OBSTETRICAL OPERATIONS, DYSTOCIA DUE TO PRESENTATION, POSITION & POSTURE, DEALING AND TREATMENTS

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OBSTERICAL MANOEUVERS

- **OBSTETRICAL OPERATIONS : 4 GROUPS:**
  - **Mutation or Correction**
  - **Forced traction after correction**
  - **Fetotomy**
  - **Caesarean section**
  - **MUTATION OR CORRECTION: involve change of presentation, position or posture so as to bring fetus in normal presentation, position or posture or expulsion. These includes:**
    - **Repulsion or Retropulsion**
    - **Rotation**
    - **Version**
    - **Extension and Flexion.**

Prerequisites for undertaking mutations :

Complete dilatation of cervix, Movement of fetus in the uterus and pelvis, Rupture of fetal envelopes and adequate lubrication.

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- **REPULSION OR RETROPULSION: Pushing fetus forward in uterus, to obtain adequate space for correction of fetal part in an abnormal presentation, position and posture**

  Carried out in standing position

  Hand, other instruments used- Kuhn's crutch, Reindl's repeller, Gunther's repeller 2 or 3 pronged

  Should be done carefully after proper lubrication in between straining bouts by jerks rather than by continuous push.

- **ROTATION: Consists of turning the fetus on it's long axis so as to correct position but not the presentation. Unipara dystocia is corrected by rotation of fetal body after repelling it out of pelvic cavity**

  Epidural anaesthesia and adequate lubrication of birth canal facilitates rotation and repulsion.

  Hands, other instruments- cammerer's torsion fork or Kuhn's crutch

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- **VERSION: Effecting change in fetal presentation. Usually limited to 90° and can be effected by repelling one extremity of the fetus and exerting traction on the other. Transverse presentation can be modified to longitudinal**

  When head of fetus is moved towards the pelvic inlet- ANTERIOR or CEPHALIC VERSION and when post. parts of fetus are moved towards pelvic inlet- POSTERIOR or PELVIC VERSION

  Podalic version is found in human which includes two important movements: Repulsion and Evolution.

- **EXTENSION and FLEXION: Are partial movements which consists of extension or flexion of limbs, head and neck that are used for correction of malpostures. This method involves three basic mechanical principles for easy correction: Repulsion of proximal extremity of limb, lateral rotation of middle portion carpus , tarsus or neck and traction on distal extremities.**

OBSTERICAL MANOEUVERS

- **FORCED TRACTION AFTER CORRECTION: Withdrawal of fetus from birth canal of dam by application of force**

  Done when expulsive forces of dam or operator's attempts are incapable of effecting delivery

  Such force may be developed by cords and bands, hooks and forceps. Lubrication of genitalia is essential for F.T.

  It is indicated in:

  - **Primary Uterine Inertia**
  - **Primipara with small birth canal for dilating passage**
  - **Narrow birth canal due to pathological conditions like tumors, abscesses and fat**
  - **Post. Presentation to hasten delivery to prevent fetal death due to asphaxia.**
  - **Multiparous animals, forced traction with forceps is indicated when head of fetus has crossed birth canal and become cyanotic.**

OBSTERICAL MANOEUVERS

- **FETOTOMY: Signifies any obstetrical operation which has the object of reduction in the volume of the fetus either by mutilation or by division to be extracted in parts**

  When delivery of entire fetus is not possible than Fetotomy is performed in uterus or when fetus is engaged in genital passage

  Generally done on dead fetus or when the life of fetus is to be sacrificed.

  Can be Intra-fetal (S/c removal of fetal parts, safer as the excised bones and parts are covered by fetal skin and dont injure maternal passage during traction) or Extra-fetal

Advatages:

- **Rapid reduction in size of fetus facilitating safe delivery per vaginum.**
- **Exposure of dam to major surgery is avoided.**
- **Short recovery time and less care is required afterwards.**
- **Dam is more stable than C.S.**

OBSTERICAL MANOEUVERS

Disadvatages:

- **May require more time than C.S.**
- **Exhaustive and injurious to Obstretians**
- **May be dangerous to dam.**

Indications:

- **Malpresentation, Malposition and Malposture of fetus**
- **Relative disproportion b/w size of fetus and maternal birth canal.**
- **Emphysema**
- **Deformities of maternal pelvis: Exostosis, fracture, tumors**
- **Irreducible distortion of fetus- contraction of muscle, tendon and Wreyneck.**
- **Disease of fetus- Hydrocephalus, Ascitis, Oedema and Anasarca.**

OBSTERICAL MANOEUVERS

Instruments used are:

- **Thygesons and Utrechet fetotome.**
- **Wire saw handle**
- **Fetotome threader**
- **Krey's Schottler's hook**
- **Wire- saw introducer or director**
- **Fetotomy knife**
- **Manual assistance**

- **CAESEREAN SECTION:**

HISTORY OF THE CASE

- Has full term arrived or is delivery premature?
- Is the animal a primigravida or multigravida?
- What is her previous breeding history?
- What has been the general management during pregnancy?
- When did straining begin? What was its nature slight and intermittent or frequent and forceful?
- Has straining ceased?
- Has a water-bag appeared and, if so, when was it first seen?
- Has there been any escape of fluid?
- Have any parts of the fetus appeared at the vulva?
- Has an examination been made and has assistance been attempted? If so, what was its nature?
- In the case of the multiparous species, have any young been born, naturally or otherwise, and if so, when? Were they alive at birth?
- Is the animal still taking food?
- In the case of the bitch and cat, has there been vomiting?

GENERAL EXAMINATION OF ANIMAL

- Physical and general condition
- Recumbent, resting /exhausted/suffering from metabolic disease?
- Body temperature and pulse rate
- Attention to vulva. Parts of a fetus may be protruding, assess the nature of the dystocia
- Exposed fetal parts moist or dry
- Parts of amnion protrude, what is their condition? Are they moist and glistening and is fluid caught up in their folds?
- Membranes are dry & dark in colour
- Nothing protrudes from vulva, in which case particular attention should be paid to the nature of the discharge.
- Fresh blood, if profuse, indicates recent injury to birth canal

GENERAL EXAMINATION OF ANIMAL

- Dark brown fetid discharge- Delayed case. (Fetus is dead and uterus infected)
- Bitch and cat, abdominal distension should be observed (number of fetuses in uterus).
- Onset of vomiting, together with a increase in thirst- Grave signs in bitch

DETAILED EXAMINATION OF ANIMAL

- ✓ **Properly restrained in clean environment**
- ✓ **Mare, cow, ewe & doe - Standing; in sow - lateral recumbency**
- ✓ **Plentiful supplies of clean hot water & soap, surgical scrub, table, bench or truss of straw covered with a sterile cloth**
- ✓ **Contamination of genital tract - low as possible.**
- ✓ **Supply of clean straw be placed under & behind animal-floor is often wet & slippery, application of sand or grit is helpful.**
- ✓ **Assistant holding tail to one side, external genitalia & surrounding parts are washed from one bucket, in mare a clean tail bandage applied since tail hairs are frequently introduced into vulva and vagina and can cause quite severe lacerations.**
- ✓ **Operator – Wash hands, wear clothing & plastic sleeve**

DYSTOCIA DUE TO FETOMATERNAL DISPROPORTION: TREATMENT (IN CATTLE)

Major cause of dystocia in cattle

Can be marginal or severe,

Severe: Very immature heifer or pathological enlargement of the fetus, with fetal gigantism (embryos derived from (IVM) or (IVF) or prolonged gestation, or fetal monsters such as conjoined twins)

FETO-MATERNAL DISPROPORTION

May be overcome in following ways:

- ✓ **Normal expulsive forces + External Traction on fetus.**
- ✓ **Dia. of vulvar opening may be increased by EPISIOTOMY**
- ✓ **Fetus may be removed by CAESAREAN OPERATION**
- ✓ **Volume of fetus may be reduced by Fetotomy, *i.e.* dismemberment of its body within the uterus and vagina, and the fetus removed in several parts**

DYSTOCIA DUE TO POSTURAL DEFECTS: ANT. PRESENTATION

- Carpal flexion posture
- Incomplete extension of elbow(s)
- Shoulder flexion posture; complete retention of forelimb(s)
- Lateral deviation of the head: Commonest in Ruminants
- Downward displacement of head: uncommon type in cattle
  - Vertex Posture: Calf's nose abuts on the pubic brim and the brow is directed into the pelvis
  - Nape Presentation: More severe varieties of downward deviation of the head,
  - Breasthead Posture: in which the head is flexed Vertically between the forelimbs – rare in cattle

DYSTOCIA DUE TO POSTURAL DEFECTS: POST. PRESENTATION

- **Hock flexion posture**
- **Hip flexion posture: Bilateral (Breech Presentation)**

DYSTOCIA DUE TO POSITION DEFECTS:

- Abnormal position of the fetus - Frequently in horses
- Anterior presentation, lateral position
- Anterior presentation, ventral position
- Posterior presentation, lateral position
- Posterior presentation, ventral position

DYSTOCIA DUE TO PRESENTATION DEFECTS:

- **Oblique vertical presentation occurs in cows**
  - ✓ **Oblique dorso-vertical presentation**
  - ✓ **Oblique ventro-vertical presentation ('dog-sitting position')**
  - ✓ **Dorso-transverse presentation**
  - ✓ **Ventro-transverse presentation**

DYSTOCIA DUE TO TWINS:

Twin gestation in Cattle- Dystocia, Mares- Abortion

Twin dystocia is of three types:

- ✓ **<u>Both +nted at same time</u>- Both fetuses present simultaneously and become impacted in maternal pelvis**
- ✓ **<u>Defective +ntation, Position & Posture</u>- One fetus only is presented but cannot be born because of defective posture, position or presentation; posture is often most at fault, lack of extension of limbs or head being due to insufficient uterine space.**
- ✓ **<u>Uterine Inertia</u>- In uterine inertia, defective uterine contractions are caused, either by overstretching of the uterus by the excessive fetal load, or by premature birth. When inertia is present, birth of the first or second fetus does not proceed although presentation is normal.**

FETOTOMY

Dismemberment, dissection or cutting fetal parts inside uterus to reduce its size and achieve per-vaginal delivery of fetus

Sub-cutaneous or Per-cutaneous.

- Sub-cutaneous fetotomy- Incision is made on skin, separated from bones and musculature which are removed after breaking the joints. Skin is kept intact and is used as a point of traction for removal of fetus
- Per-cutaneous fetotomy- Amputations are done involving skin. (done these days)

Fetotomy- Partial or complete

- Complete fetotomy- Six cuts at specific sites on body of fetus (Ant. or Post. Presentation)
- Partial fetotomy- Only obstructing parts are removed

Indications

Mutations fail or are not possible to correct mal-postures

Incomplete dila. of cervix but sufficient to allow hands and instruments

Emphysema of fetus

Fetal monstrosities

Feto-pelvic disproportion

FETOTOMY

Pre-requisites :

- **Fetus should be dead.**
- **Fetus should be sacrificed if alive before fetotomy (Dam is invaluable and surgery is to be avoided)**
- **Epidural anesthesia**
- **Avoid straining and defecation during fetotomy**
- **Proper lubrication (Smooth manipulations, avoid injuries to genital passage and hands of the obstetrician)**
- **Well designed fetotome and other instruments**
- **Slight fault in fetotome will lead to breakage of wire during operation, improper cutting, slipping from desired position**

Technical knowledge

Trained obstetrician (can be too exhaustive)

FETOTOMY

Safety rules :

- **Frequent lubrication during procedure**
- **START- SHORT & RAPID sawing movements (Facilitate securing wire in skin, . Later sawing movements LONG & FORCEFUL)**
- **FETOTOME PLACEMENT & Wire Saw Position- Proper place**
- **Evisceration (reduces fetal size & helps in easy delivery)**
- **Avoid injuries to genital tract (Cover cut portions with hand, use enough lubricant while applying traction)**
- **Avoid excessive traction (Fetus not moving with traction- give another cut to reduce its size)**

FETOTOMY

ADVANTAGES:

- Post treatment recovery is fast with a low mortality rate.
- Fertile life of animal is maintained.
- Cost of treatment as compared to CS is too little
- Peak prod. is achieved early which is lost in a particular lactation after surgery

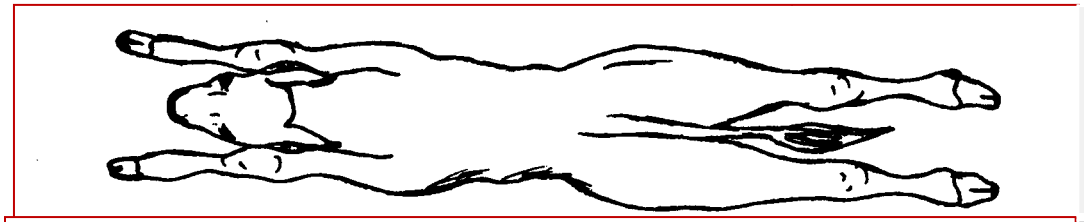
THREADING FETOTOME:

- Complete threading:
- Partial threading

CUTS FOR COMPLETE FETOTOMY (ANT. LONG. PRESENTATION)

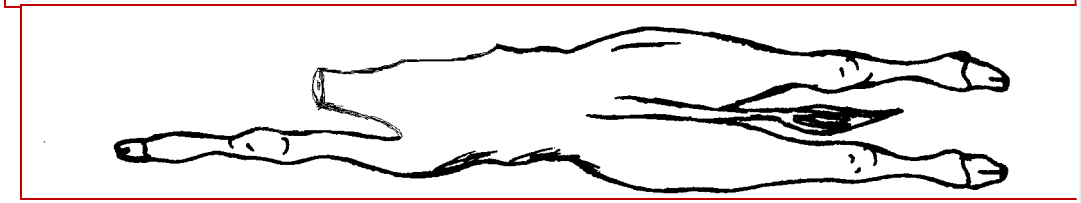
Cut	Organ to be amputated	Position of head of fetotome	Position of loop of wire saw
First Cut	Head	Posterior border of mandible	Caudal to ears around the neck
Second Cut	Forelimb	Dorso-caudal to cartilaginous part of scapula	Between point of elbow and chest
Third Cut	Other forelimb	-do-	-do-
Fourth Cut	Transverse division of fetal trunk at ant. portion of chest	Point of scapular attachment	Middle of sternum
Fifth Cut	Transverse division of fetal trunk at post. portion of chest (at lumbar region)	Posterior to last fetal rib	At right angles to fetotome head around abdomen
Sixth Cut	Longi. division of hind quarters (pelvic bisection)	Just cranial to tuber coxarum of one limb	In between tail and tuber ischium

CUTS FOR COMPLETE FETOTOMY IN ANT. LONG. PRESENTATION

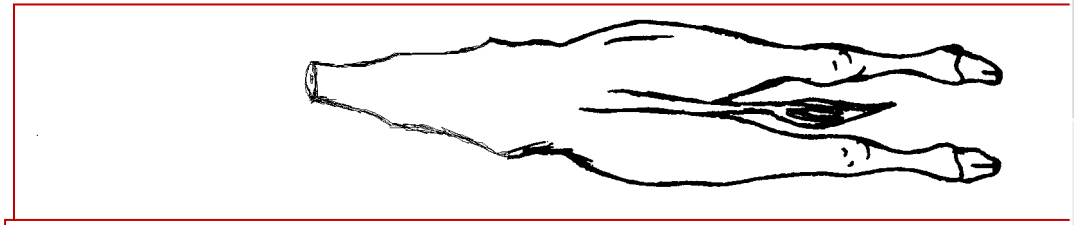


Amputation of head

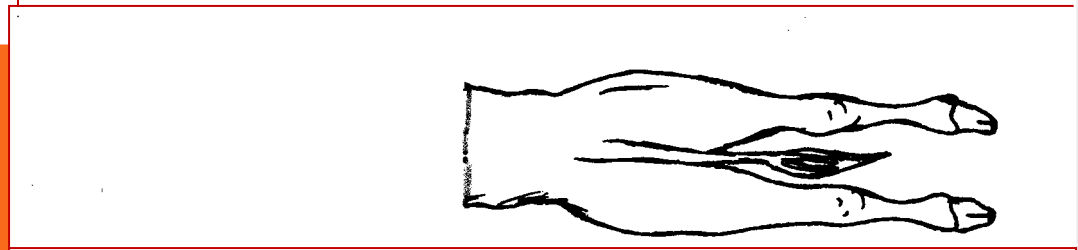
Amputation of one forelimb



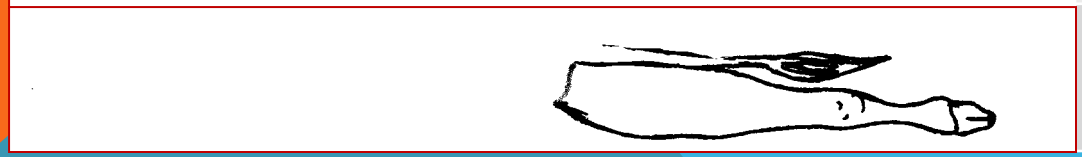
Amputation of second forelimb



Division at scapular region



Lumbar division

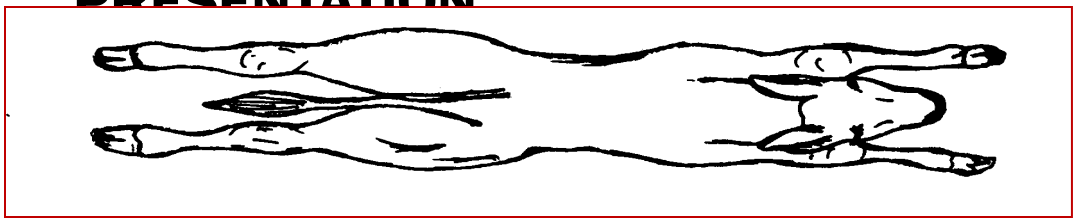


Bisection of pelvis

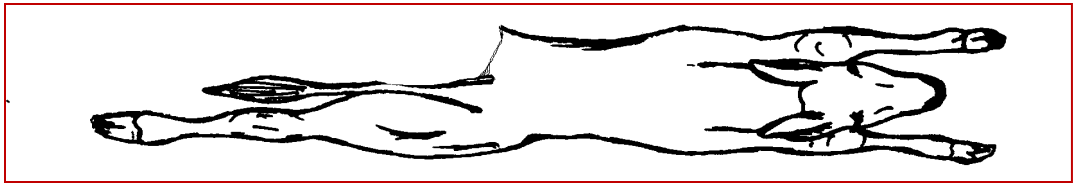
CUTS FOR COMPLETE FETOTOMY (POST. LONG. PRESENTATION)

Cut	Organ to be amputated	Position of head of fetotome	Position of loop of wire saw
First Cut	Posterior limb	Near trochanter major	Between tuber ischium and tail head
Second Cut	Other posterior limb	-do-	-do-
Third Cut	Transverse division of fetal trunk (lumbar region)	Just caudal to last fetal rib	At right angle to fetotome head around fetal abdomen
Fourth Cut	Transverse division of fetal trunk (scapular region)	Posterior to cartilaginous part of scapula	At right angle to fetotome head around fetal chest
Fifth Cut	Diagonal longitudinal division of the forepart	Posterior to scapular attachment	Neck and forelimb on one side and medial to opposite limb
Sixth Cut	Amputation of both forelimbs	Space between scapula and thorax	Between elbow joint and the chest

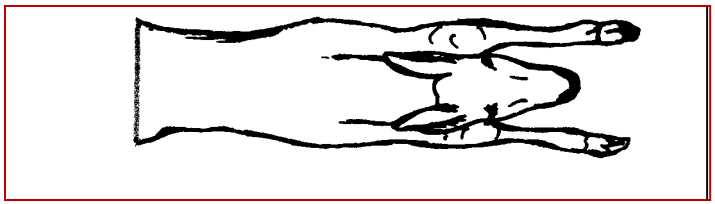
PRESENTATION



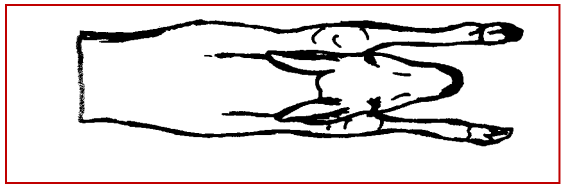
Amputation of one hind limb



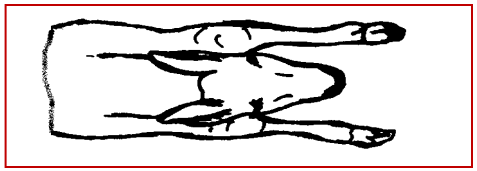
Amputation of second hind limb



Lumbar division



Thoracic division



Amputation of one forelimb

Amputation of second Forelimb

FETOTOMY

Ventral transverse presentation

- **Remove whatever part is approachable or bisect the fetus at lumbar region and remove the fetus into two parts.**

Dorsal transverse presentation

- **Cut is made in the middle of fetal trunk.**

REGIONAL/PARTIAL FETOTOMY IN ABNORMAL FETAL POSTURES

Carpal flexion posture

- **Amputation of fetal head, will help in correction of deviation or amputation of one or both forelimbs below knee joint**

Shoulder flexion posture

Amputation of the head or amputation of one or both the forelimbs will facilitate delivery of the fetus.

FETOTOMY

REGIONAL/PARTIAL FETOTOMY IN ABNORMAL FETAL POSTURES

Lateral deviation of head

- **Amputation of forelimb opposite to side of flexion of head, easy correction of deviation. Amputation of head and neck can be alsoperformed.**

Hock flexion posture

- **Amputation of hind limb below hock joint facilitates correction of mal-posture**

Hip flexion Posture

- **Amputation of one or both hind limbs**

Hip-lock condition

- **First cut is given at lumbar region, bisect fetal pelvis.**

Dog sitting posture

Amputation of head and forelimbs or amputation at lumbar region

REGIONAL/PARTIAL FETOTOMY IN ABNORMAL FETAL POSTURES

Mal-posture	Part(s) to be amputated
Carpal flexion posture	Amputation of the head Or Amputation of one or both the forelimbs below knee
Shoulder flexion posture	Amputation of the head Or Amputation of one or both the forelimbs
Lateral head deviation	Amputation of one forelimb opposite to the side of head deviation Or Amputation of the head and neck
Hock flexion posture	Amputation of the hind limb(s) below hock or Amputation of the hind limb
Hip flexion posture	Amputation of one or both the hind limbs
Hip-lock condition	Lumbar division and bisection of pelvis
Dog sitting posture	Either the head and forelimbs are cut Or Lumbar division