temp

Diagnosis: Rotheras test, presence of twins

Therapy: Dextrose consider pregnancy
termination

Hypomagnesemia/ hypocalcaemia of cows/
buffaloes

Hypocalcaemia is rare in pregnant cows
and buffaloes

Subnormal temperature, recumbency

Calcium therapy is suggested

Eclampsia is uncommon

In pregnant bitches

Hyperlipidaemia in pony and donkey mares

Disease of overweight donkeys and Shetland ponies during late gestation

Etiology: sudden energy deficiency results in fat deposition in liver, kidneys & organ failure

Signs: Dullness, diarrhea, muscle twitches, weight loss, ventral edema, recumbency coma and death.

Prognosis: guarded

Therapy: oral glucose + insulin

Prolonged gestation:

Mummification

BVD (cows) Border disease and Blue tongue (sheep)

Hydrocephalus

Single pup syndrome in dogs

Feeding of toxic feeds

Fescue toxicosis in mares- Oral feeding of domperidone
1.1 mg/Kg daily 10-15 days before foaling date has
been suggested

Thank You

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