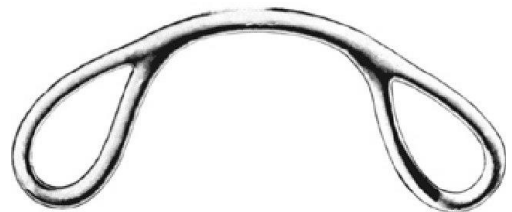


THE INSTRUMENTS NEEDED FOR OBSTETRICAL HELP

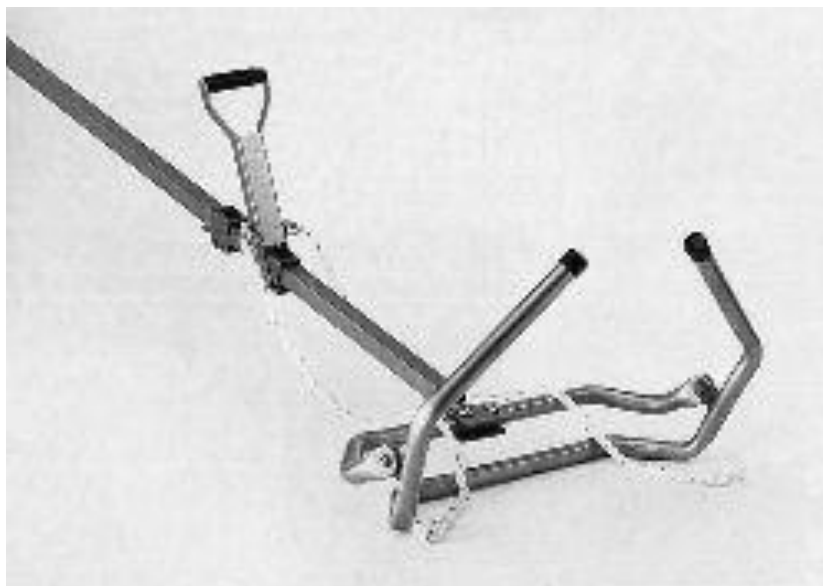
These instruments must be not dangerous either for the mother animal or the foetus, easy to be cleaned and sterilized and to fulfill their purpose.

1- Ropes and chains:

Metal chains could be used for fixation of parts of the foetus. Before being use, both the ropes or chains must be cleaned and disinfected, either by boiling or by being put in a suitable disinfectant solution. These are not only used for pulling off the foetus, but also to correct the posture of the foetus, as in case of lateral deviation of the head, or fixing the head in the middle, between the two limbs, or correcting any flexion in the joints of the limbs.



2- Vink calving jack puller (Calving puller)



3- Hooks :

Different types of hooks, can be used for fixation of parts of the foetus and traction, these may be :

Sharp eye hooks, blunt eye hooks and krey-schoettler hook.



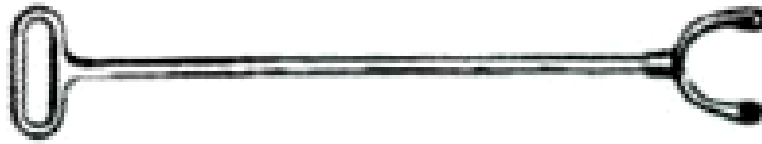
Double hooks (krey –schoettler) : this is a double sharp hook, used for dead foetus.



4- Torsion fork : like cammere's torsion forks, provided with two canvas sleeves to be fixed for each leg of the foetus and a handle for rotating it.



- 5- Torsion hook : like kalsh- schmidt's torsion hook, nearly the same like the torsion fork, but its end is hooked, and it needs a chain to fix the limbs of the foetus.
- 6- Crutch or repeller, like kuhn's used to push and repel the foetus forward.

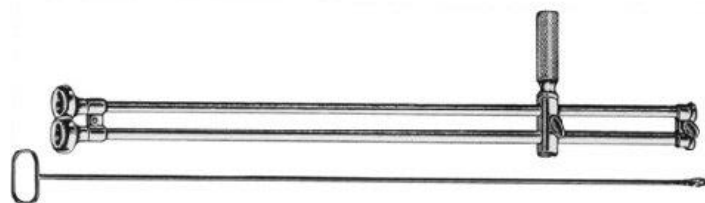


- 7- Knives, guarded knife; like the gunter's ring knife, used to make several incisions in the skin of the foetus.



- 8- Embryotomes or foetotomes : many types are used, mainly, the thygesen's and the goetze's embryotomes. With the embryotomes, we have to used:

The embryotome wire, the threader, the embryotome handles, saw guide or introducer, like the sand's model, Bahlcke or schriever's; and the embryotome brush.



Obstetrical operation

In handling dystocia there are numerous operations or procedures that the veterinarian should be able to perform.

The obstetrical operations may be divided in four major classifications:-

1-Mutation

3-Embryotomy (Foetotomy)

2-Forced traction

4-Caesarean section

1-Mutation

Definition:-

It means the operation by which the foetus is returned to its normal presentation, position & posture by repulsion, rotation, version & extension then adjustment of the extremities.

In uniparous animals the normal parturition occurs with the foetus in anterior or posterior presentation, dorso sacral position & with head, neck & limbs extended.

A- Repulsion (Retropulsion): it consists of

- Pushing of the foetus out of the maternal pelvis or birth canal into the uterus where a space is available for correction of the position & posture of the foetus.
- Epidural anaesthesia is performed for successful repulsion.
- Repulsion is accomplished by operators arm or by crutch repeller.
- For successful repulsion the animal must be in standing position and if recumbent mustn't laying on the sternum (sternal recumbency) that in this position the repulsion is difficult & it is better to lay the animal on its side (lateral recumbency)
- In anterior presentation the crutch repeller is placed between shoulder & chest. While in posterior presentation it is placed in perineal region.

B-Rotation:

- It means turning of the foetus around its longitudinal axis.
- In this case repulsion is accomplished by torsion fork, torsion hook or chains.
- Rotation occurs in case of anterior presentation and dorso iliac position which is corrected by downward & caudal force on the legs. Also in case of anterior presentation & dorso pubic position.

C- Version:

- It is performed in transverse presentation so it means rotation of the foetus around its transverse axis into either anterior or posterior presentation.
- Version is completed by repulsion of one end of the foetus and traction of the other end.
- It is better to rotate the foetus into posterior presentation to avoid the complications of head and neck.

D-Extension and adjustment of the extremities:

- It is performed to correct the abnormal posture due to flexion of one or both limbs or deviation of head and neck.
- This procedure is started by repulsion of the foetus and correction of the flexed extremity
 - In anterior presentation repulsion must be of the proximal parts such as shoulder or chest.
 - In posterior presentation repulsion must be of the distal parts such as buttock, stifle or tarsus.
- Traction on distal portion of the extremity such as the pastern in case of fore limb flexion or lower jaw in case of flexion of head.
- The equipment which are needed for this procedure are crutch repeller for repulsion, ropes & chains for traction.
- In all cases the animal should be in standing position or lay on its side.

****Abnormal presentation: (Transverse & Vertical)**

****Abnormal position:**

- Dorsoiliac.
- Dorsopupic
- Cevaloiliac.

****Abnormal posture:**

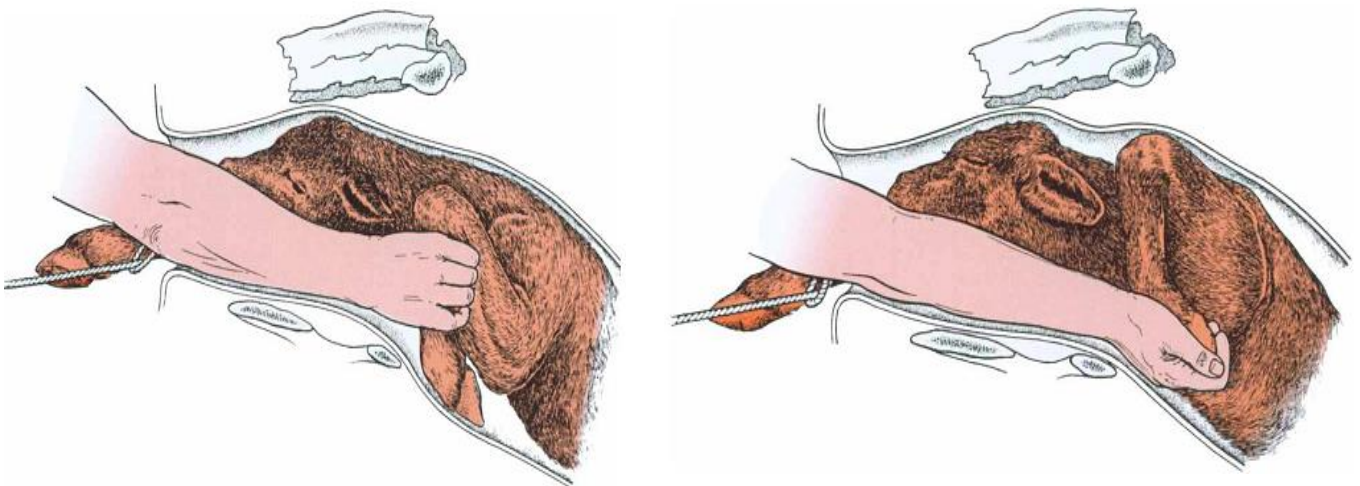
- **Head & neck:**
 - Lateral deviation
 - Downward deviation on head (vertex positon)
 - Downward deviation on head & neck (breast head positon)
- **Forelimb:**
 - Carpal flexion
 - Shoulder flexion
- **Hind limb:**
 - Hock flexion
 - Hip flexion.

CORRECTION OF FAULTY POSTURE, POSETION AND PRESENRATION.

A- CORRECTION OF FAULTY POSTURE:

i. Corrcion of carpal flexion (knee flexion):

- a) Repulsion of fetus.
- b) the obstetrician can take the claws of the flexed limb in palm of his hand and the back of his hand facing the wall of the uterus, use the right hand to correct the knee flexion of the left forelimb, and the left hand in case of the right forelimb.
- c) Outward and upward repulsion of flexed carpus with inward and backward traction of fetal claws.
- d) It is useful to use digital snare to increase power of traction.

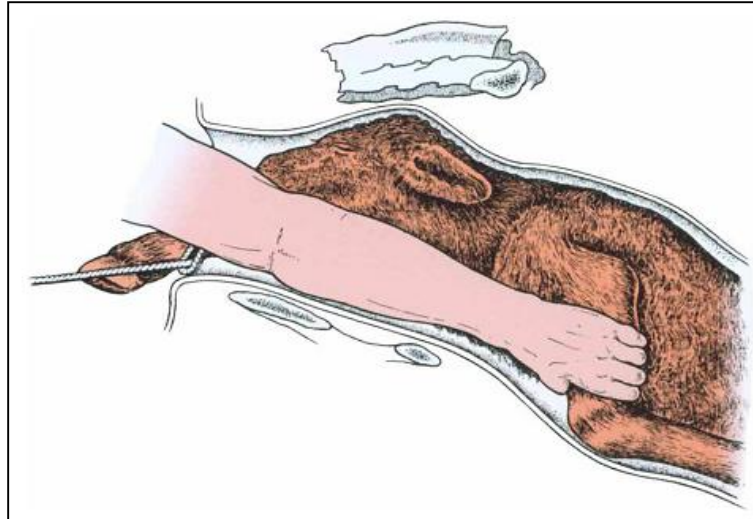


B



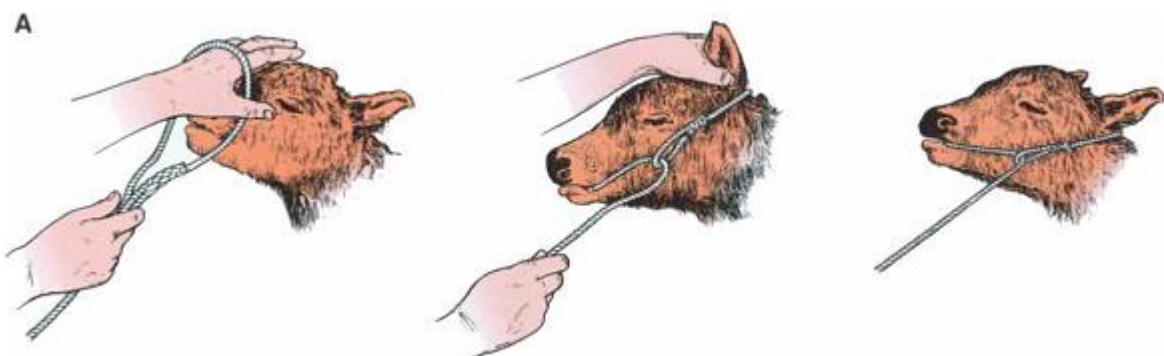
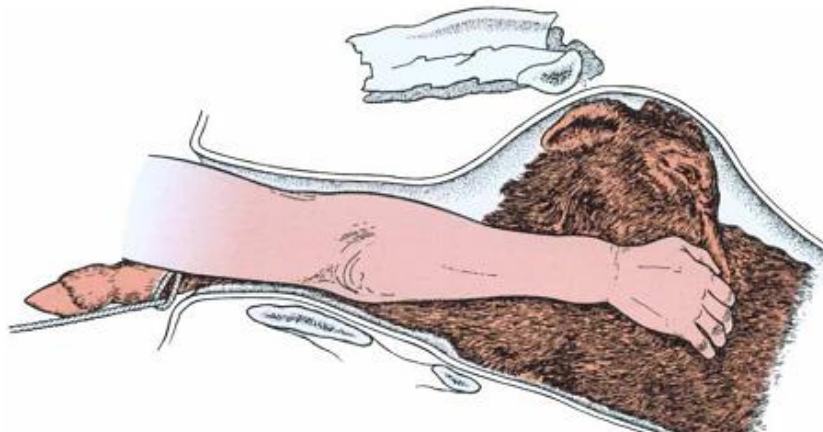
ii. Correction of shoulder flexion:-

- a) First correct the shoulder flexion, to a knee flexion, by taking the forearm of the flexed limb in your hand.
- b) Pulling it gently backward, taking care not to cause any rupture of the uterus.
- c) Correct the knee flexion as mentioned before.



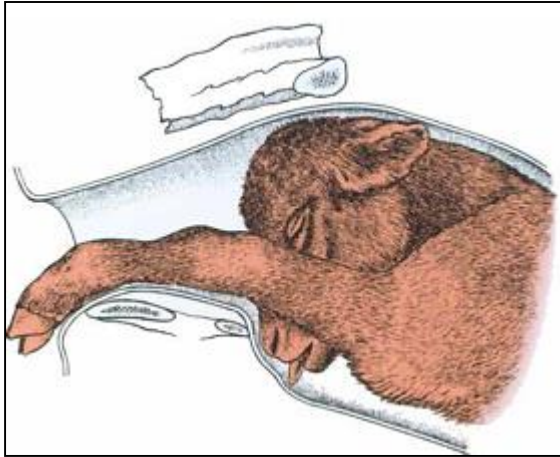
iii. Correction of the deviation of the head and neck (lateral deviation):

- a. Repulsion of fetus.
- b. Inward and backward traction of head after covering muzzle of fetus to protect the soft birth way.
- c. It is useful to use digital snare to increase power of traction.



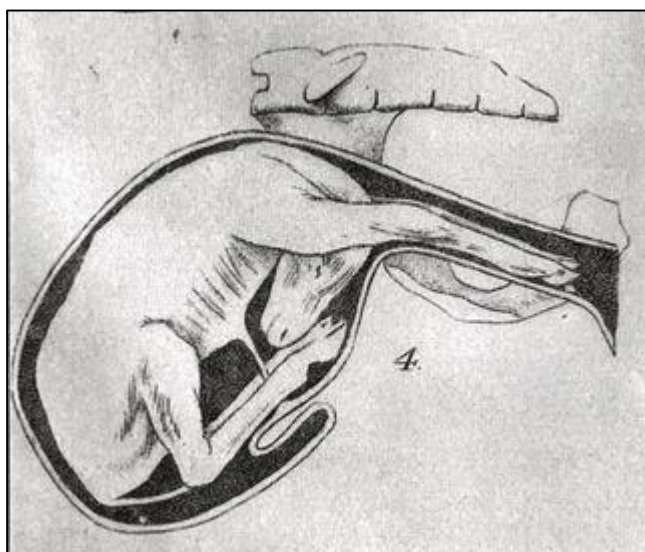
iv. Correction of the deviation of the head and neck (downward deviation)(vertex posture):

- a) Repulsion of fetus.
- b) Upward traction of head head after covering the muzzle.



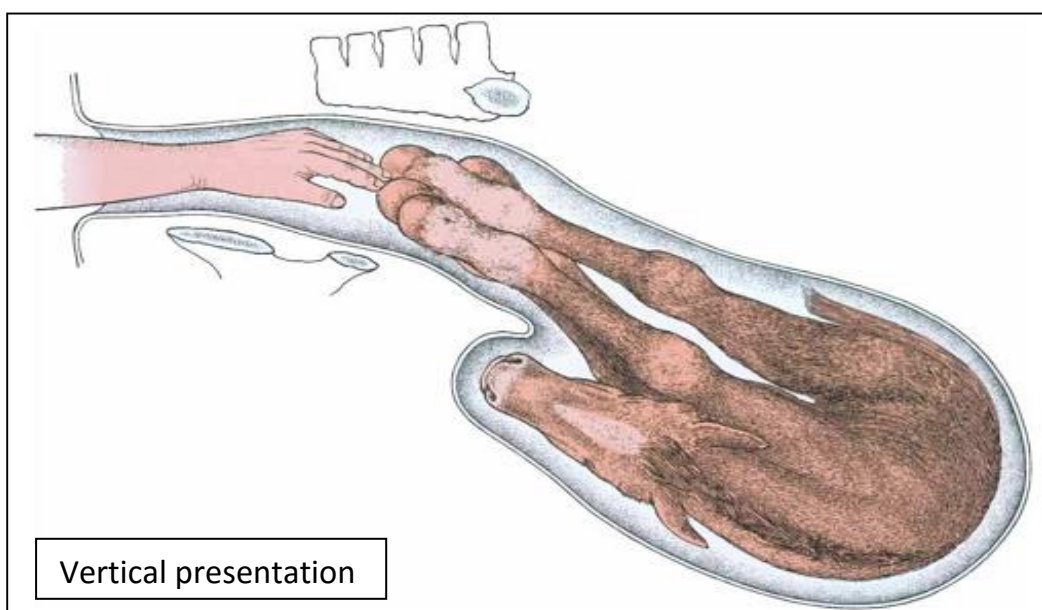
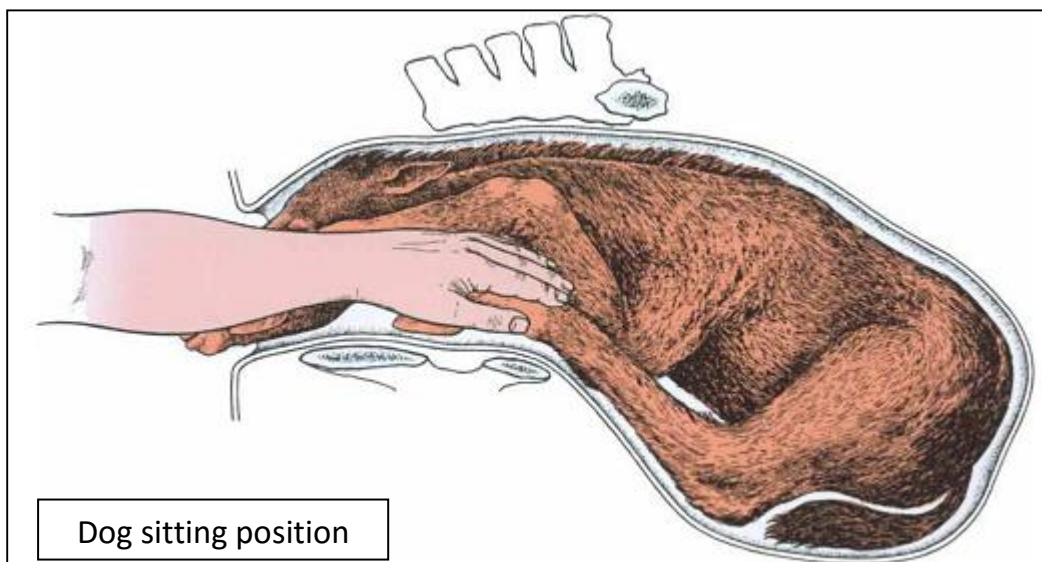
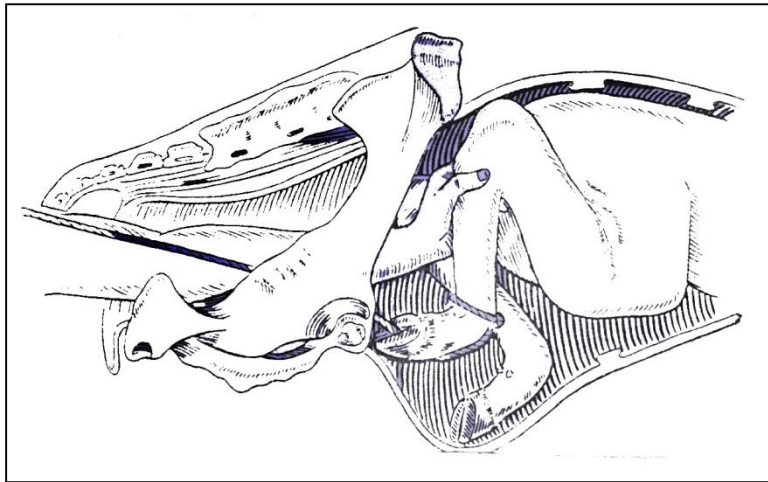
v. Correction of the deviation of the head and neck (e.g downward deviation)(breast head posture):

- a) Repulsion of fetus.
- b) Convert one of extended forelimb into be carpal flexion by repulsion of its claws by inward and forward repulsion after covering claws.
- c) Make inward and backward traction of head in same side of flexed carpus.



vi. Correction of flexion in posterior presentation:

in case of hip flexion, it is corrected to hock flexion; then this hock flexion is corrected under the same rules used in correcting the flexion of the knee joint in the forelimb.



B - CORRECTION OF FAULTY POSITION:

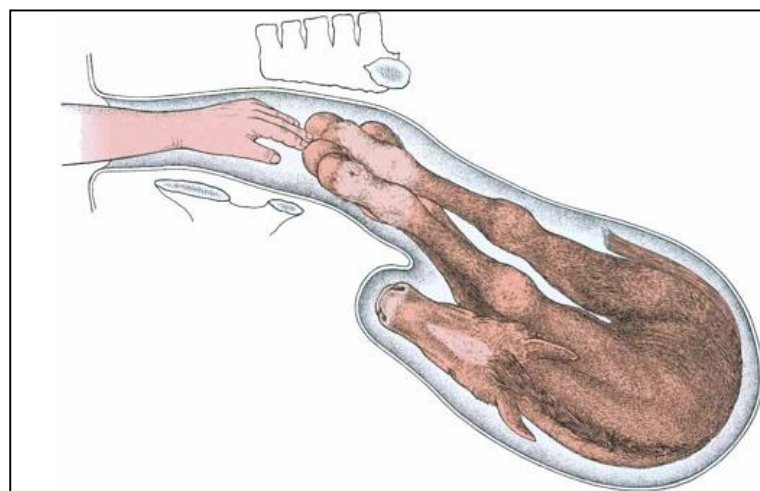
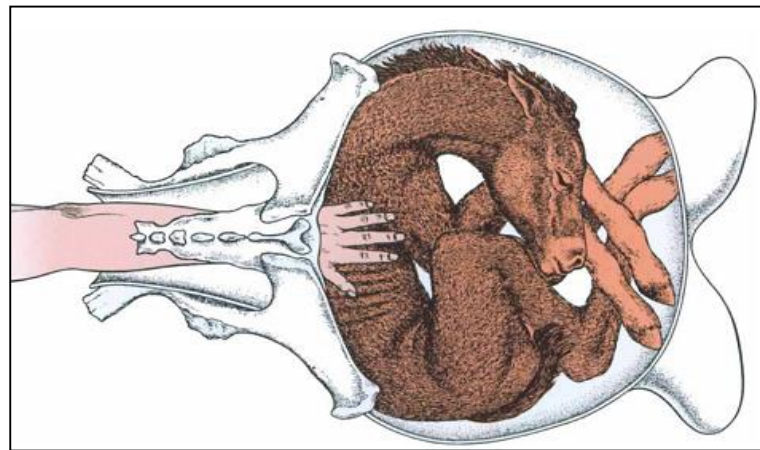
the vertebral column of the foetus should be upwards, parallel to that of the mother animal (dorso- sacral position). It is impossible to pull the foetus outside the birth way unless it is in the dorso –sacral position.

Technique for correction of the faulty position:

- a) The foetus must be swimmied in a large amount of artificial foetal fluids to facilitate its correction (10 liters). The dry foetus sticks to the wall of the uterus.
- b) Turning the foetus while pulling : the limbs of the foetus should be crossed and pulled to the outside. At the same time, the hand of the obstetrician is trying to turn the foetus to the dorso- sacral position. This trial is only possible in case of right of left dorso- iliac positions.
- c) Turning the foetus with the help of a wooden stick: the stick is introduced in between the crossed limbs. The foetus is rotated along its long axis to the dorso –sacral position during pulling.
- d) Rotation of the foetus with the help of cammor's torsion fork and canvas sleeves :fix the canvas sleeve around the extended limb push it forward to reach the region of the forearm introduce the fork, protected by the hand and each branch of it being passed into the corresponding sleeve. Rotation power is exerted by an assistant, turning the wooden rod, fixed into the outer end of the fork. Fixation of the limbs by ropes or chains to the wooden rod of the fork is necessary to help the rotation. Rotation should be assisted by the hands of the operator, by pressing on the body of the foetus in the desirable direction. Using this fork needs great care to avoid rupture of the uterus.

C- CORRECTION OF FAULTY PRESRNTATION (TRANSVERSE PRESENTATION)

- a) The aim in all cases of transverse presentation is to bring the foetus in the longitudinal presentation.
- b) This is only indicated in case of normal sized foetus, which can be pulled out after corrcction.
- c) Epidural analgesia must be applied.
- d) enough quantity of artificial foetal fluids are very necessary, to facilitate the correction,
- e) Correction is done very cautiously, an attempt is made to bring the nearer extremity is pushed forward from the birthway, (two antagonistic forces). In case where both extremities are nearly the posterior extremity first in the pelvic cavity, because the head may form a great obstracle during pulling.
- f) the kuhn's crutch can help in the process of corrcction, but great care should be taken, to avoid rupture of the uterus.
- g) During pulling the foetus should be in the normal, dorso sacral position.



2 - Forced traction

- It means the use of outside force or traction for withdrawal of the foetus through the birth canal .this forced traction is required to compensate the maternal forces.
- Forced traction is indicated for alive and dead foetus in the following cases:
 1. For a live foetus in case of posterior presentation to prevent death of the foetus by hasten the delivery.
 2. In case of uterine inertia for both a live & dead foetus.
 3. When the birth canal is narrow due to fat or any pathological conditions.
 4. In case of large sized foetus.

- **Techniques:**

The used instruments for withdrawal of the foetus are obstetrical ropes & chains for a live foetus and sharp eye hooks & krey schottler hook for dead foetus.

- **For a live foetus :**

- The ropes or chains are fastened around the Pastern, or fastened over the fetlock.
- The ropes are fastened around the lower jaw.
- The ropes can be haltered around the head.

- **For dead foetus:**

- The ropes are used around the neck.
- Sharp eye hooks and krey schottler hook is used on bones of dead foetus.

In forced traction notice the following:

1. Excessive force is dangerous for both foetus and dam.
2. In anterior presentation the traction is applied on three points, two forelimbs and head. While in posterior presentation the traction is applied on two points only, the two hind limbs.
3. The direction of traction is upward to lift the foetus over the pelvic brim and when the head of the foetus pass through the vulva the direction is downward and backward.
4. In case of hip lock: there is no progress after expulsion of fetal thorax , we make rotation of fetus around his long, axis by 45° .