

Causes of Dystocia in farm and pet animals

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- Dystocia Difficult birth
- Eutocia: Safe physiological normal parturition or delivery

DISORDERS DURING PARTURITION

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graph TD; A[DISORDERS DURING PARTURITION] --> B["• DYSTOCIA :-  
difficult birth"]; A --> C[PROLONGED GESTATION]; A --> D["RUPTURE OF BIRTH CANAL :-  
* Occurs because of extra force &/or use of sharp instruments  
* Most common rupture is cervical"];
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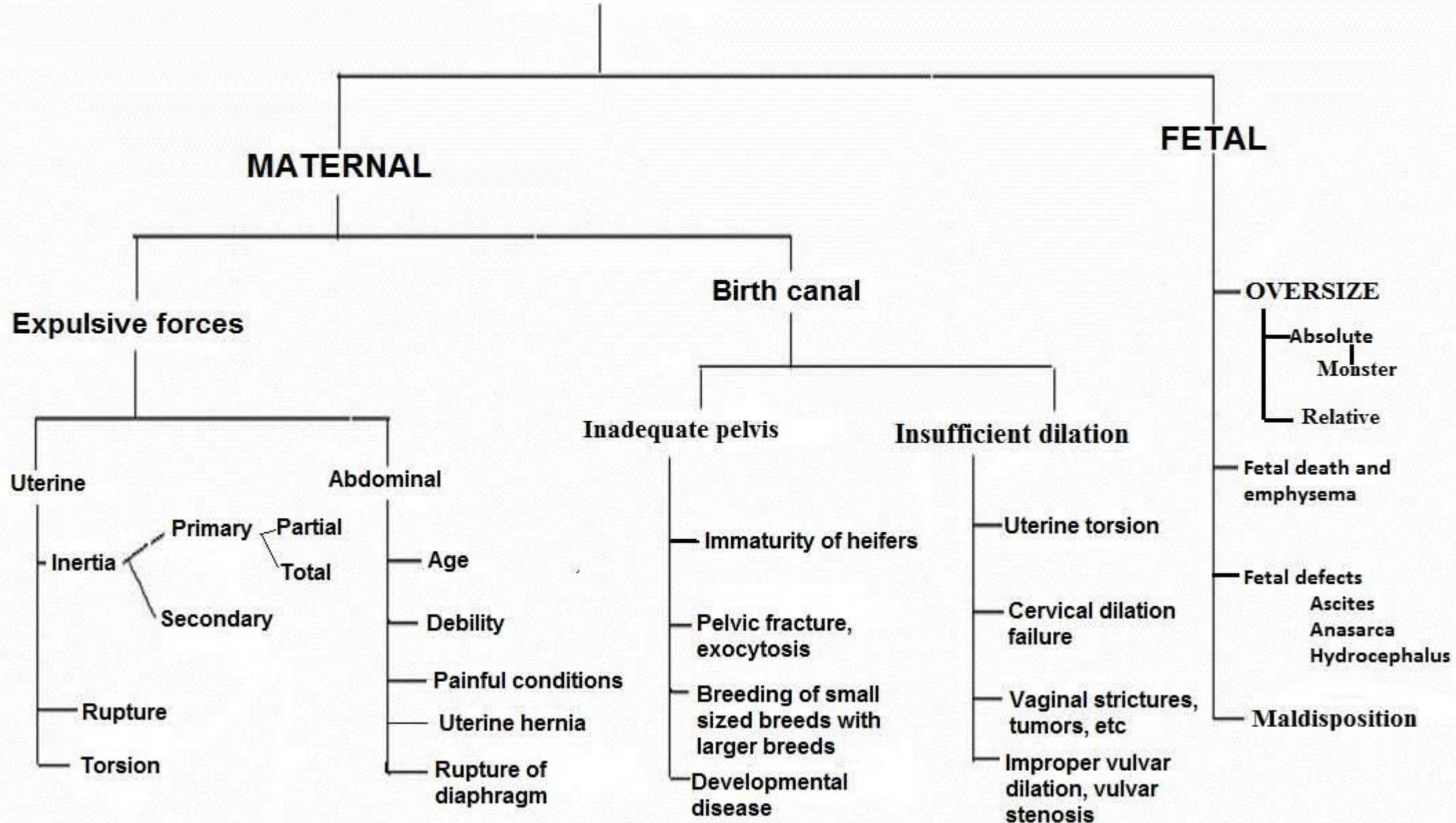
- **DYSTOCIA :-**
difficult birth

PROLONGED GESTATION

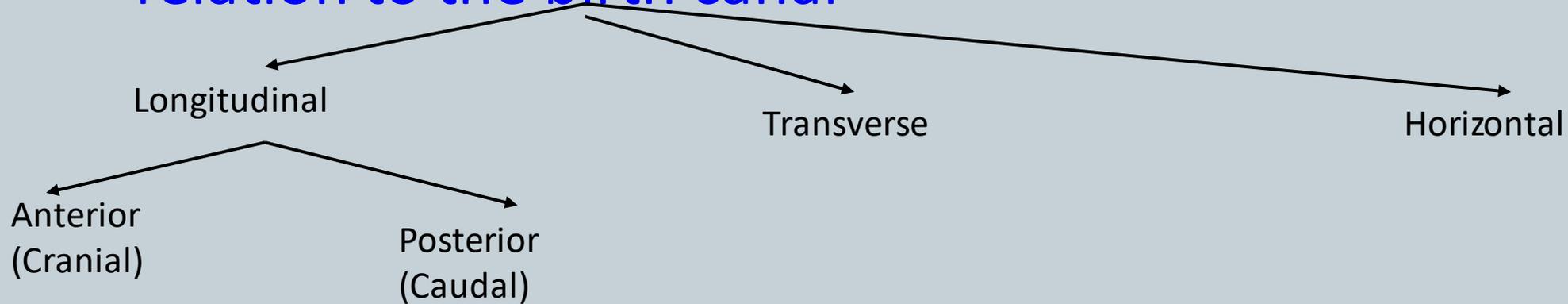
RUPTURE OF BIRTH CANAL :-

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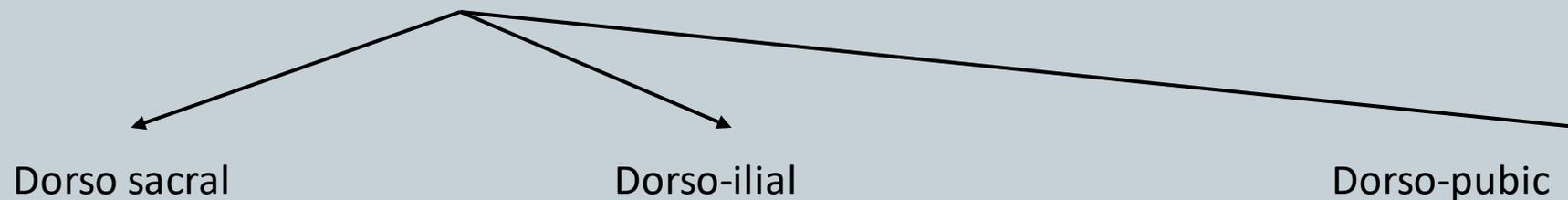
CAUSES OF DYSTOCIA



- Presentation: Relationship of the long axis of the fetus in relation to the birth canal

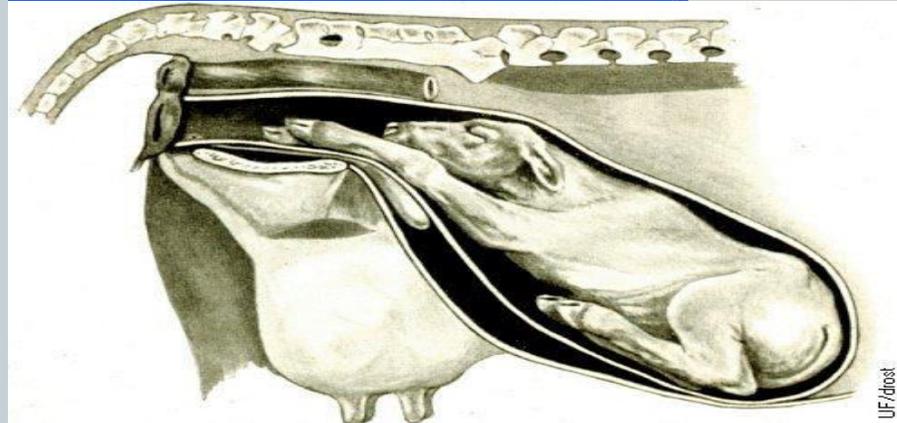
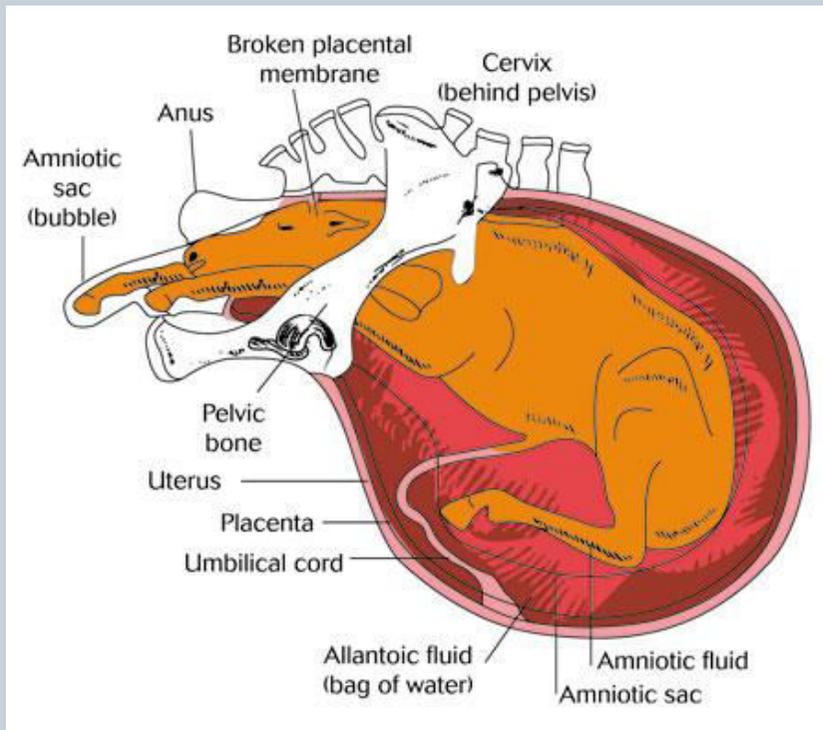


- Position: Relationship of the dorsum of the fetus as applied to the quadrants of the mother; sacrum, ileum, pubis



- Posture: Relationship of the head and extremities of the fetus to its own body

Normal Birth Posture: Anterior longitudinal presentation dorso-sacral position, both forelimbs extended and the head extended resting on the knees.



Common causes of Dystocia

BASIC

1. Heredity - Breeds like brown Swiss, Bull dogs
 - Defects like hydrocephalus, Achondroplasia, Perosomus
2. Nutrition & Management - Small size of the dam
 - Disproportionate mating
 - Poor or excess feeding.
3. Traumatic- Ventral hernia, rupture of prepubic tendon.
4. Miscellaneous- Calcium deficiency

IMMEDIATE

Maternal and Fetal or a combination of both

A. MATERNAL- **I Failure of Expulsive forces or**
 II Insufficient dilation of birth canal

I Expulsive forces.

1. Uterine expulsive forces

a) Uterine Inertia

i) Primary uterine inertia -Myometrial defect- overstretching, degeneration uterine infection, small litter size, heredity.

-Biochemical deficiencies – estrogen, oxytocin, PGF_2 , relaxin, calcium, glucose.

- Environmental disturbance.

- Nervousness

- Oligoannion- Premature birth

- Lack of exercise

ii) Secondary Uterine inertia- Subsequent to exhaustion

- Dachshund, Labrador Retriever, German Shepherd, Great Dane, Saint Bernard, Pug and Pomeranian are more prone to complete primary uterine inertia in the bitch
- Nervous voluntary inhibition of the labor can occur in the bitch
- Secondary uterine inertia- following exhaustion
- Therapy Calcium borogluconate IV in cows
 - Calcium gluconate in the bitch 5-10 mL IV monitor heart beats before administration
 - Dextrose, Oxytocin. Spasmolytics in repeated administration of oxytocin in bitch. PG

b) Uterine rupture

Spontaneous –due to a weak point
Accidental- rolling during torsion

In large uterine ruptures with severe internal hemorrhage death occurs shortly

In smaller ruptures animal may show transient colic without fetal delivery. Sometimes intestine may prolapse from the vulva coming out through the ruptured part of uterus.

Administration of oxytocin after fetal delivery would contract the ruptured part of uterus however, extensive ruptures with prolapse of abdominal organs necessitate emergency laparotomy with repair

c) Uterine torsion

2 Abdominal Expulsive forces

- Inability to strain because of age, pain, debility,
- diaphragmatic hernia, abdominal hernia.

- Manual assistance would be required in all such cases

II Insufficient dilation of the Birth Canal

1. Inadequate pelvis

-Due to pelvic fracture, exocytosis, immaturity, breed, neoplasia
Commonly require cesarean section.

2. Insufficient dilation-

- a) Uterus- torsion, herniation, adhesions
- b) Cervix- dilation failure, congenital defects, fibrosis.
- c) Vagina- Congenital defects, fibrosis, prolapse, perivaginal abscess, strictures, excess fat
- d) Vulva- congenital defects, fibrosis, immaturity.

Cervical dilation failure

- Cervical dilation at parturition involves a complex process. It is a multifactorial process which is an outcome of hormonal regulation, inflammatory process and enzymatic breakdown of collagen.
- When fully dilated the cervix is continuous with the vagina
- Cervical dilation problems are less common in buffalo compared to cattle due to more capacious pelvis, larger area of ileum and free and easily separable 5th sacral vertebra.
- Cervical dilation problems are common in sheep and goats and known as Ring Womb.

- When cervix is not dilated sufficiently it is palpable by trans-rectal examination and on vaginal examination a slit in the cervix permitting only the passage of 1 or 2 fingers is found.
- The animal should be examined to rule out uterine torsion
- Sometimes it is beneficial to wait for some time and then evaluate again.

- B-2 adrenergics such as salbutamol, terbutaline, isoxsuprine HCl (50-100 mg IM or IV for cows, 100-150 mg for mares and 10-40 mg for sheep and goats) can be tried along with manual manipulation but results are not consistent.
- Clenbuterol (Planipart) 0.3 mg IV or IM
- Denaverine HCl (400 mg IM) (spasmolytic) (Germany) but not suggested if parts of fetus are not in the cervical canal hence has limited value.

- Valethamate bromide (Inj Epidosin) an antispasmodic has been shown to shorten the first stage of labor at dose of 80 mg IM in cattle and 24-40 mg in sheep and goats and also in cervical dilation failure due to cervical spasm in cattle, but results are inconsistent.
- Drugs such as misoprostol local application have shown some promise in mares but not in cattle and similar results were obtained by IM administration of Ritodrine in cattle.
- In the presence of an emphysematous fetus partial cervicotomy has been suggested if the fetus is in the birth canal.
- Cesarean section is suggested if drug therapy fails.

Vaginal causes of insufficient dilation

- Congenital strictures in the vagina or fibrous tissue bands often hinder conception in bitches but seldom impede whelping.
- Abscess in vagina can rarely cause dystocia but can be easily drained prepartum if located
- Vaginal tumors or growths if small seldom cause difficulty in parturition yet large growths may sometimes rarely problem in delivery. Often many growths protrude outwardly post partum and can be removed surgically by general or cryo-surgery.

- In the presence of vaginal hematomas/large immature abscess it is often to opt a cesarean section.
- **Vaginal Cystocele** (Prolapse of bladder through urethra or vaginal rupture). The bladder must be replaced first after pushing the legs of fetus back in the birth canal.
- **Vulvar stenosis**: Fetus can be delivered by traction with or without a episiotomy cut about one third down the lateral wall of the vulva through the skin mucosa junction

Vaginal cystocoele



B FETAL

1. **Fetal death**- Lack of initiation of birth process, lack of movements.

2. **Fetal oversize** a) Absolute Large sized fetus Monsters, disproportionate mating

b) Relative- A fetus larger relative to the pelvis Fetopelvic disproportion
common in heifers that calve at less than 2 years of age

3. Fetal defects- Ascites, anasarca, hydrocephalus

4. Fetal Maldisposition

Malpresentation -Transverse, lateral, vertical

Malposition Dorsopublic, Dorso-ilial , oblique

Malposture

-Anterior presentation – Limb flexion at carpal, elbow or shoulder

-Head deviation – lateral, upward and downward

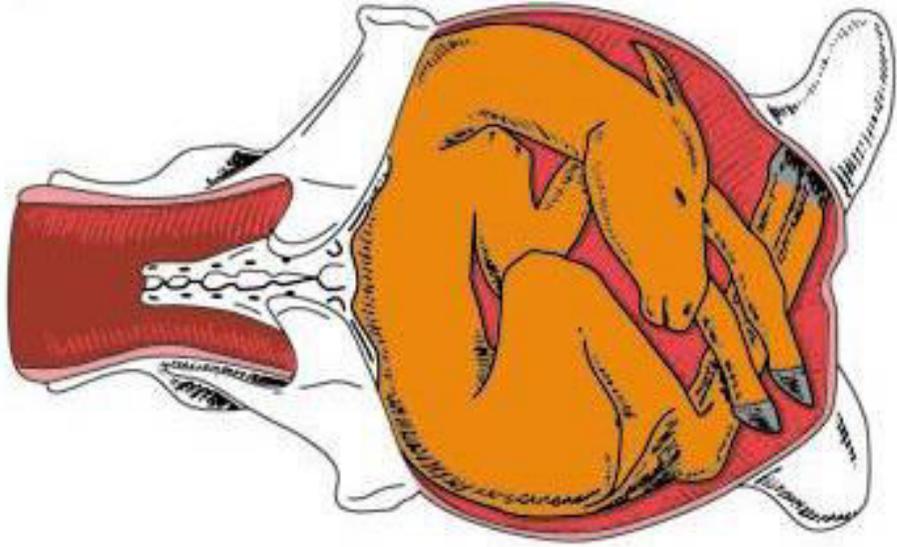
(vertex, footnape and breast- head)

-Posterior presentation : Hock flexion and hip flexion (Breech)

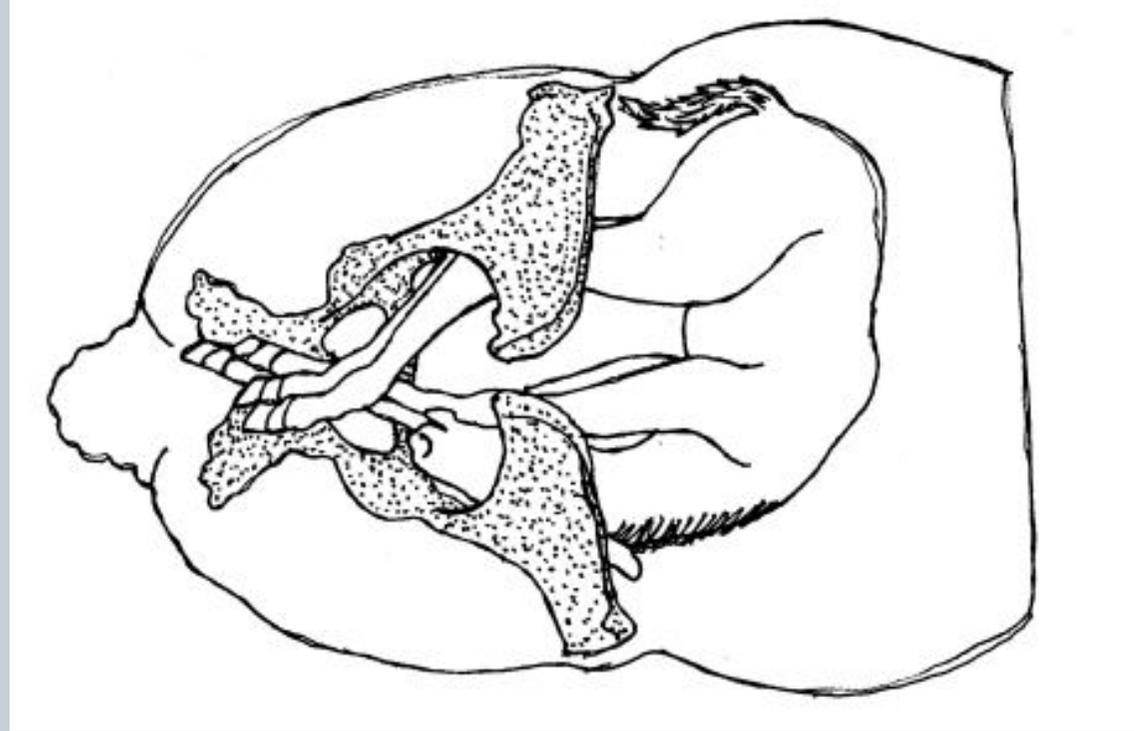
4. **Fetal defects**: Ascites, Hydrocephalus, Anasarca

Abnormal Presentations

Transverse Presentation



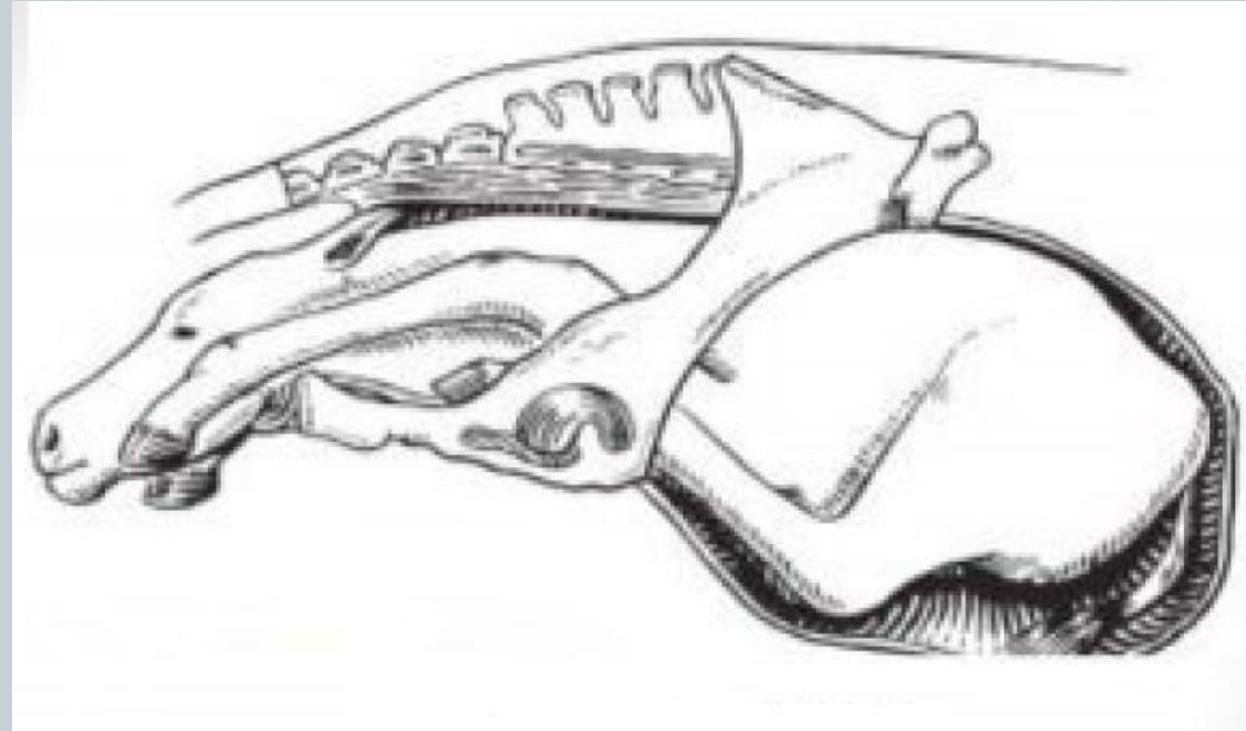
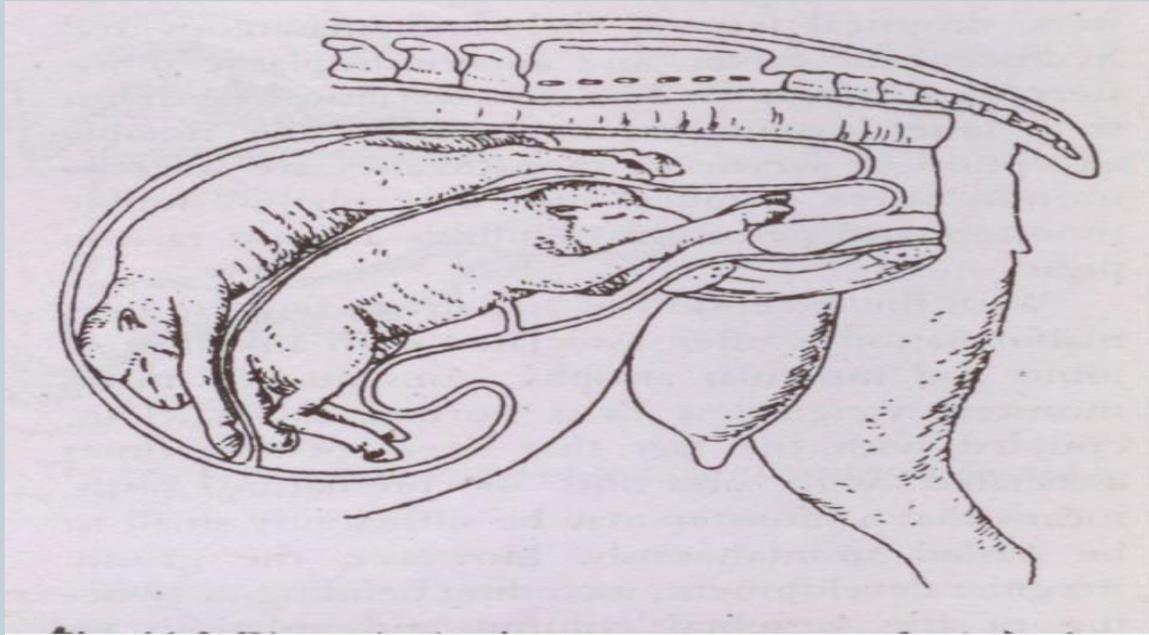
Dorso-Transverse



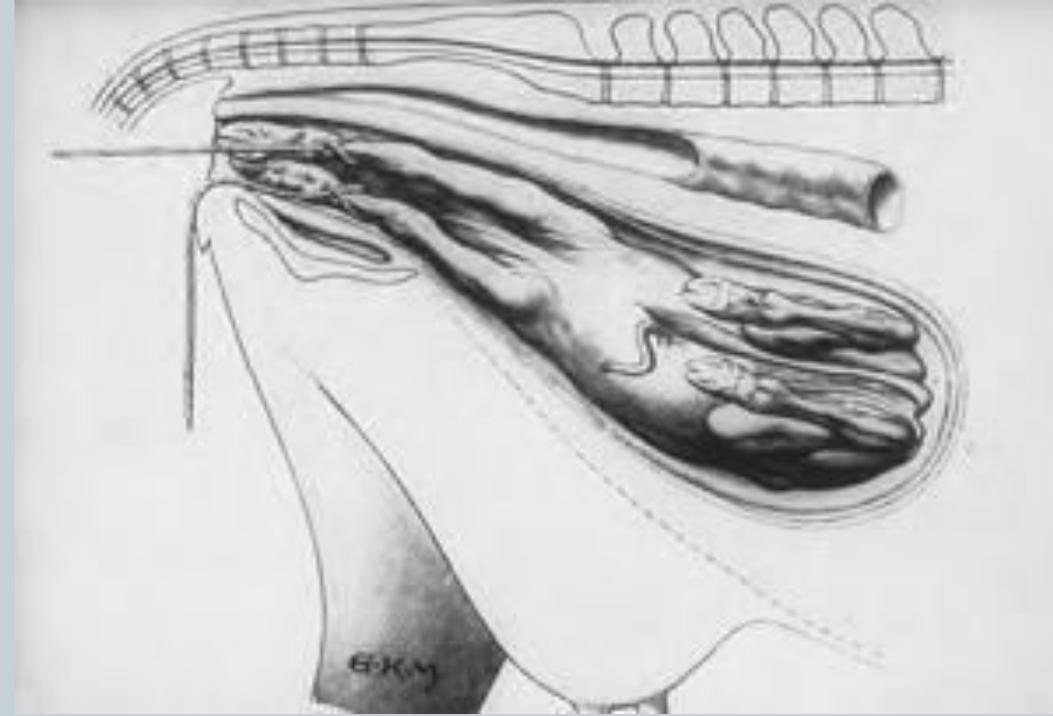
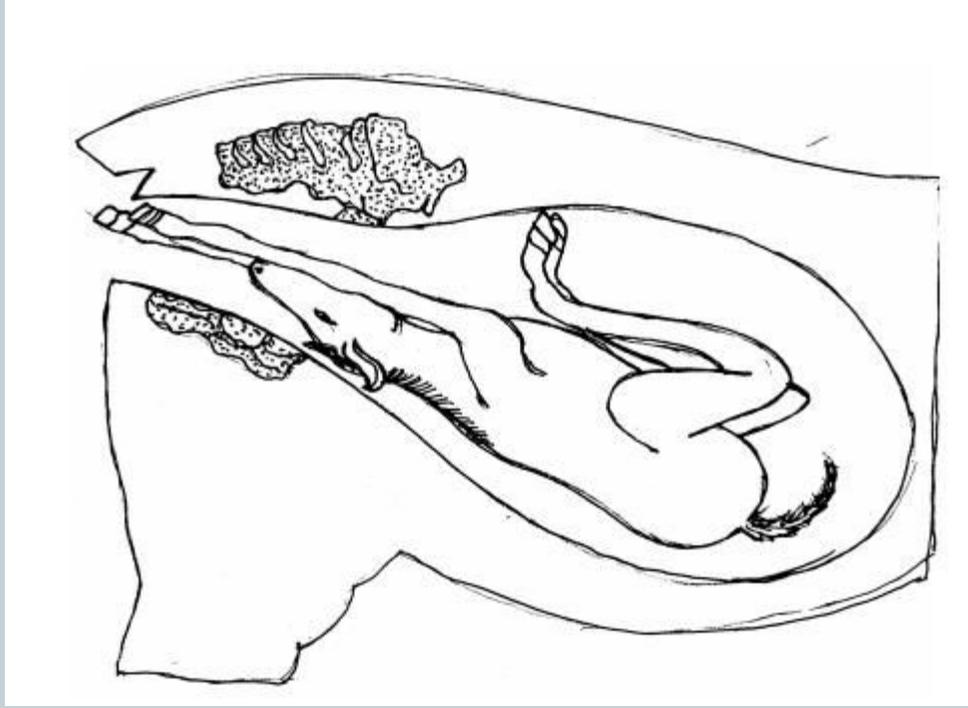
Ventro-Transverse

Dog sitting (ventro-vertical posture)

Simultaneous presentation

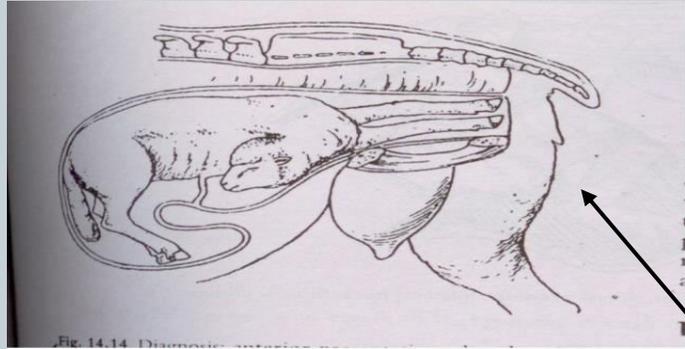


Abnormal Positions



Dorso pubic and Dorso-iliac positions

- Abnormal birth postures: Head deviation and limb flexion (carpal, elbow and shoulder) Vertex



Anterior Longitudinal Presentation

Lateral Head Deviation

Downward Head Deviation

Vertex

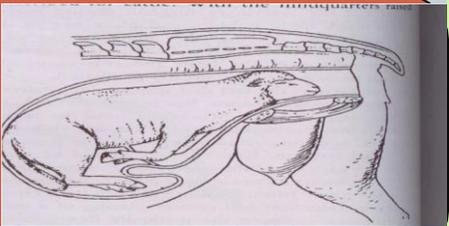
Nape

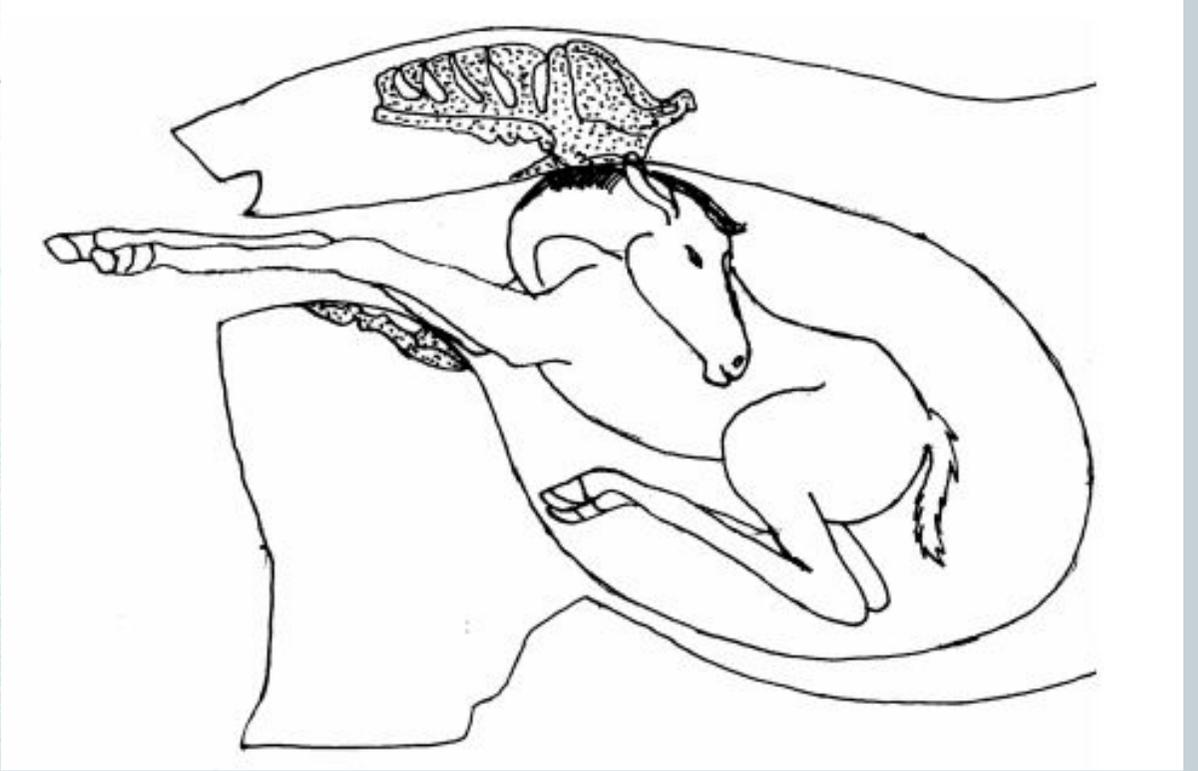
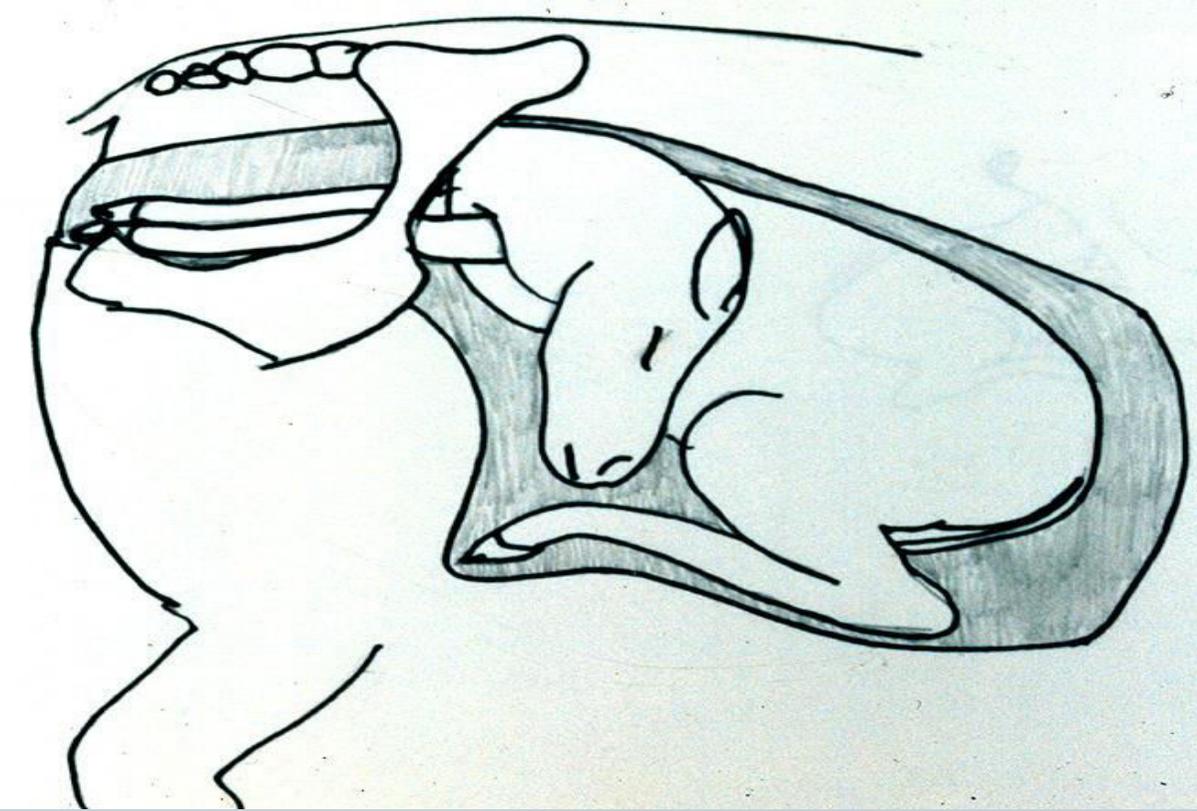
Breast Head

Carpal flexion

Elbow flexion

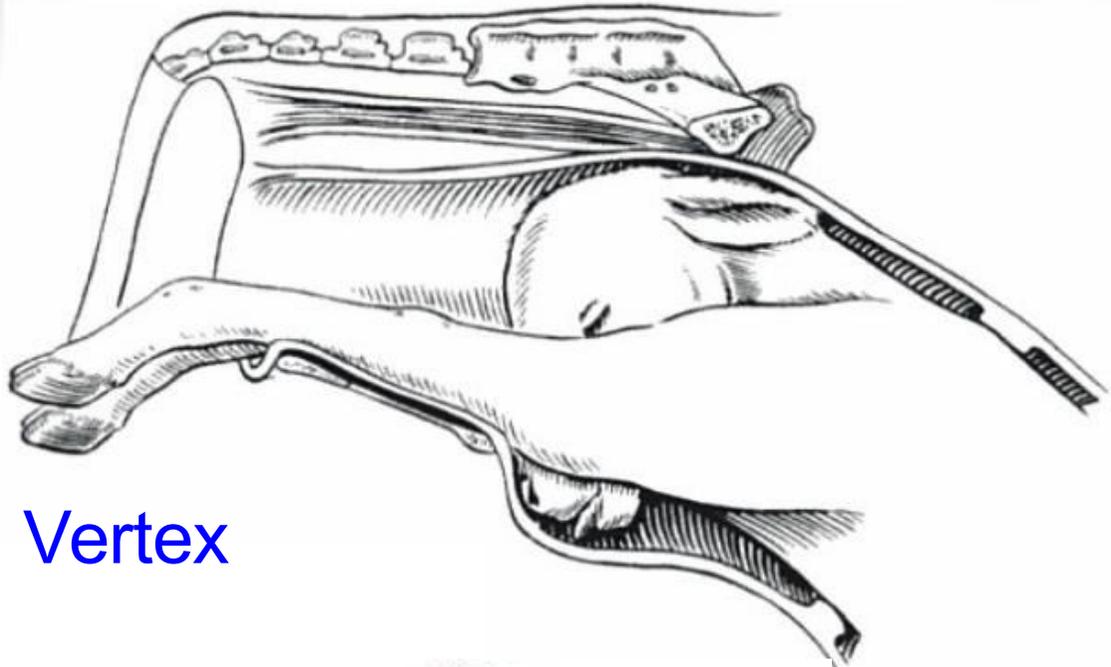
Shoulder flexion



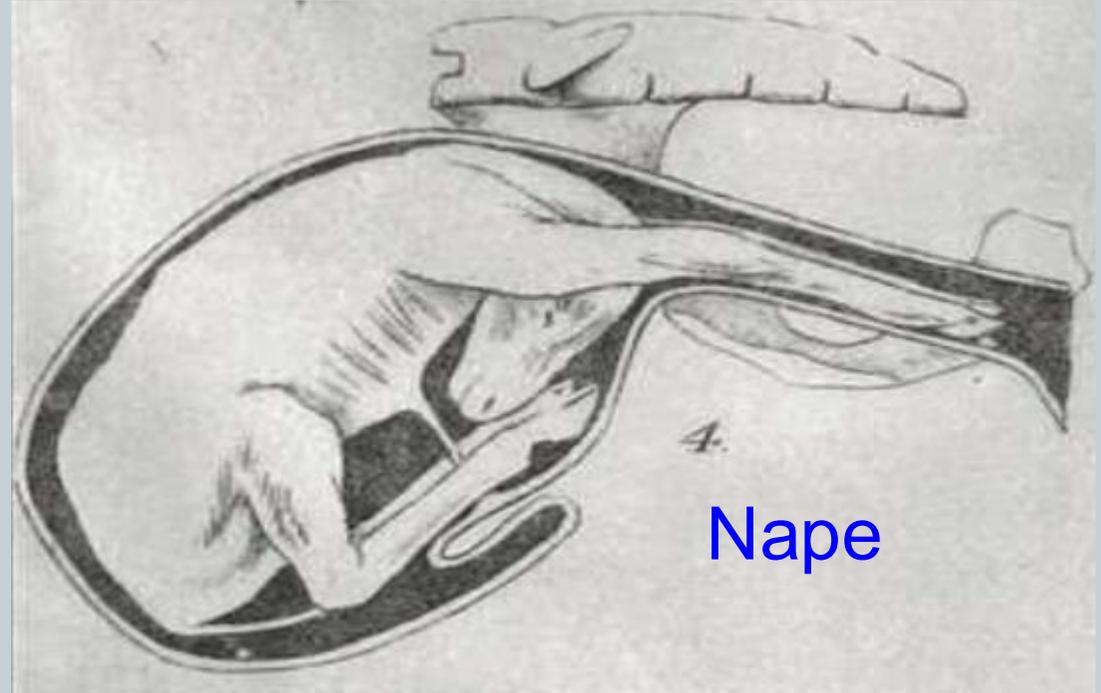


Lateral head Deviation

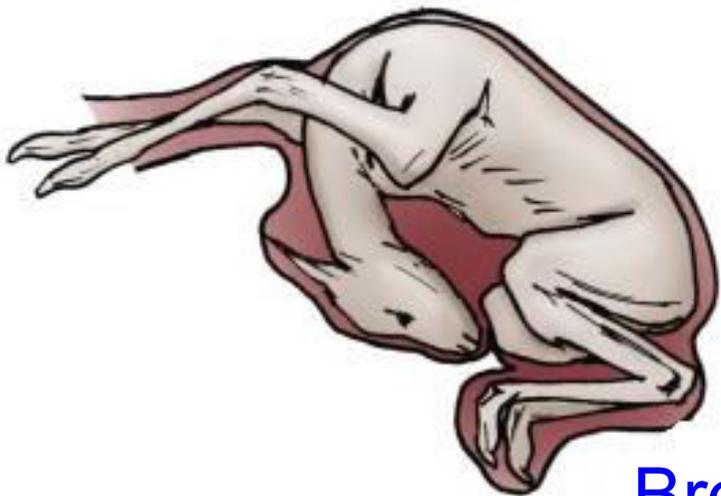
Downward head Deviations



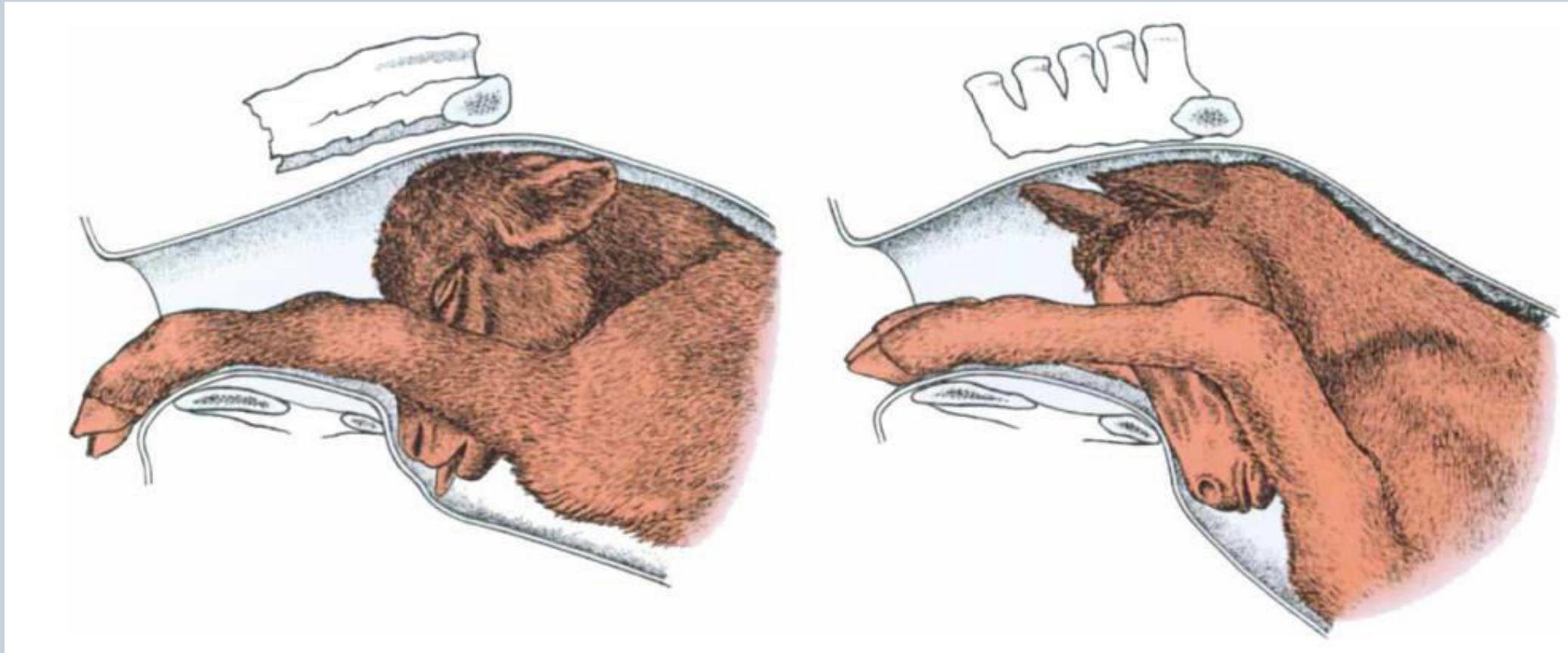
Vertex



Nape

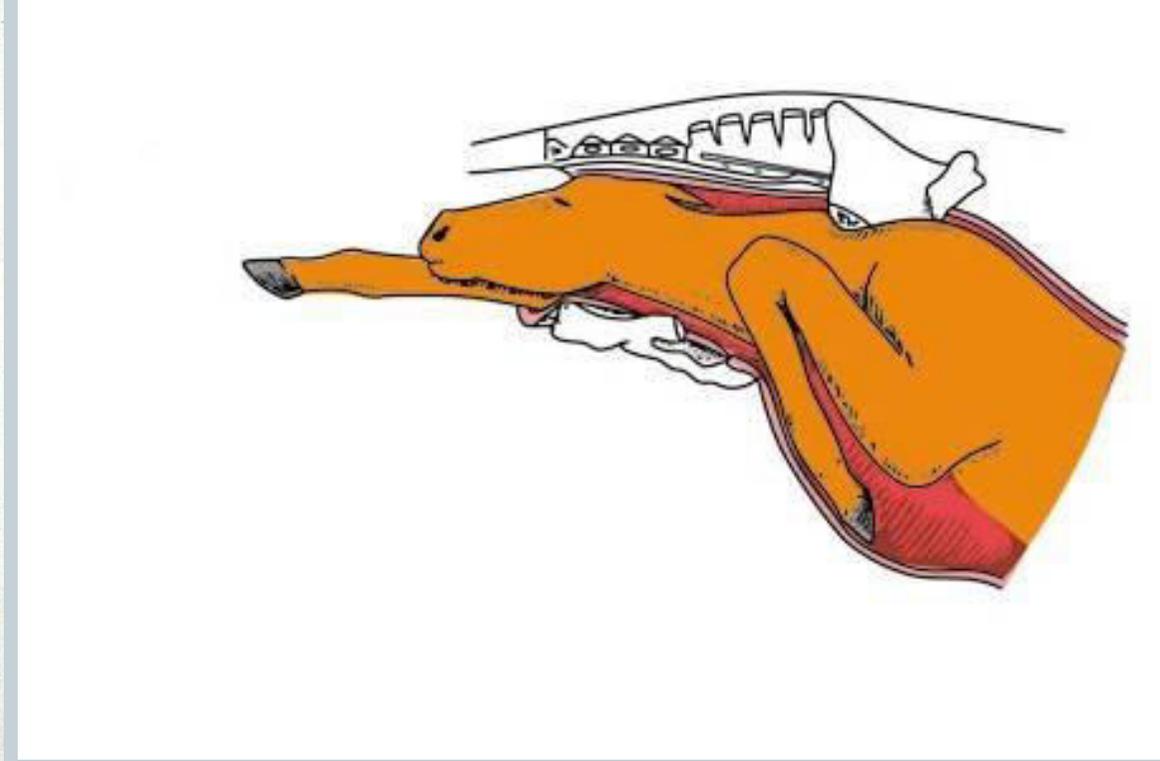
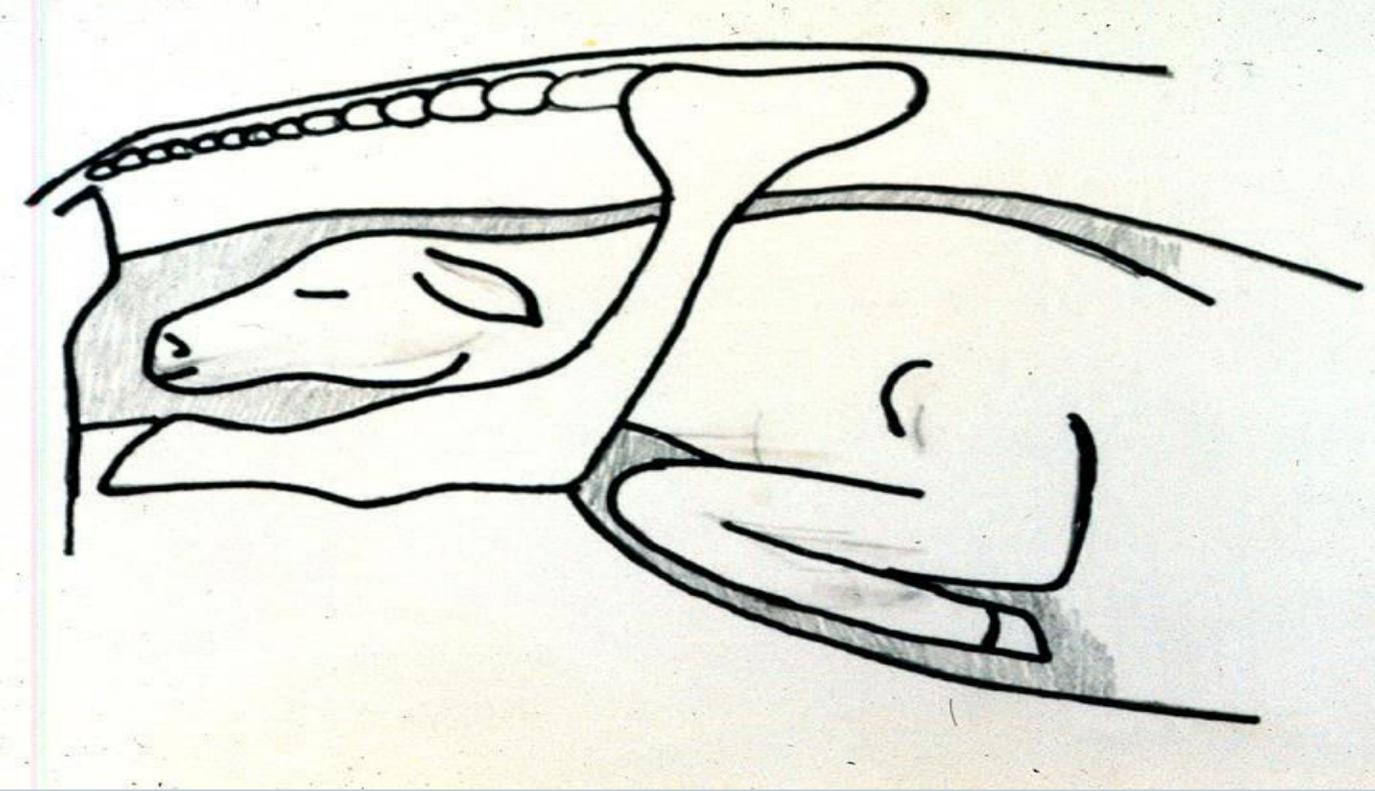


Breast Head

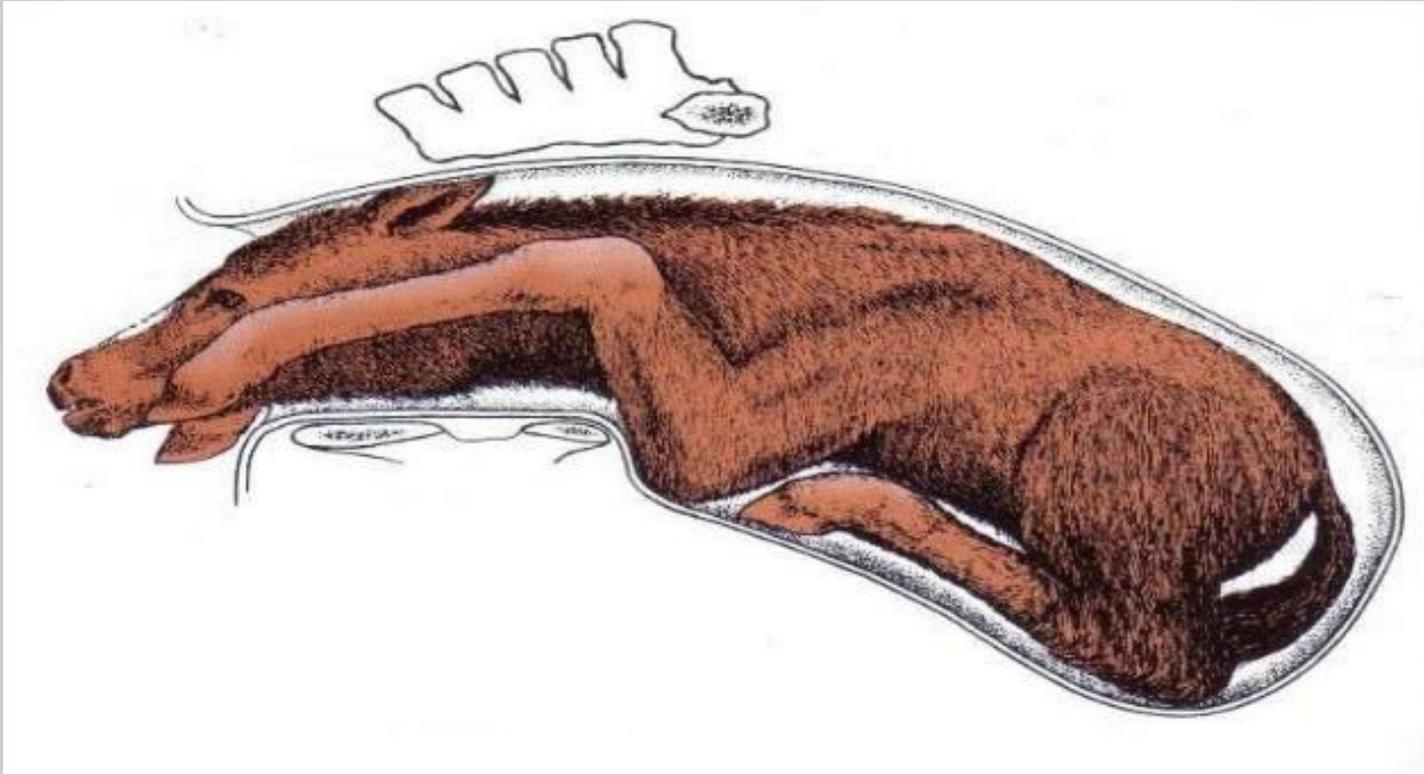


Head Deviation in a calf and foal

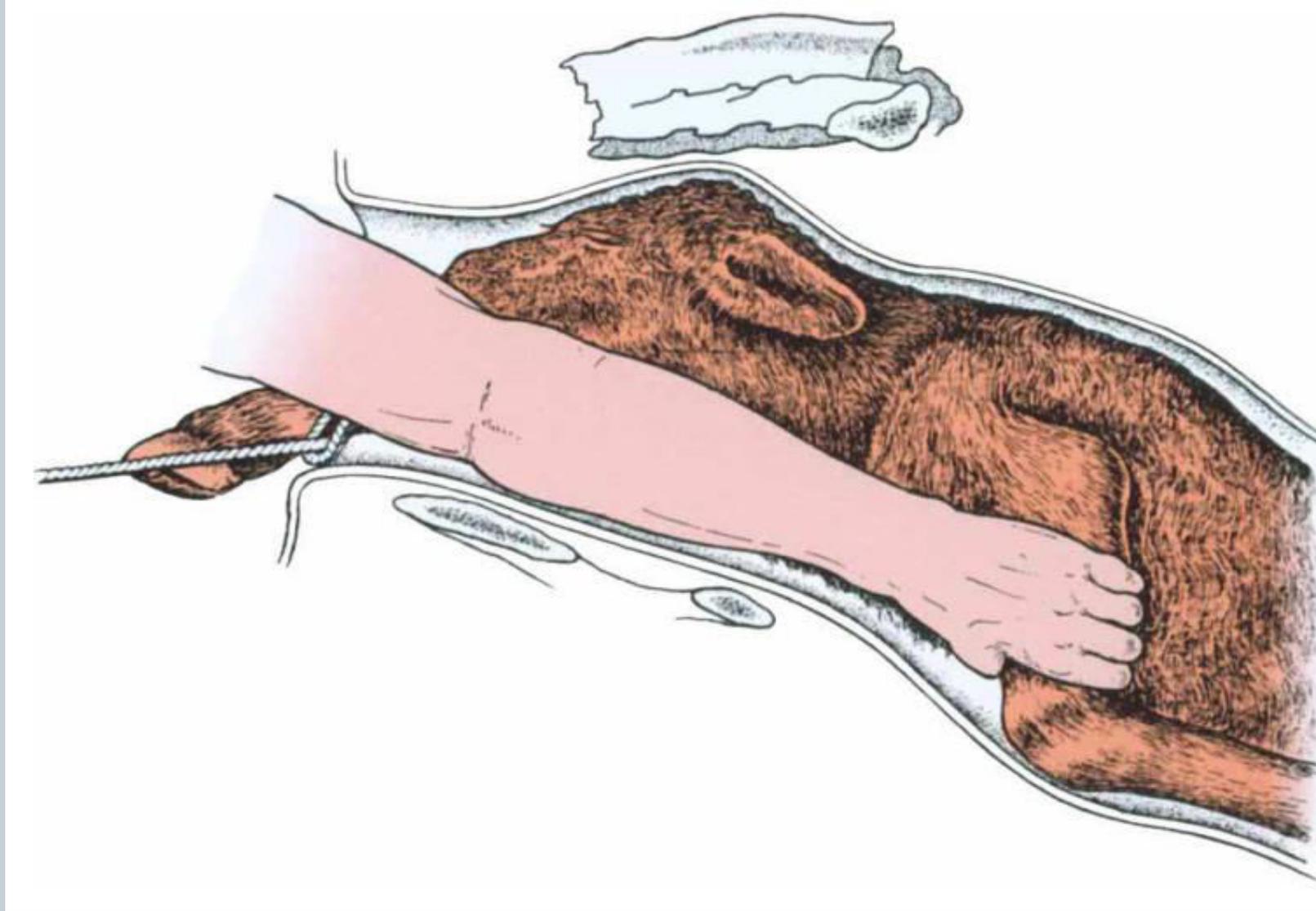
Limb flexions



Carpal flexion



Elbow flexion

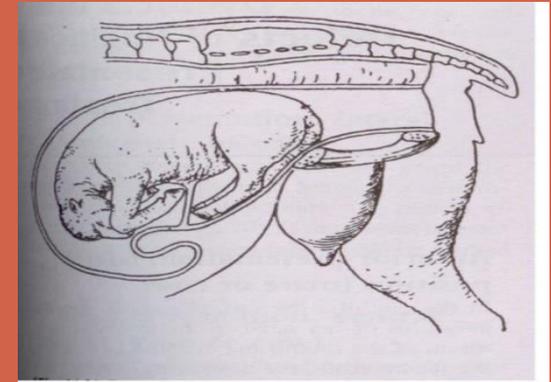


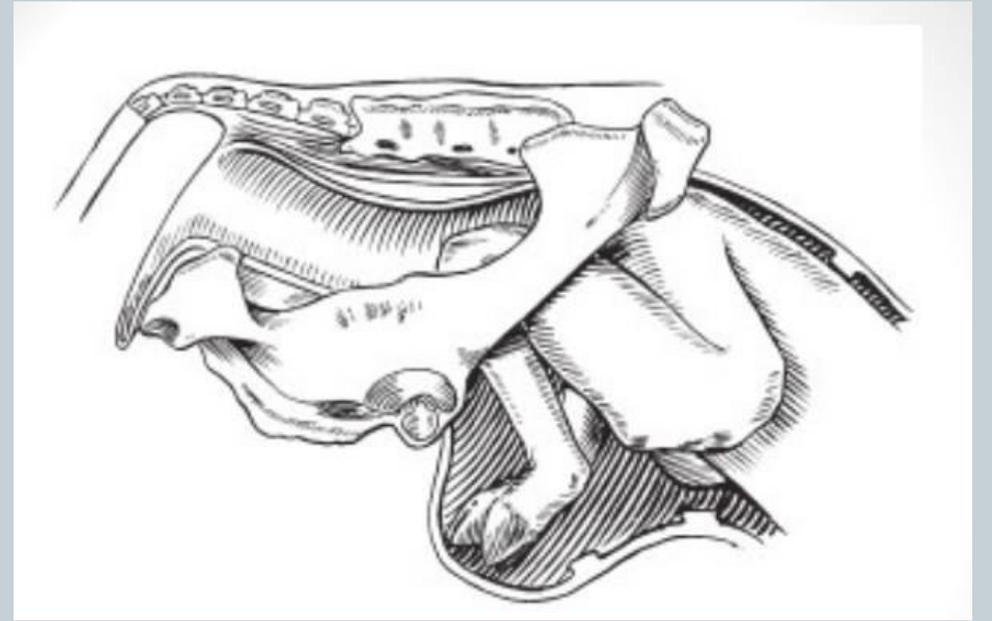
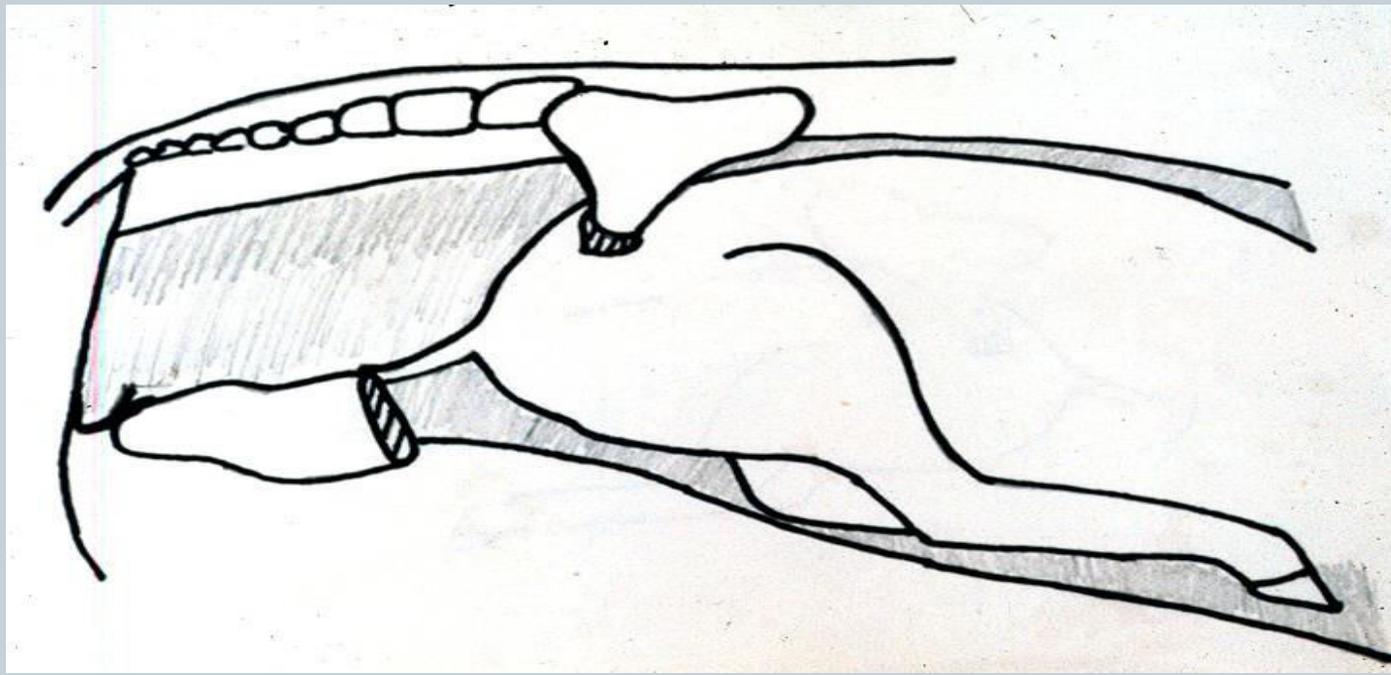
Shoulder flexion

Posterior Longitudinal presentation

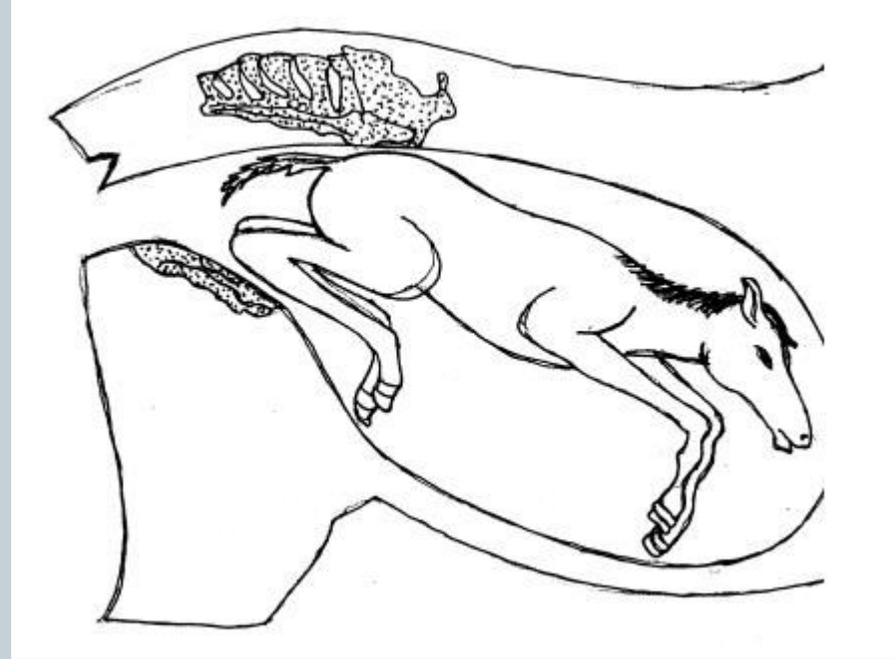
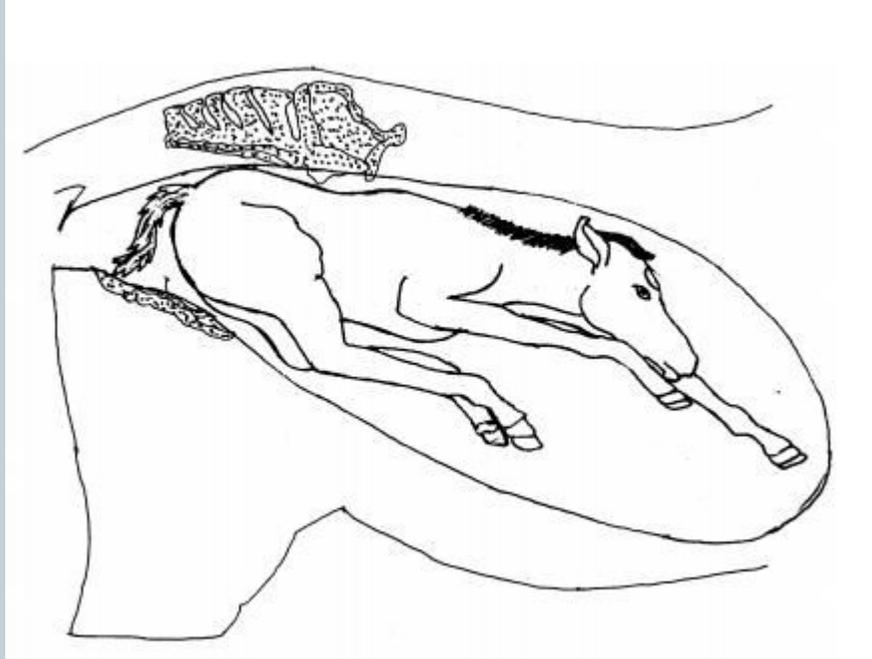
Hock flexion

Hip flexion





Hip Flexion and Hock flexion



Hip Flexion and Hock flexion

CAUSES OF DYSTOCIA IN CATTLE AND BUFFALOES

The most frequent cause of dystocia in cows is fetopelvic disproportion and fetal malpresentation. Hence fetal causes are more common in cows whereas in the buffalo uterine torsion is the single largest cause of dystocia in the dairy buffalo.

Cause of dystocia	Cattle (% frequency)	Buffalo (% frequency)
Fetopelvic disproportion	45	8
Fetal malpresentation	26	26
Cervical dilation failure	9	3
Uterine Inertia	5	2
Uterine torsion	3	55
Other maternal abnormalities	7	2
Other fetal abnormalities	5	4

CAUSES OF DYSTOCIA IN OTHER SPECIES

The incidence of dystocia in the mare is rare, most frequent cause of dystocia in mares is lateral head deviation followed by posterior presentation problems and rarely transverse presentation..

The common causes of dystocia in sheep and goat are fetal maldispositions and birth canal obstruction. Ring womb or the cervical dilation failure is one of the most common cause of birth canal obstruction (and thus dystocia) in sheep and goat

The most common cause of dystocia in the bitch, cat and sow is uterine inertia, followed by fetopelvic disproportion.

Thank You

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