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STAGES OF PARTURITION

1. Although the act of parturition is continuous but for purposes of definition it is usually divided into three stages or phases, viz. First stage, second stage and third stage.
2. First stage is also known by name of preparatory stage.
3. Second stage is called stage of expulsion of foetus.
4. Third stage is called stage of expulsion of foetal membranes and involution of uterus.

FIRST STAGE OR PREPARATORY STAGE

1. This stage is characterized by the active contraction of both the longitudinal and circular muscle fibres of the uterine wall, and the dilation of the cervix.
 2. Bovine uterine muscle contractions were due to the removal of progesterone block and the increased conduction excitability and synchronous action caused by higher levels of estrogens.
 3. Oxytocin is seldom released from hypophysis prior to the second stage of labor so it is not essential for the induction of parturition.
 4. Uterine peristalsis starting in the apices of the uterine horns was initiated by circular muscle contractions synchronized by propagation of the action impulse through the longitudinal muscles.
 5. Uterine contractions performed 90 percent of the work of the parturition and these contractions were directly proportional to foetal resistance.
 6. There is a greatly increased activity of the uterine musculature the last 1 to 2 hours before birth.
 7. The average parturition amplitude of uterine muscle contraction was 80 cm of H₂O.
 8. Uterine contractions force the foetal membranes and other fluids against and into the relaxed cervix.
 9. External os of the bovine cervix relaxes sufficiently a week or so before calving to accommodate 2 to 4 fingers. The cervix of heifers remained tightly closed until the day before parturition.
 10. In the first stage of parturition the cervix was not dilated by the allantois chorion but was pulled open by the contraction of the longitudinal uterine muscles.
 11. For most of the first stage the cervix easily contained the allantois chorion that projected into it.
 12. True dilation of the internal os started 2 to 4 hours after the external os had reached a diameter of 3 to 6 inches and by 6 to 12 hours the whole cervix was 6 to 7 inches wide and the cervix and vagina were a continuous canal filled with the distended allantois- chorion.
 13. During the first stage in the cow, uterine contractions occur about every 10 to 15 minutes and last 15 to 30 seconds.
 14. As the stage advances they increase in frequency, strength and duration until contractions occur about every 3 to 5 minutes.
- Question: How does the contraction of uterus differ between unipara and multipara during first and second stage of parturition?
15. In Uniparous animals the contractions start at the apex of the cornua while the caudal part does not contract but rather dilates from the pressure of the foetus and fluids forced caudally.

16. In this stage in the mare and probably the bitch the fetus is rotating from its dorso-pubic or dorsolateral position into the dorso-sacral position.
17. As it passes through the cervix into the birth canal the legs and head are extended.
18. In the bovine and ovine foetus no rotation is necessary, as it is already in a dorso-sacral position.
19. By the end of this stage the cervix is completely dilated.
20. Multiparous animals have a more complex mechanism of uterine contractions.
21. The contractions of the uterus occur just cephalad to the most caudad fetus forcing it through the cervix into the birth canal, while the rest of the uterus remains quiescent.
22. Then the same process is repeated for the most caudad foetus in the other horn, or the foetus immediately cranial to the one just expelled.
23. This may help explain why in the second stage two foetuses may be born nearly simultaneously. The longitudinal fibres of the parts of the horn just emptied contract, but the circular fibres remain relaxed, so that the next foetus may pass through.
24. This shortens the uterus as parturition progresses, so that each foetus in turn is brought back nearly to the cervix.
25. This is important in multipara so that the foetuses at the apex of the uterine horn do not have to traverse a long uterine horn after the placenta has been detached or the naval cord ruptured.

Symptoms in a mare exhibit during first stage of parturition:

1. During the first stage of parturition which lasts for about 1 to 4 hours, straining or labor is not exhibited in the mare,
2. The symptoms of:
 - i. Restlessness,
 - ii. anorexia,
 - iii. colicky pains,
 - iv. slight sweating behind the elbows and flanks,
 - v. lying down and getting up,
 - vi. tail switching,
 - vii. elevating of tail,
 - viii. repeated periodic sudden complete arrest of motion even chewing,
 - ix. repeated stretching as if to urinate,
 - x. frequent small bowel evacuations,
 - xi. looking at the flank are characteristic of abdominal discomfort during latter part of first stage of parturition
 - xii. Usually the pulse and respiratory rates are accelerated,
 - xiii. During the later part of the first stage just prior to parturition the mare may roll back and forth in an apparent effort to rotate the foetus into a dorso-sacral position or
 - xiv. Crouch, go down on knees, rise again and be highly restless.
 - xv. The body temperature may become slightly lower than normal during this period.

Symptoms in cows and heifers and ewe during first stage of parturition:

1. In the cow and ewe the symptoms of abdominal pain or discomfort may not be evident especially in pluriparous animals.

2. In heifers, colicky symptoms and restlessness usually are observed and may last for 1 to 24 hours.
3. The cow and ewe will show anorexia, stand with an arched back and raised tail, strain occasionally and ruminate irregularly.
4. The cow may lie down and get up frequently.
5. Pulse and respiration rates increase.
6. Lowering of the body temperature is inconstant.

Symptoms in bitch, sow and cat during first stage of parturition:

1. In the bitch, sow and cat nervousness, anorexia, and an increase in pulse and respiratory rates usually occur.
2. In dogs this may result in panting.
3. Occasionally vomiting is observed.
4. This stage usually lasts for about 2 to 12 hours.
5. In the dog there is usually a sudden drop of 1 to 2 degree F in body temperature below 100 degree F just before or during this phase of parturition.

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1. The first stage is apparent for longer periods in primiparous than pluriparous animals. During this stage in some animals of all species, milk or colostrum may leak or run from the udder.
2. Usually toward the end of this first stage the allantois chorion ruptures as it is forced through the dilated cervix into the vagina.
3. After the rupture of allantois chorion, the amnion pushes into and through the cervix, and the fetus-because of the shortening and contracting of the uterus and dilation of the cervix passes into the cervix and vagina.
4. Once a portion of the foetus enters the pelvis, reflex stimuli result in straining or labour. This is produced by contractions of the abdominal muscle and diaphragm together with a closing of the glottis, and the second stage of parturition begins.