

Kharkov National Medical University

Department of obstetrics and
gynecology №1

Birth injuries. Obstetric operations.



Birth injuries



The birth injuries include damage of the soft tissues of the birth canal during labor: rupture of vulva, vagina, perineum, cervical rupture, diastasis and rupture of the symphysis, breaks of the urethra, bladder and rectum.

Rupture of the vulvar and vaginal mucosa

- are spontaneous and violent (for operative delivery); occur primarily during sexual infantilism, colpitis, fast and rapid delivery, macrosomia;
- clinical manifestation is a bleeding of varying severity at the end of II period, in afterbirth, or the early postpartum period;
- Diagnosis is based on a detailed examination of the external genitalia and the vagina;
- treatment consists of suturing with the separate or continuous sutures, starting at the top corner of the wound.

Perineal ruptures

- There are spontaneous and violent (for obstetric situations, improper management of delivery);
- the clinical course distinguish threatening, began to date and the rupture of the perineum;
- The depth of lesion allocate 3 degrees:
 - I degree - the rupture of the posterior commissure, a small area of the skin of the perineum (less than 2 cm);
 - II degree - damage of the perineal muscles, the muscles of the vagina and perineum;
 - III degree - damage m. levator ani and the wall of the rectum;
- isolated central perineal rupture, in which there are breaks the back wall of the vagina, pelvic floor muscles and the skin of the perineum and the posterior commissure and m. levator ani remain intact.

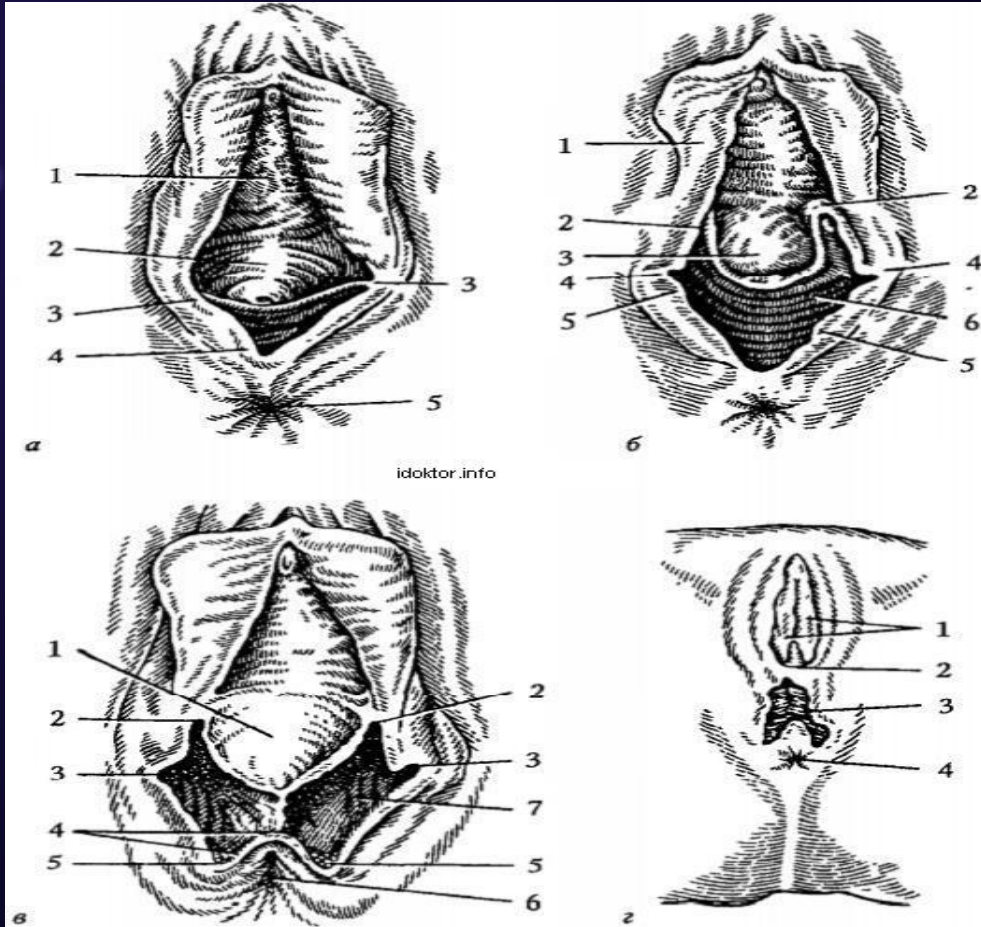
Perineal rupture

a- I degree. rupture of the front wall of the vagina, and 2-back wall; 3-edge torn of posterior commissure, 4-skin of the perineum,5-anus;

b- II-degree. rupture of labia minor, 2-upper corner of the rupture, 3-posterior wall of the vagina, 4- edges of the ruptured posterior commissure, 5-torn skin of the perineum, the 6-torn muscles of the pelvic floor;

c-III degree.(rupture involved rectal sphincter): 1 back wall of the vagina, 2-upper corner of the rupture, and 3-edge torn posterior commissure, 4-rectal mucosa, 5-fiber torn sphincter, 6-anus; 7-torn pelvic floor muscles;

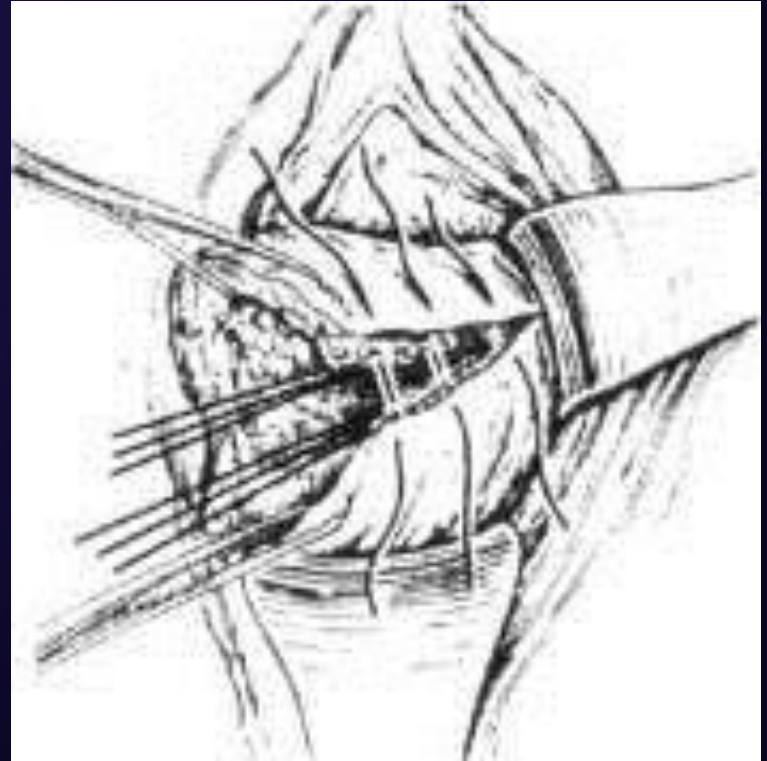
Mr. central rupture of the perineum. 1- small labia, 2- posterior comissure, 3-perineal rupture, 4-anus



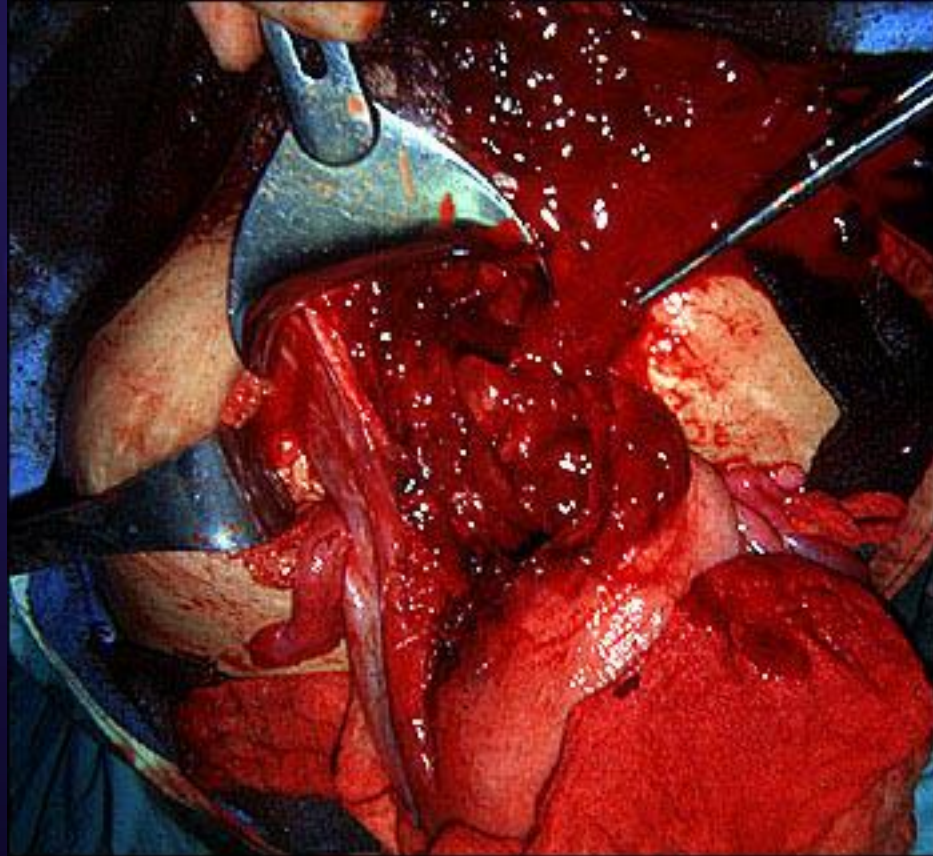
Cervical laceration

- it can be spontaneous and violent (at a force or operative delivery);
- distinguish cervical ruptures of the 3 degrees :
 - I a degree is a rupture no more than 2 cm;
 - II a degree is a rupture more than 2 cm, not arriving at the vaults of vagina;
 - III a degree is a rupture, arriving at the vaults of vagina or passing to the overhead vaginas department.

Rupture of the of the cervix and suture



Rupture of the uterus



Reasons of uterine rupture

- scar after previous caesarean sections, especially in case of attachment of placenta in area of scar;
- infantilism;
- Malformations of the uterus;
- Scarring as a result of abortions;
- complicated flow of previous labors;
- infectious processes.

Hysterorrhexis classificatoin

I. By pathogenesis:

- 1)Spontaneous
- 2)Forced

II. By the clinical course:

- 1)Threatening
- 2)Being done

III. By the injury character:

- 1)Incomplete
- 2)Complete

IV. By the localization:

- 1)Rupture of the lower segment
- 2)Rupture of the body
- 3)Rupture of the uterine bottom

Classification

- in pathogenesis:
 - 1) spontaneous rupture of the uterus:
 - Morphological changes in the myometrium;
 - With mechanical obstruction of the fetus birth;
 - The combination of morphological changes of the myometrium and mechanical obstruction of fetus birth ;
 - 2) violent rupture of the uterus:
 - Pure (at birth vaginal surgery, and the presence of external injury);
 - Mixed (with different combinations of gross interference, morphological changes of the myometrium and mechanical obstruction to the birth of the fetus).

Classification

- by a clinical flow:
 - 1) threatening break of uterus;
 - 2) beginning break of uterus;
 - 3) being done break of uterus.
- by the nature damages:
 - 1) incomplete break of uterus(not getting to abdominal cavity);
 - 2) complete break of uterus (getting to the abdominal region).

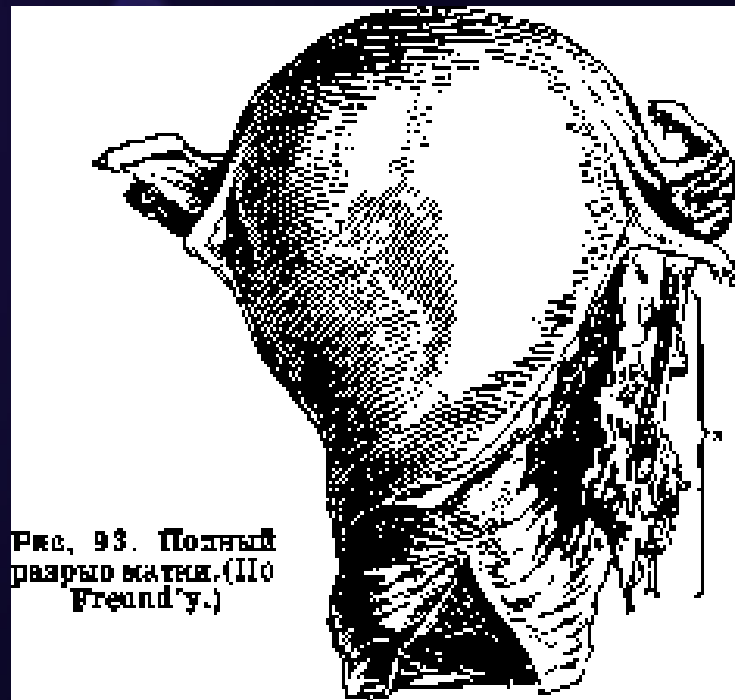


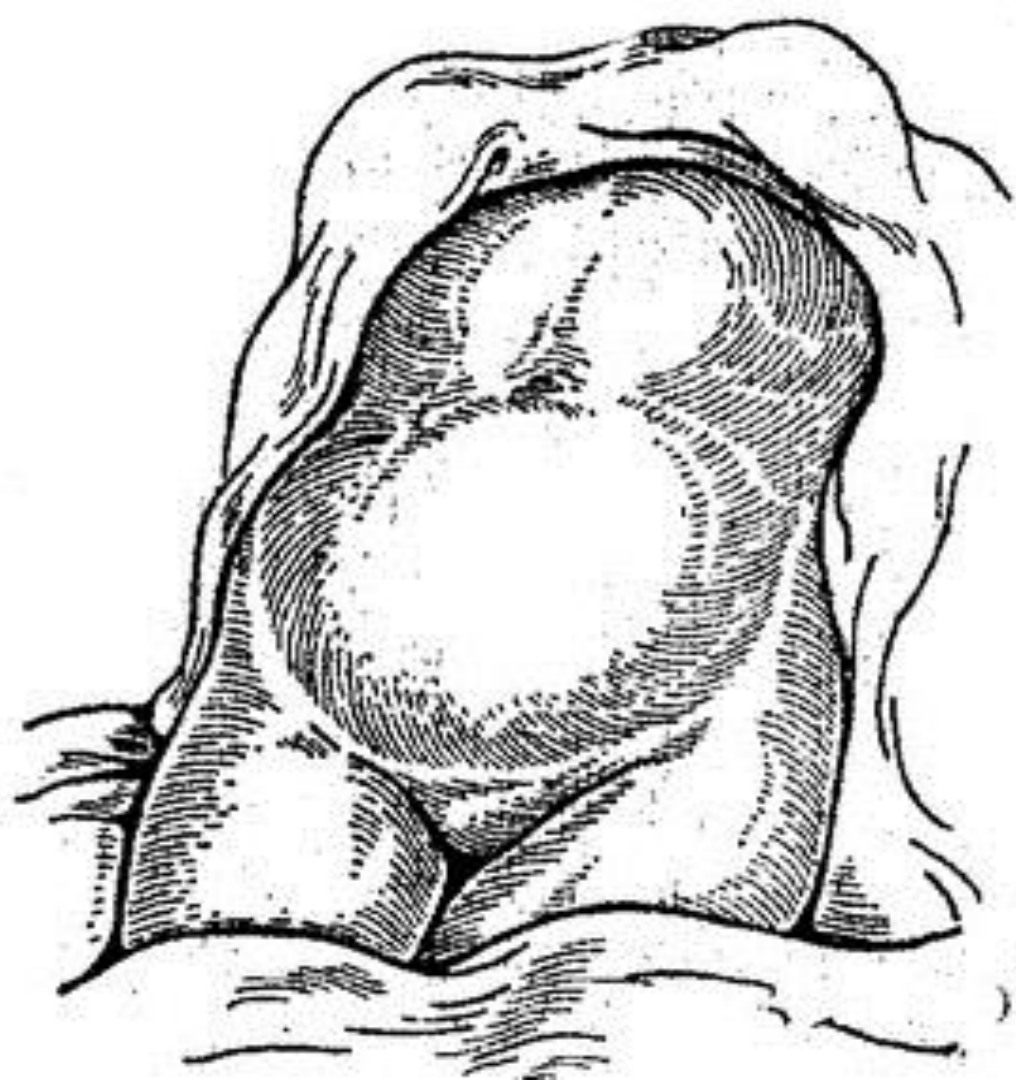
Рис. 93. Полный разрыв матки. (По Freund'у.)

Classification

- by localization:
 - 1) rupture in the lower segment of uterus :
 - it is a rupture of front wall;
 - it is a lateral rupture;
 - it is a rupture of back wall;
 - avulsion of the uterus from the vaginal vaults.
 - 2) rupture in the body of uterus :
 - it is a break of front wall;
 - it is a break of back wall;
 - 3) rupture in the uterine bottom.

Clinical presentation of threatening break of uterus

- Labor-intensive, frequent intense painful contractions, poor relaxation of uterus out of contractions;
- woman in labor is restless, agitated, complaints of feeling of fear, unceasing pain in the abdomen and lower back, not relieved by antispasmodics;
- overstretched uterus, thinned in the lower segment, painful on palpation;
- with full disclosure of the uterine os boundary between the body and the lower uterine segment (ring of contraction) shifts to the level of the navel and takes an oblique position, the uterus becomes as an hourglass;



Clinical presentation of threatening rupture of uterus

- round ligaments of the uterus are strained, painful, fast or missing urination, as a result of compression of the bladder;
- palpation of fetal parts is difficult due to the tension of the uterus;
- disproportion in the fetus and the pelvis of pregnant woman is defined by positive Henkel-Vasten symptom;
- Advancement of the presenting part of the fetus is absent;
- at the head of the fetus is formed labor tumor which gradually fills the small pelvis;
- swelling of the cervix, vagina and vulva;
- premature, early rupture of membranes.

Clinical presentation of threatening rupture of uterus on a scar in a lower uterine segment after surgeries by caesarian section:

- abdominal pain in the scar during pregnancy in the last trimester , and in the beginning of labor - between contractions;
- agonizing spasm against the objectively weak uterine contractions;
- weak or discoordinated labor activity, despite of correction;
- Increased pain in one section of the uterine scar on palpation, thinning;
- delay progress of the fetus descendion with full disclosure of the cervix.

Clinical presentation of beginning rupture of uterus

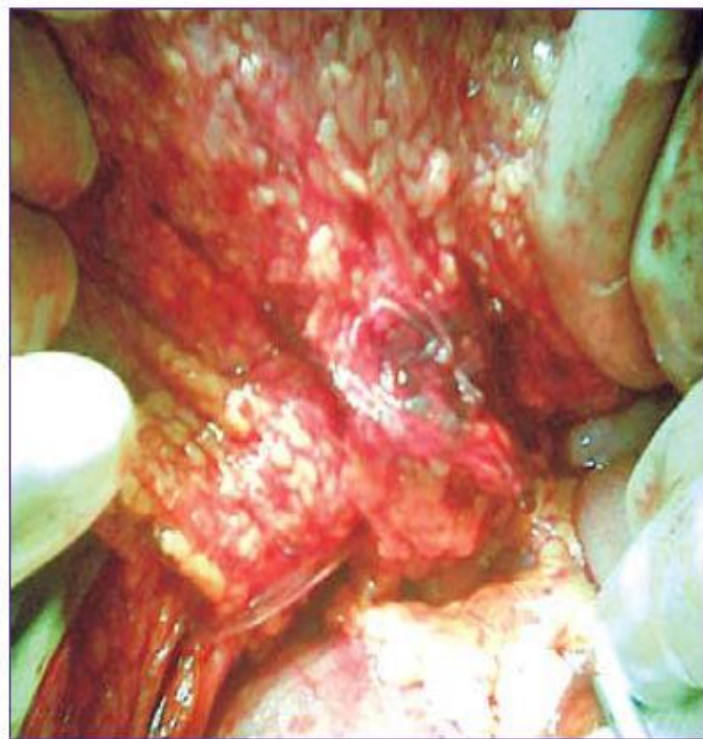
- similar to such at the threatening rupture of uterus, however fights acquire convulsive character, with blood excretions appear from genital tracts, in urine expose blood; there are symptoms of hypoxia of fetus, a rhythm and frequency of palpitation are violated.

Clinical presentation of being done break of uterus :

- the moment of break of uterus is accompanied by being in great sudden knife-like pain;
- a childbirth ceases suddenly;
- contours and form of uterus change, the symptoms of irritation of peritoneum appear;
- a fetus goes out the cavity of uterus and felt under a skin next to an uterus;
- palpitation of fetus have not been heard;
- blood discharges are possible from genital tracts, however mainly bleeding takes place in an abdominal region.



а



б

Рис. 2. Беременность 36 нед. Разрыв матки: а – место разрыва; б – участок отечного сальника, прилегавшего к месту разрыва матки

Basic principles of providing of the first aid at the threatening rupture of uterus

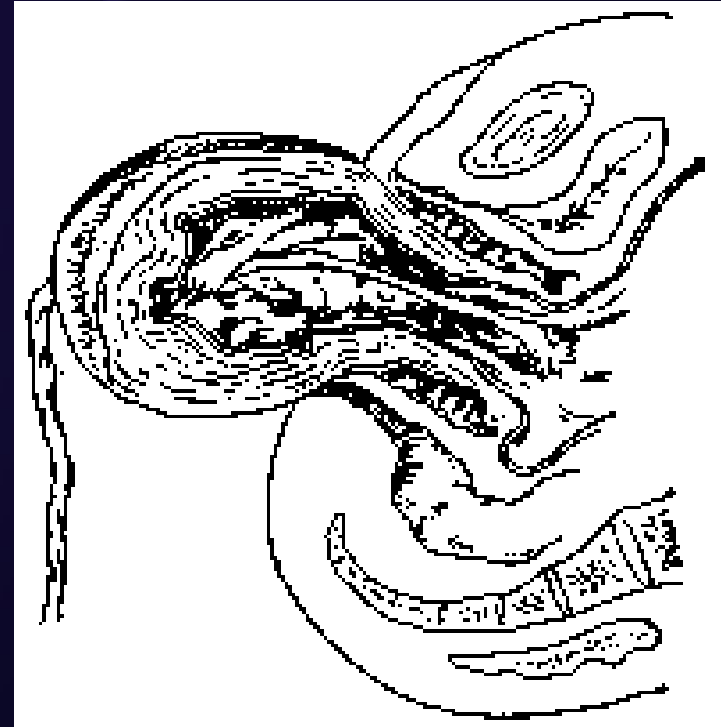
- stopping of childbirth(application of tocolytic and introduction of woman giving birth in anesthesia);
- immediate delivery(at a living fetus- caesarian section, in other cases are embryotomy (destructive operations)).
- contra-indicated: turn of the fetus, applying of obstetric forceps, extraction of fetus for a pelvic end.

Basic principles of providing of the first aid at the being done rupture of uterus

- immediate laparotomy on a background treatment of hemorrhagic shock and valuable anaesthetizing;
- revision of abdominal cavity, removing of dead fetus;
- examination of uterus(especially vascular bunches on either side), determination of volume of damage, localization, depth of rupture, state of lower segment of uterus; thorough inspection of near-by organs;
- a typical operation if it is break of uterus is extirpation.

Inversion of uterus

- rare type of birth trauma;
- it is spontaneous, however more often - violent;
- arises up during medical assistant ,surgical intervention in III stage of labor : pull the umbilical cord at an non-separated placenta, application of manual possibility by Crede-Lazarevich for separation of placenta;
- tactics are reversion of uterus under anesthesia.



Obstetric operations



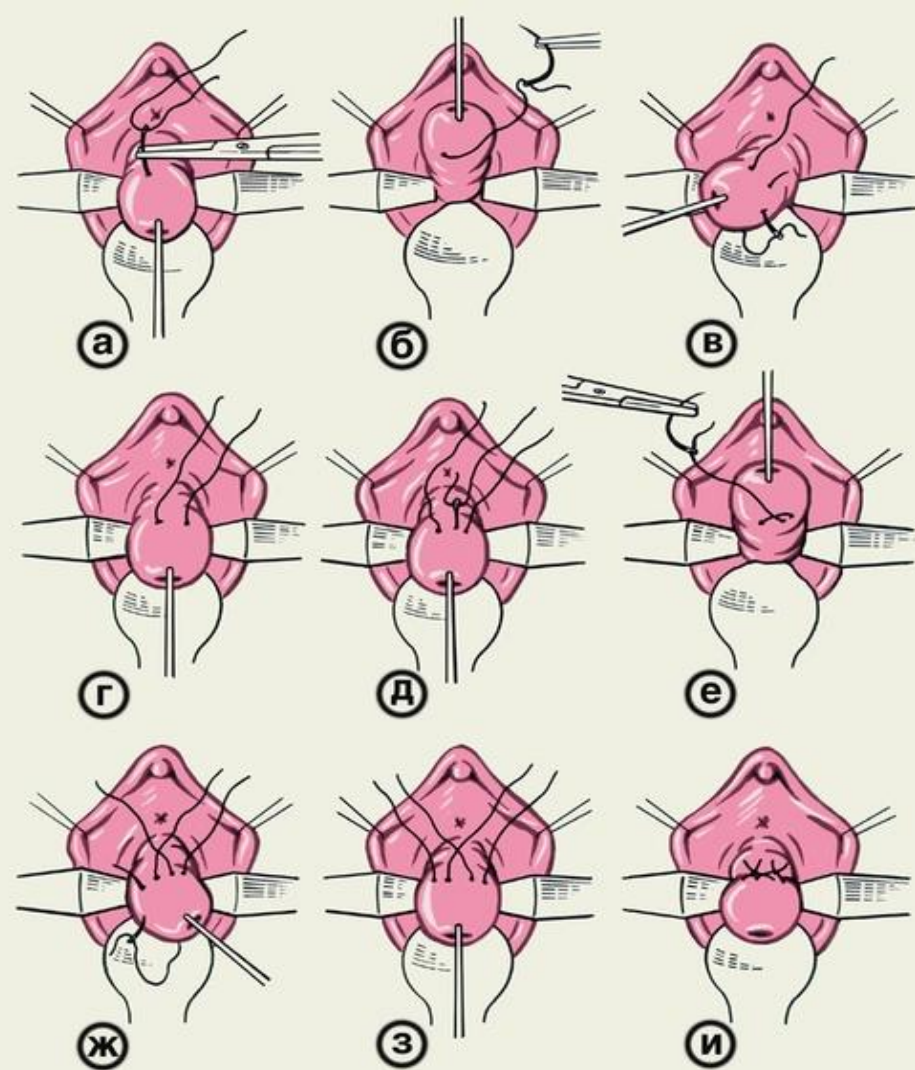
Classification of obstetric operations

- maintenance of pregnancy
- terminating pregnancy
- preparation of birth canal for labor
- correction of fetus position
- extraction of fetus
- removing of placenta and its parts
- destructive operations
- suture of soft tissues of birth canal

Operations for maintenance of pregnancy

Operations for maintenance of pregnancy
envisage strengthening of cervix at the cervical-
isthmic insufficiency

Schematic representation of the operation imposing U-shaped stitches in the cervix and the method Liubimova Mammadaliyeva: a-needle insertion into the cervix to the right of its center line (the cervix is drawn down), b-needle through the thickness of the cervix displayed on the back of the vaginal vault (the cervix is drawn up); c- the needle-holding from the side of the vaginal vault on the left through the thickness of the cervix in front of the vaginal vault (cervix denied the right); d- position of the free ends of threads after the imposition of the first U-shaped seam, e-inserting the needle the cervix left of the center line, f-needle injected into the back of the vaginal vault: g- hold the needle from the right side of the vagina through the cervix into the thickness of the front of the vaginal vault; h-position of the free ends of threads after the imposition of the second U-shaped seamless; i - free-ends of the threads are tight and knotted at the front of the vaginal vault.



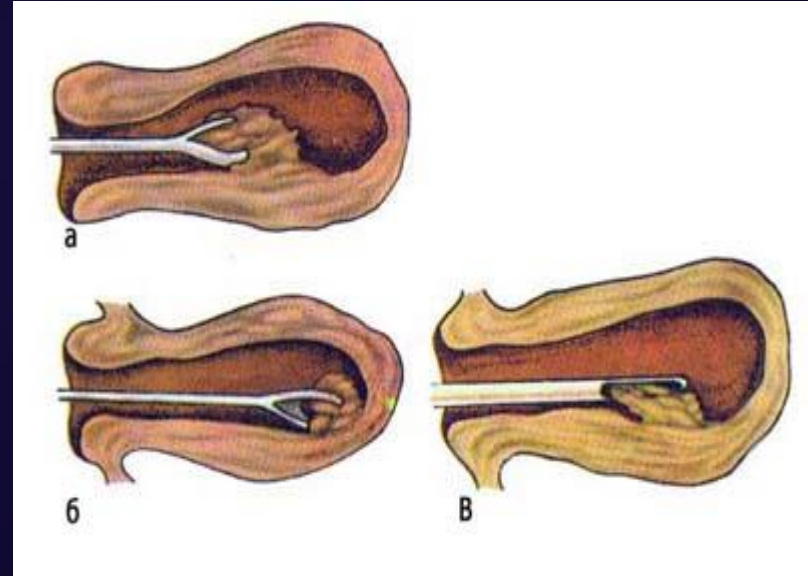
Operations for terminating pregnancy

1. In the early stages of pregnancy:

- ✓ Vacuum excochleation;
- ✓ vacuum aspiration;
- ✓ instrumental removal of the ovum;
- ✓ medical abortion.

2. In the late terms of pregnancy :

- ✓ Intraamnion introduction of solution with subsequent stimulation of retractive activity of uterus;
- ✓ mechanical stimulation.



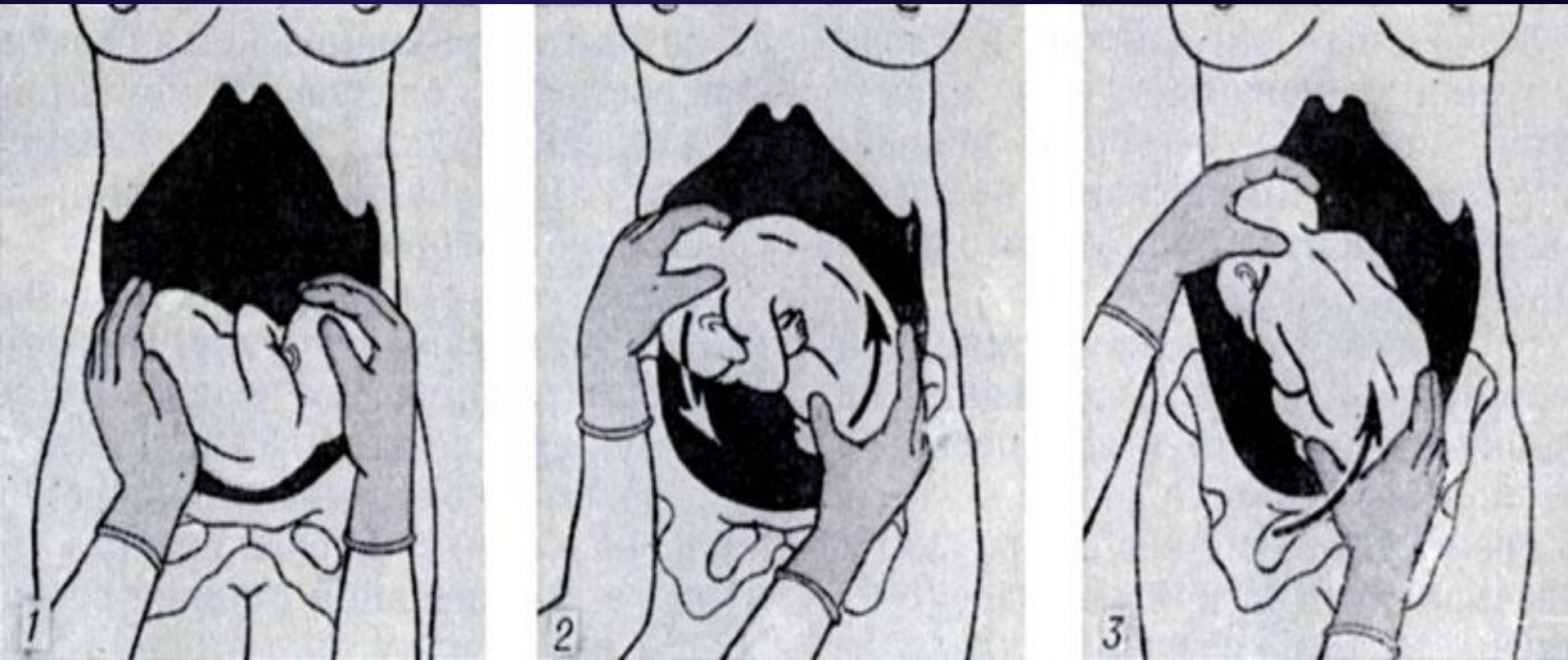
OPERATION OF ARTIFICIAL ABORTION:

A - the destruction and scraping of the ovum by curette;

B - the destruction and removal of the ovum with aborttsang.

C - the operation of abortion by vacuum aspiration of the ovum.

Obstetric turn



Obstetric turn

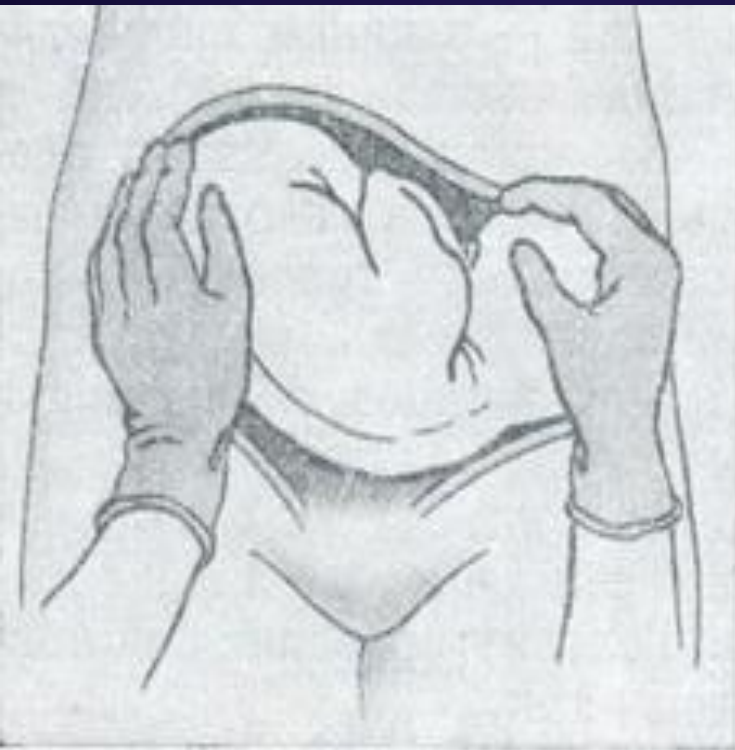


Рис. 1.

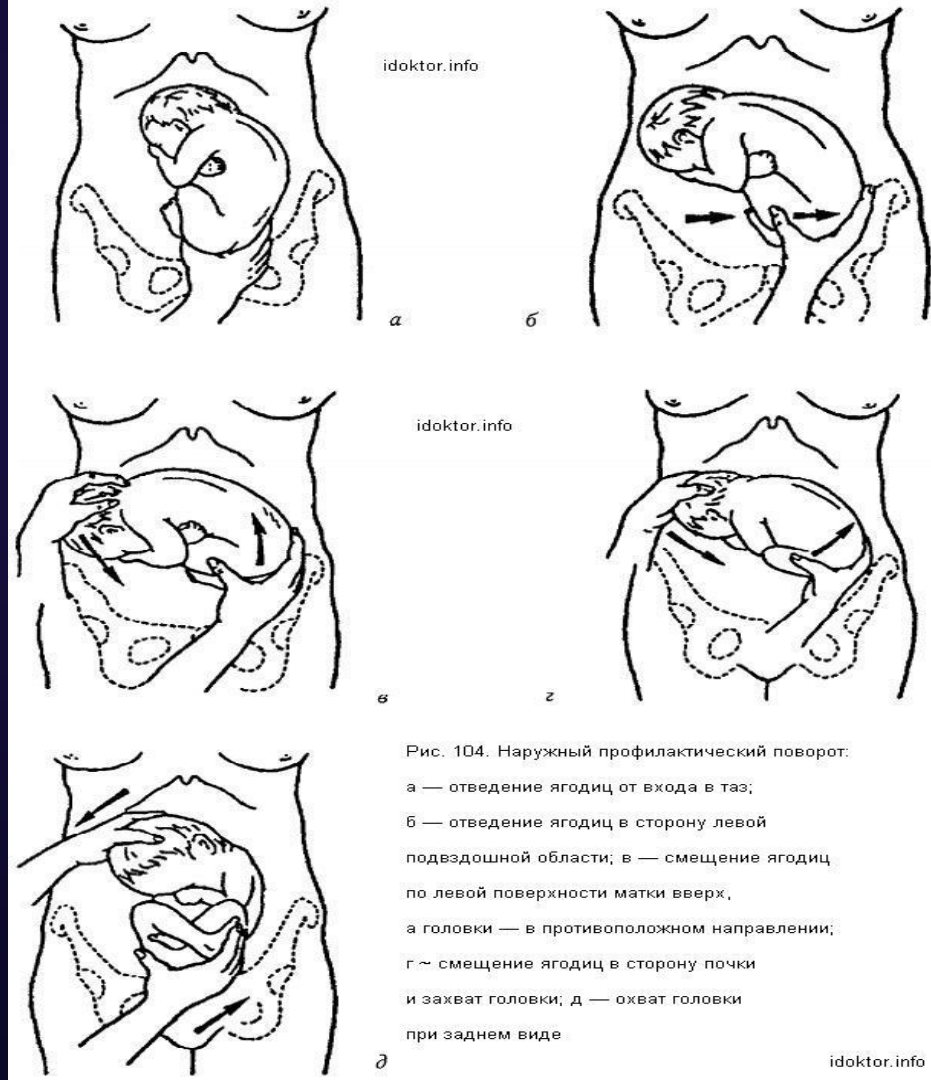


Рис. 2.



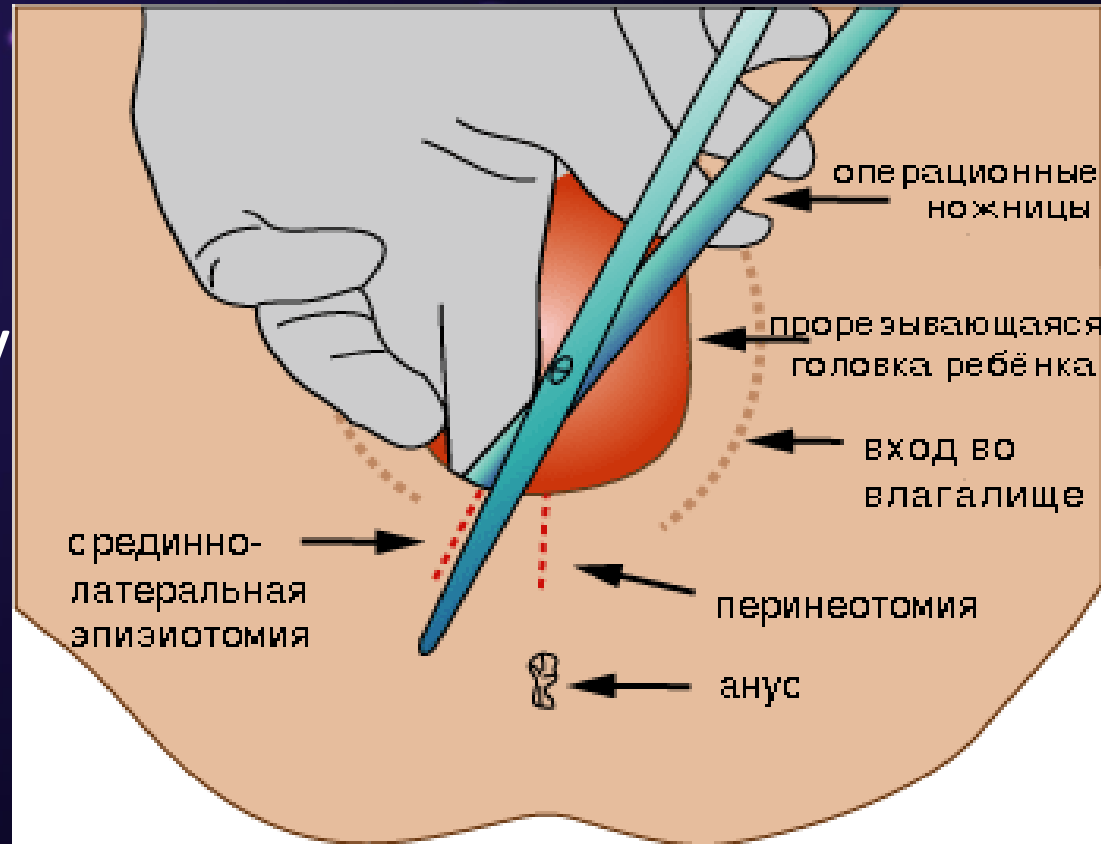
Рис. 3.

- External prophylactic obstetric turn



Operations for preparation of birth canal

- ✓ Episiotomy
- ✓ Perineotomy
- ✓ Hystero-cervicotomy
- ✓ Amniotomy



Operations for delivery

1. Delivery by an abdominal way:

- ✓ Caesarian section

2. Delivery through birth canal:

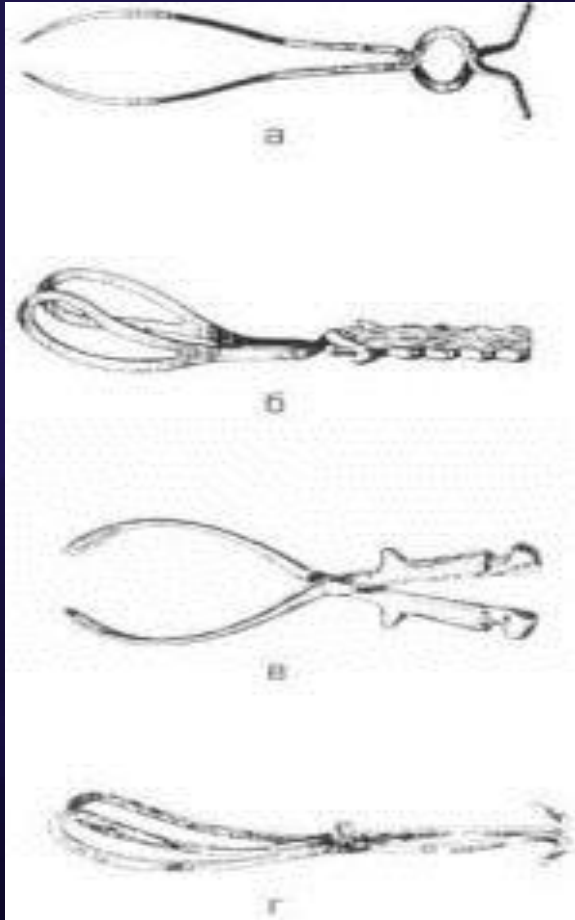
- ✓ Applying of obstetric forceps

- ✓ Vacuum-extraction

- ✓ Embryotomy (Destructive operations)

- ✓ Extraction of fetus for a pelvic end

Obstetric forceps



Testimonies for applying of obstetric forceps

- from the side of woman giving birth:
 - ✓ it is severe pre-eclampsia or eclampsia;
 - ✓ it is the premature detachment of the normally located placenta;
 - ✓ Endometritis in labor;
 - ✓ it is a weakness of childbirth in II period of labor;
 - ✓ it is severe extragenital pathology, requiring reduction of II of period of labor;
- from the side of fetus:
 - ✓ it is a fetal distress.

Conditions for forceps delivery

- alive fetus;
- full dilatation of the cervix;
- the absence of amniotic sac;
- the fetal head is correspond to the size of mothers pelvis;
- the location of the head in the pelvic cavity or in the plane of the pelvis outlet.

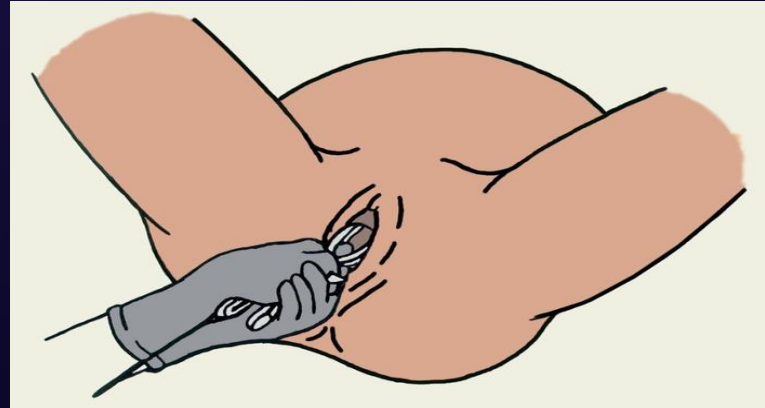
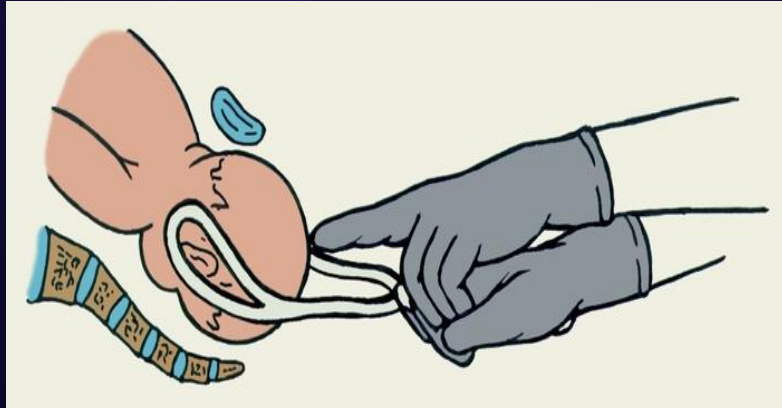
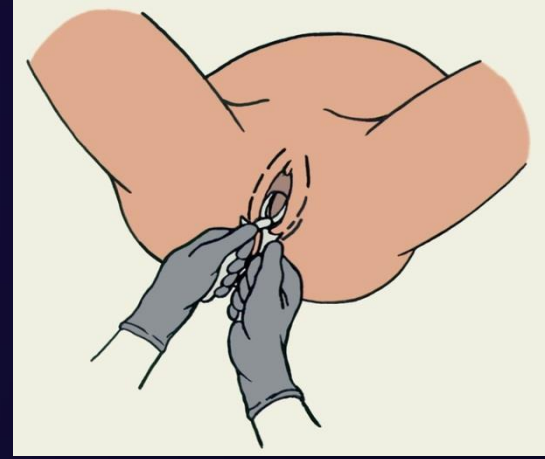
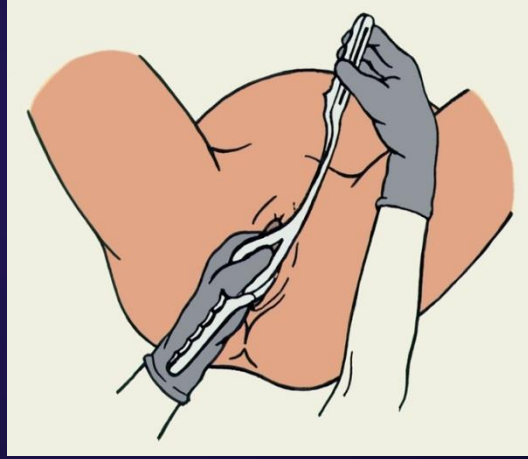
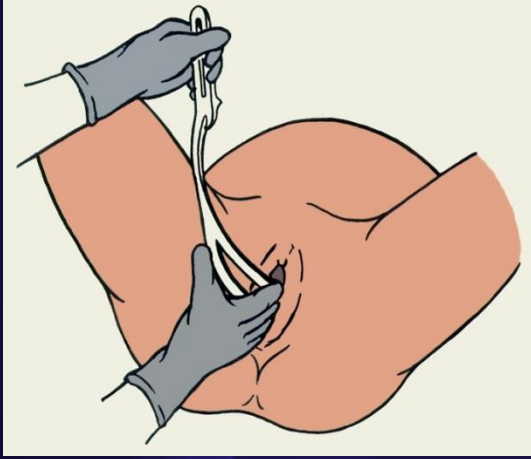
Technique of the forceps

- Introduction of the blades of forceps;
- Forceps locking;
- Trial traction;
- extraction of the fetus by tractions;
- removal of the forceps.

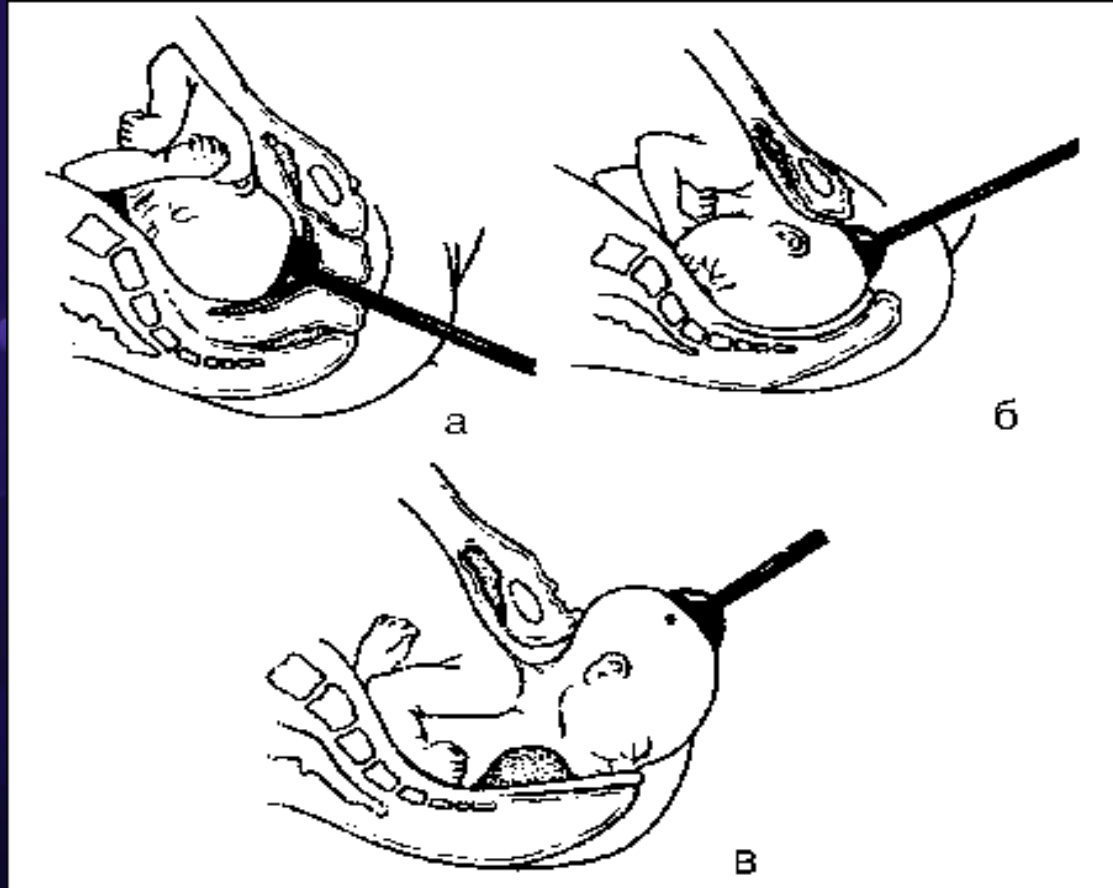
The triple rule

- The first triple rule-"three to the left – three to the right". The left blade is the first to introduce , with the left hand into the left part of the pelvis. The right blade is the second to introduce, with the right hand into the right part of the pelvis
- II rule - "three axes": when the forceps are applied , three axis must coincide- the longitudinal axis of the pelvis, head, forceps, the introduction of forceps should be directed with tips up, the spoons should be placed in the biparietal way, the guiding point must be in one plane with the lock part of forceps;
- III rule of three - "three positions - three traction."

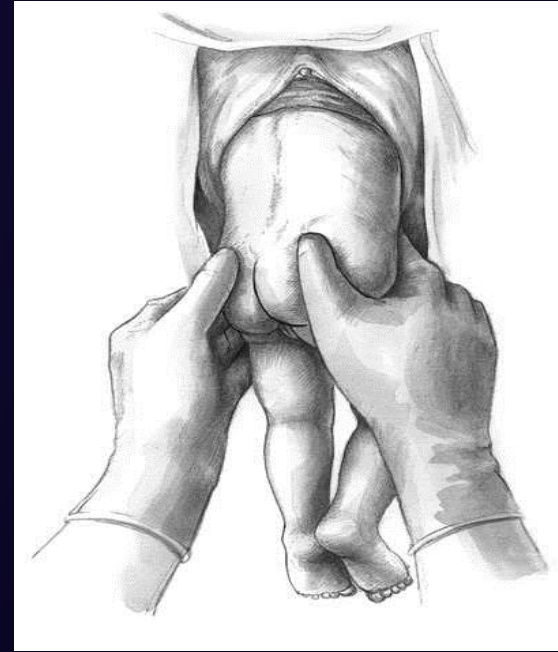
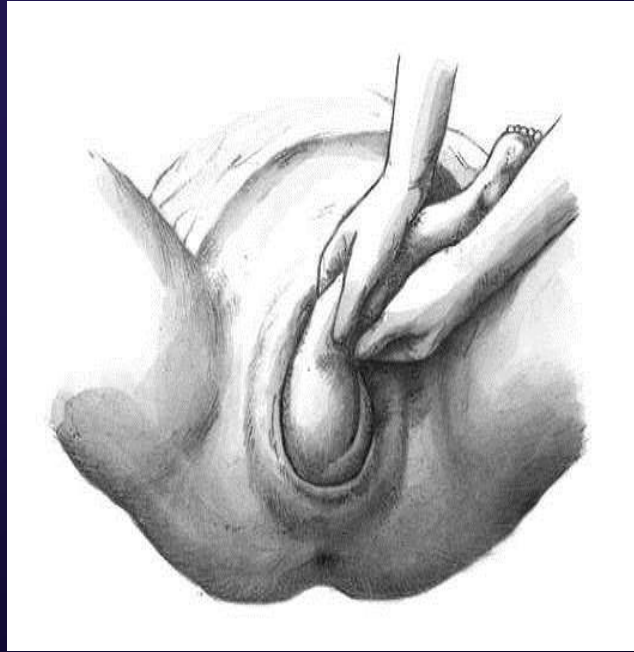
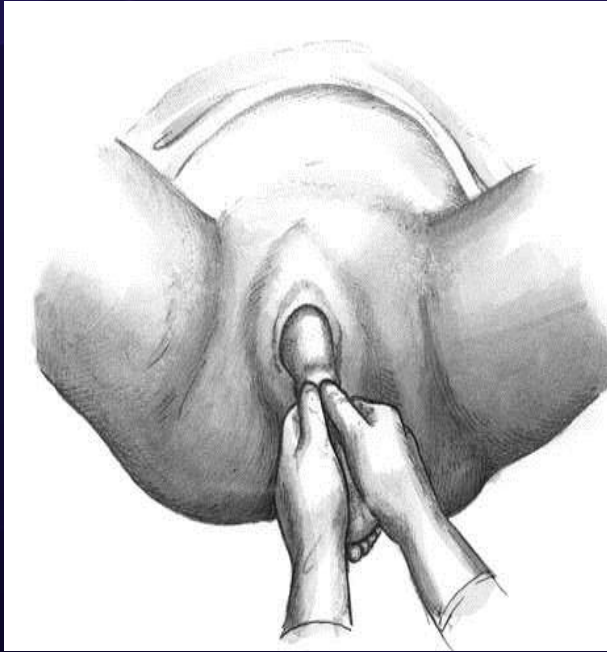
Forceps



Vacuum extraction of the fetus



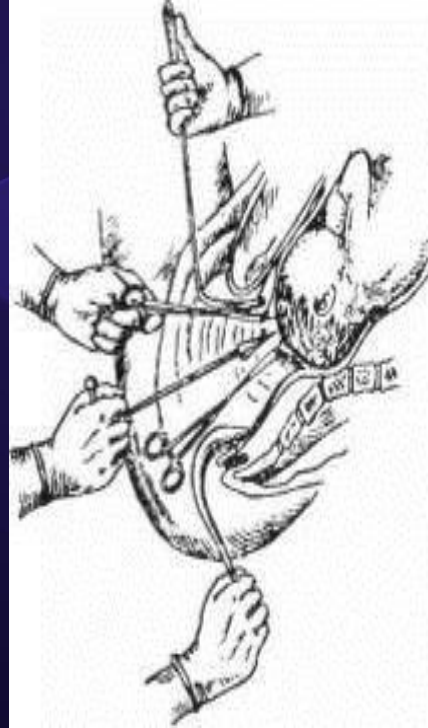
Extraction of the fetus by the pelvic end



Embryotomy



cleydotomy



perforation of the head

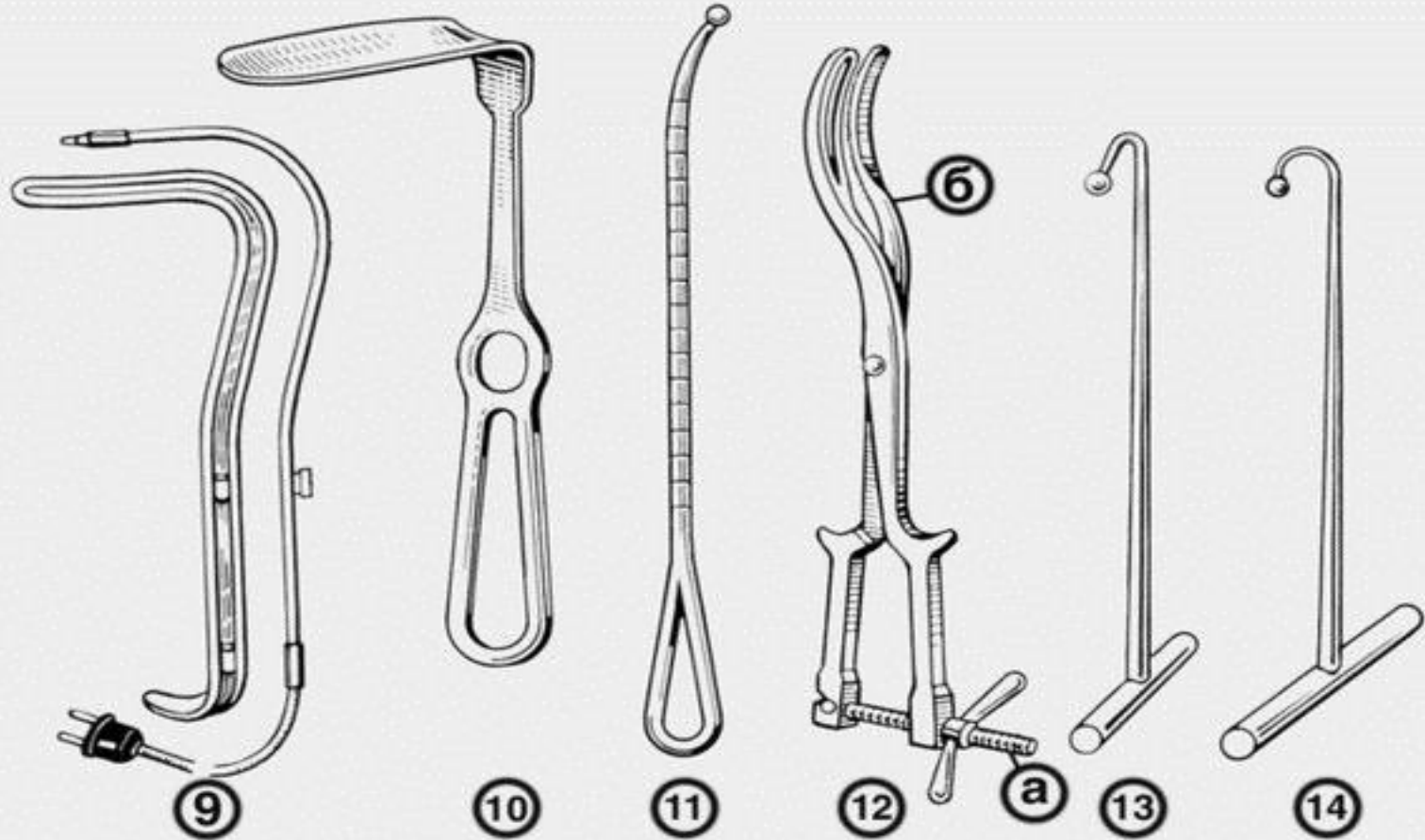


cranioclasia

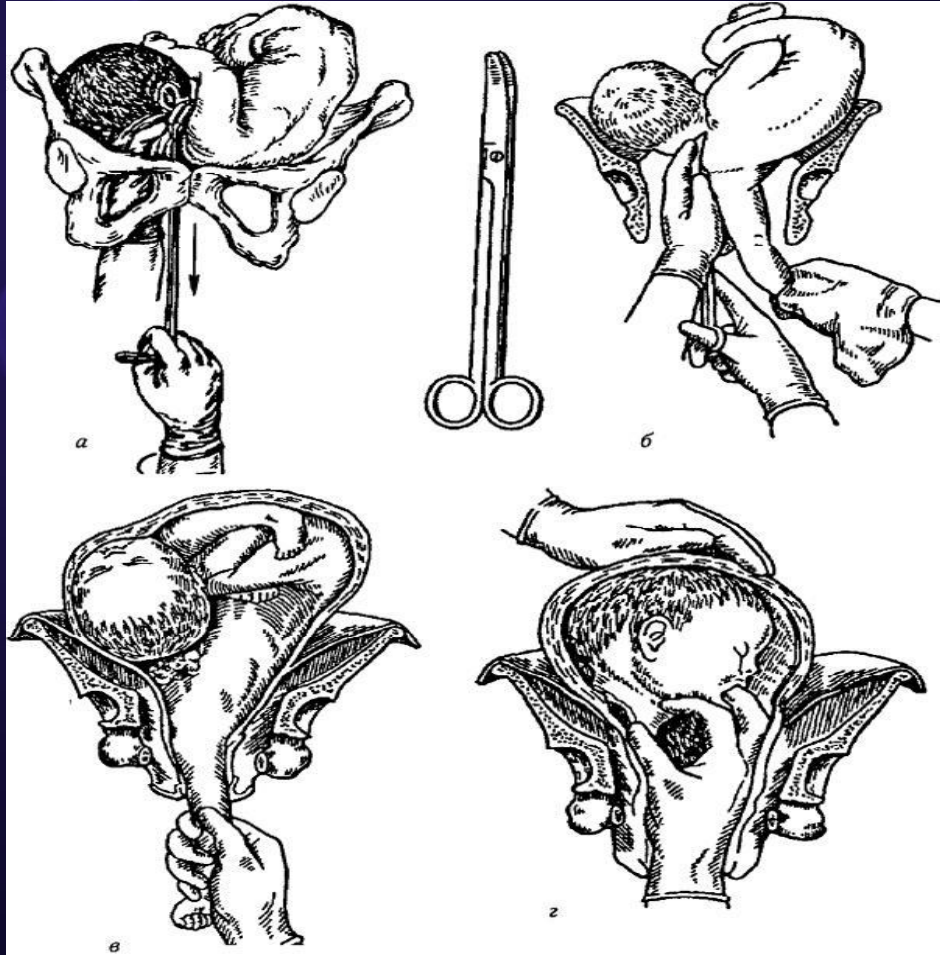


Perforation of
subsequent head

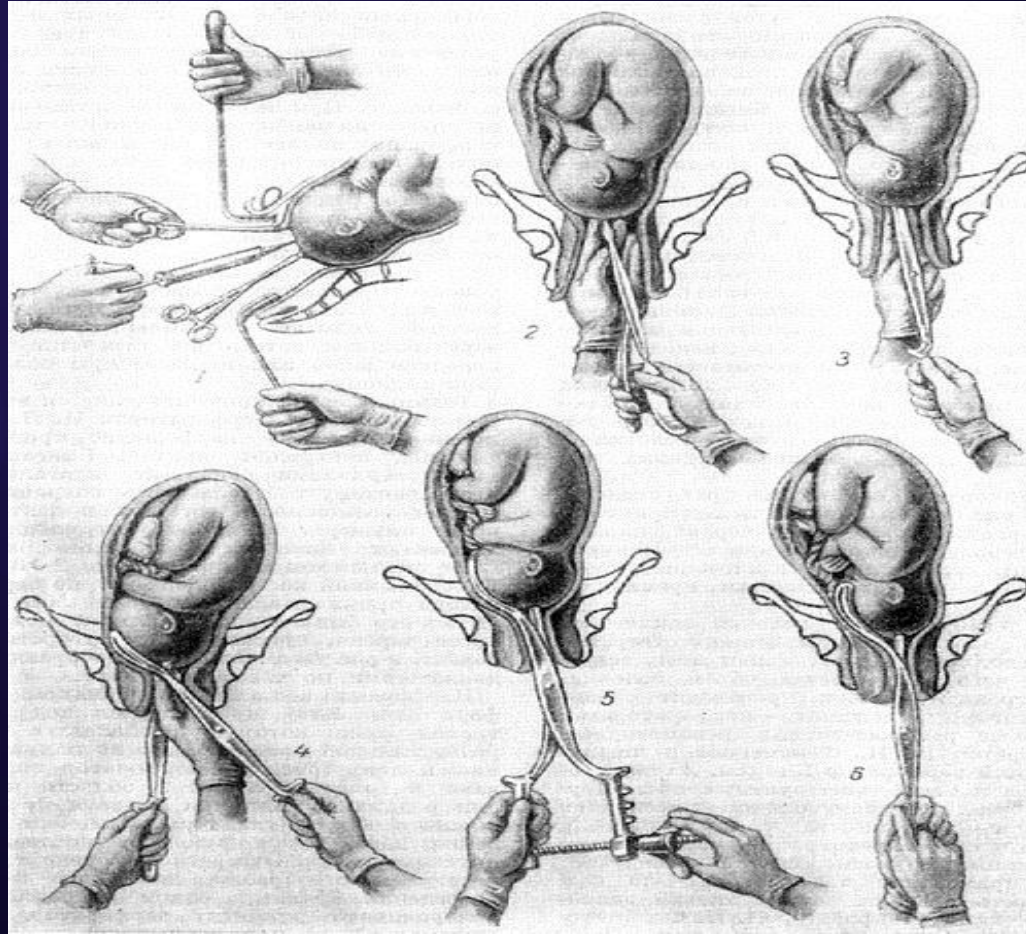
Tools



Decapitation



Craniotomy



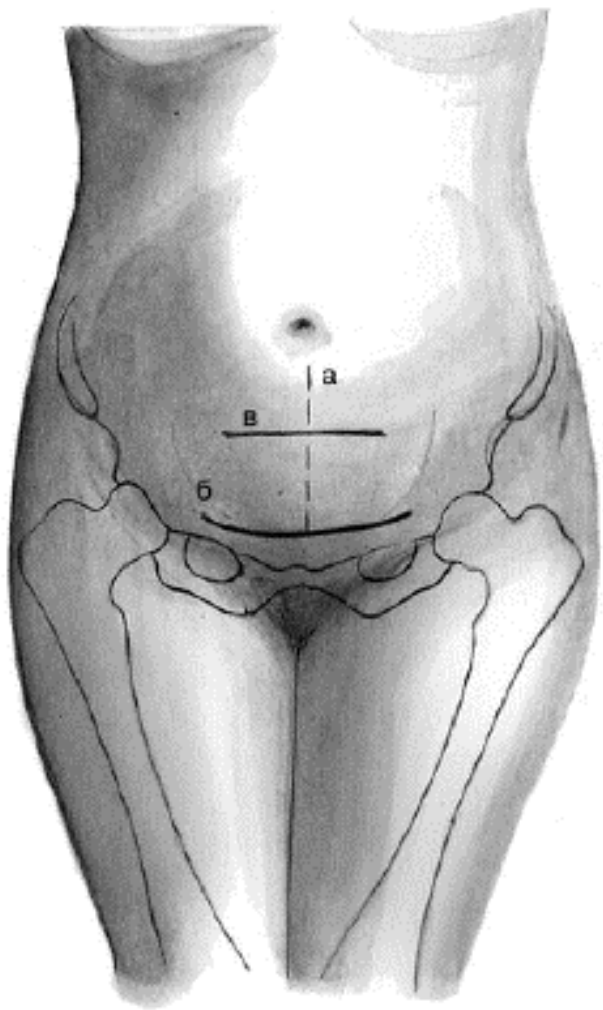
Methods for abdominal surgery CS

- intraperitoneal:
 - Corporal;
 - In the lower uterine segment cross-sectional view;
- CS in the lower segment of the uterus with a temporary isolation of the abdominal cavity;
- Stark method;
- Extraperitoneal CS.

- Selection of a particular method of operation is determined by the obstetric situation, the state of the pregnant woman, fetus, qualified surgeon.
- During the operation of the CS priority is given to the method of surgery by opening the uterus with cross-section in the lower

Preparation for surgery

- Treatment of vagina by antiseptic substances.
- The position of pregnant on the operating table for the prevention of the inferior vena cava syndrome: the operating table is tilted slightly to the left or cushion (folded sheet) under the woman's lower back (right).
- Mobilization of the vein and the establishment of an intravenous infusion of blood substitutes.
- Excretion of urine by catheter. At reoperation, with anticipation of a possible expansion of surgical intervention - the establishment of a permanent catheter.
- Scrubbing the surgical team (according to the order of MLO Ukraine from 10.02.2003 № 59).
- Processing of the surgical field (according to the order of MOH of Ukraine № 59 dated 10.02.2003).

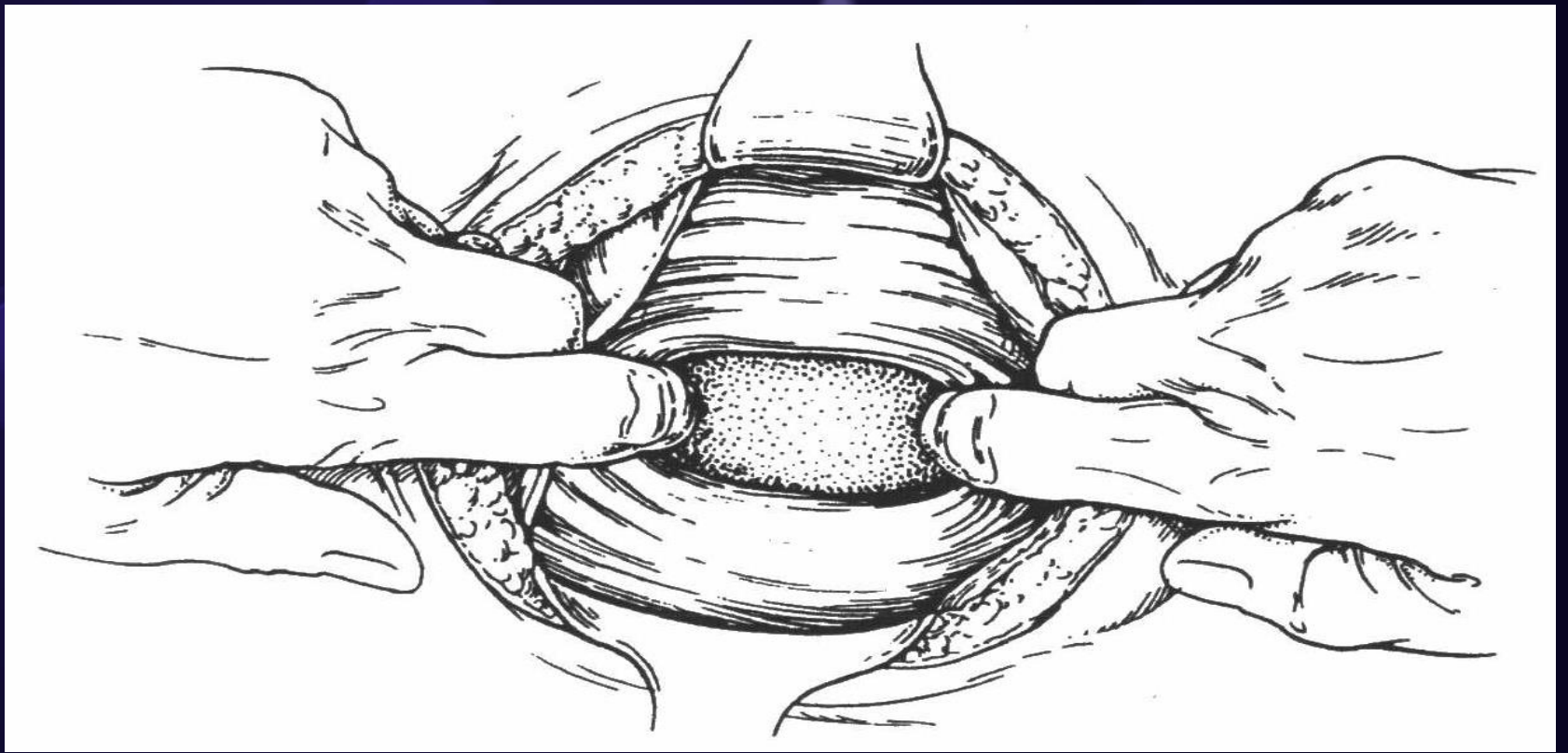


Methods for dissecting the anterior abdominal wall:

- a. Low segment incision
- b. Pfannenstiel incision
- c. Incision by Joel-Cohen

Gusakov Method : scalpel conduct a cross-section incision of the uterus length of 3 cm, the index fingers of both hands introduced in the incision and extend the cut by blunt way, gently stretching it up and in both directions (up to 10-12 cm in length).

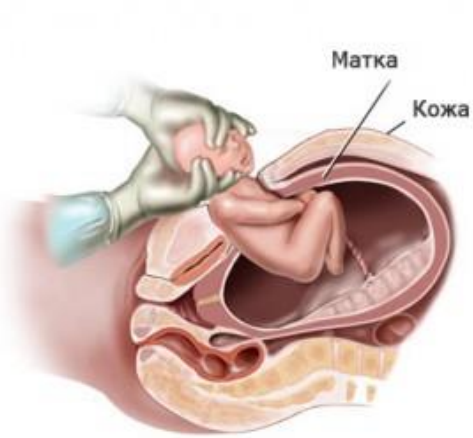




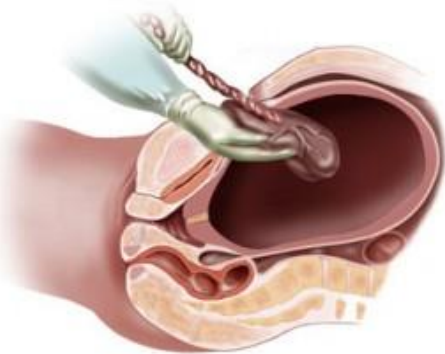
Way to extend the incision of the lower uterine segment with the fingers (Gusakov)



1. Делается надрез в брюшной полости, а после этого разрезается матка



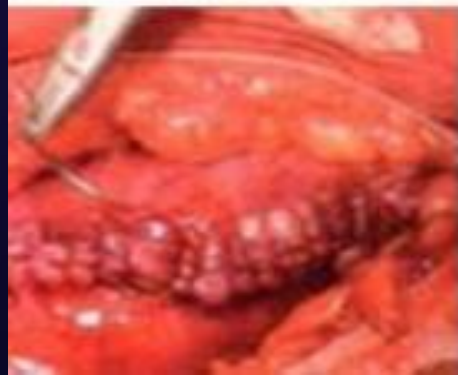
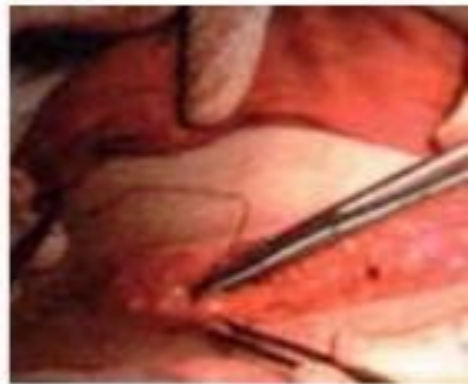
2. Извлекается ребенок



3. Извлекается плацента

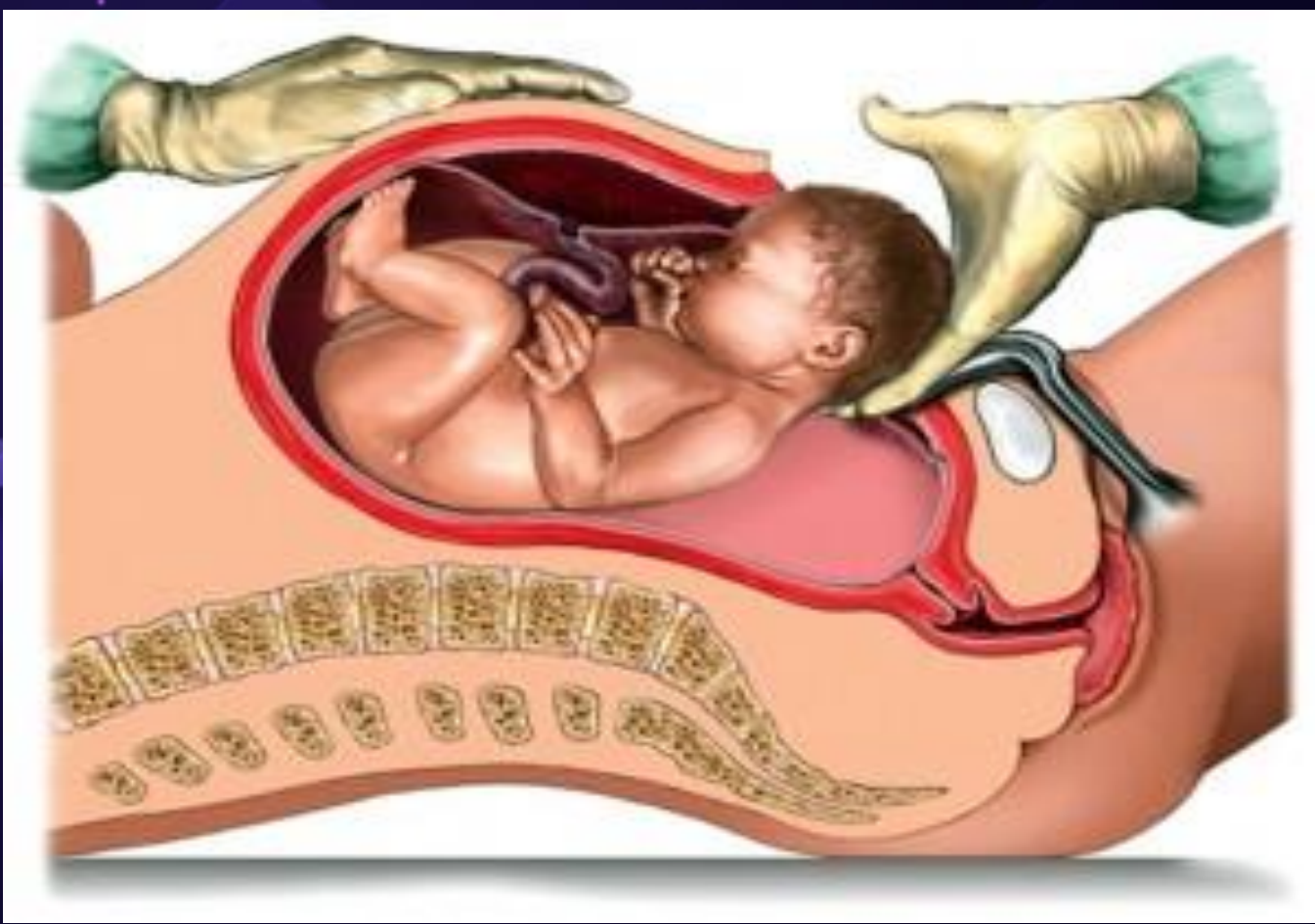


4. Разрезы в матке и брюшной полости закрываются швами

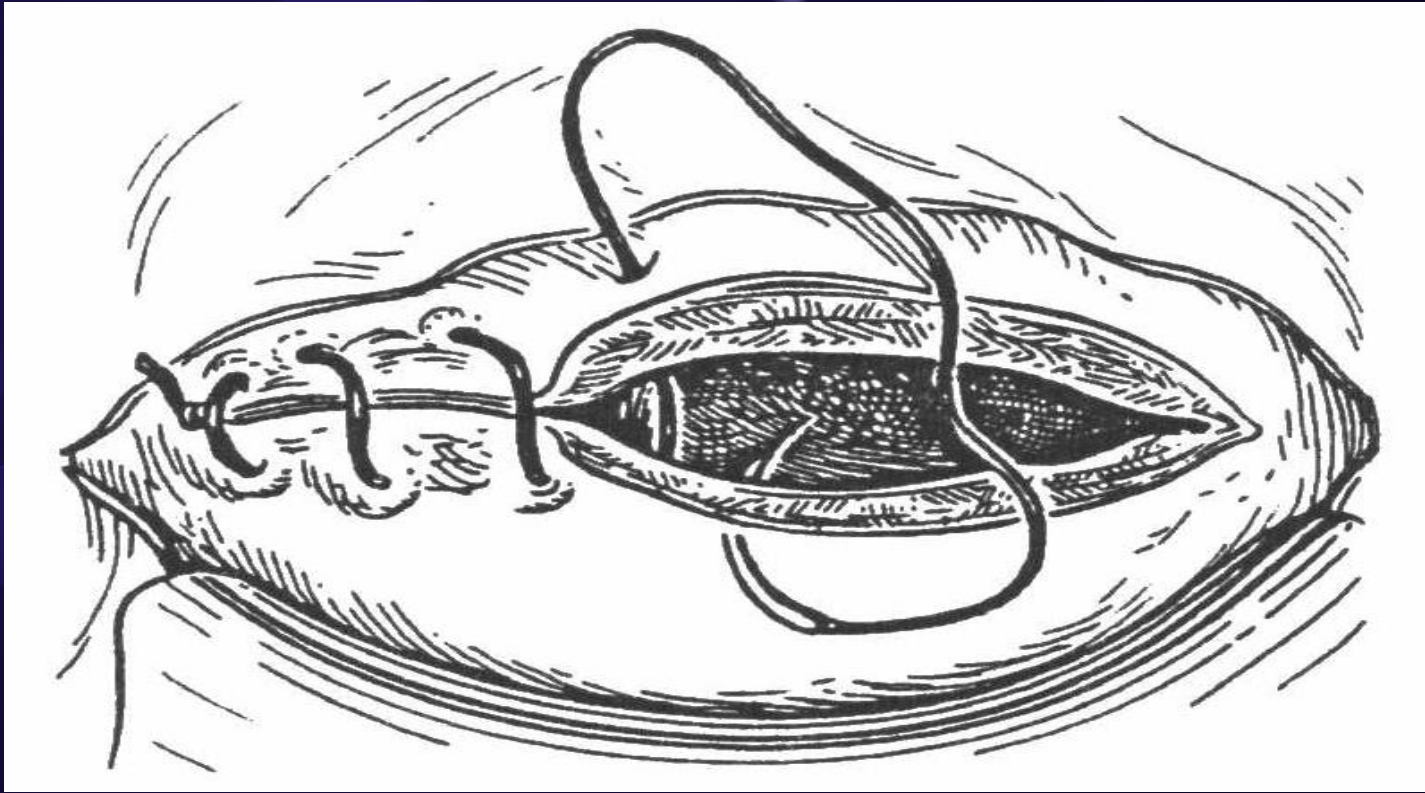


Method Derflera: scalpel spend 2.5-3 cm long incision through all layers of the uterus, then to the right and left of the middle by scissors, lifting the cut by second hand, continue to cut arched up.

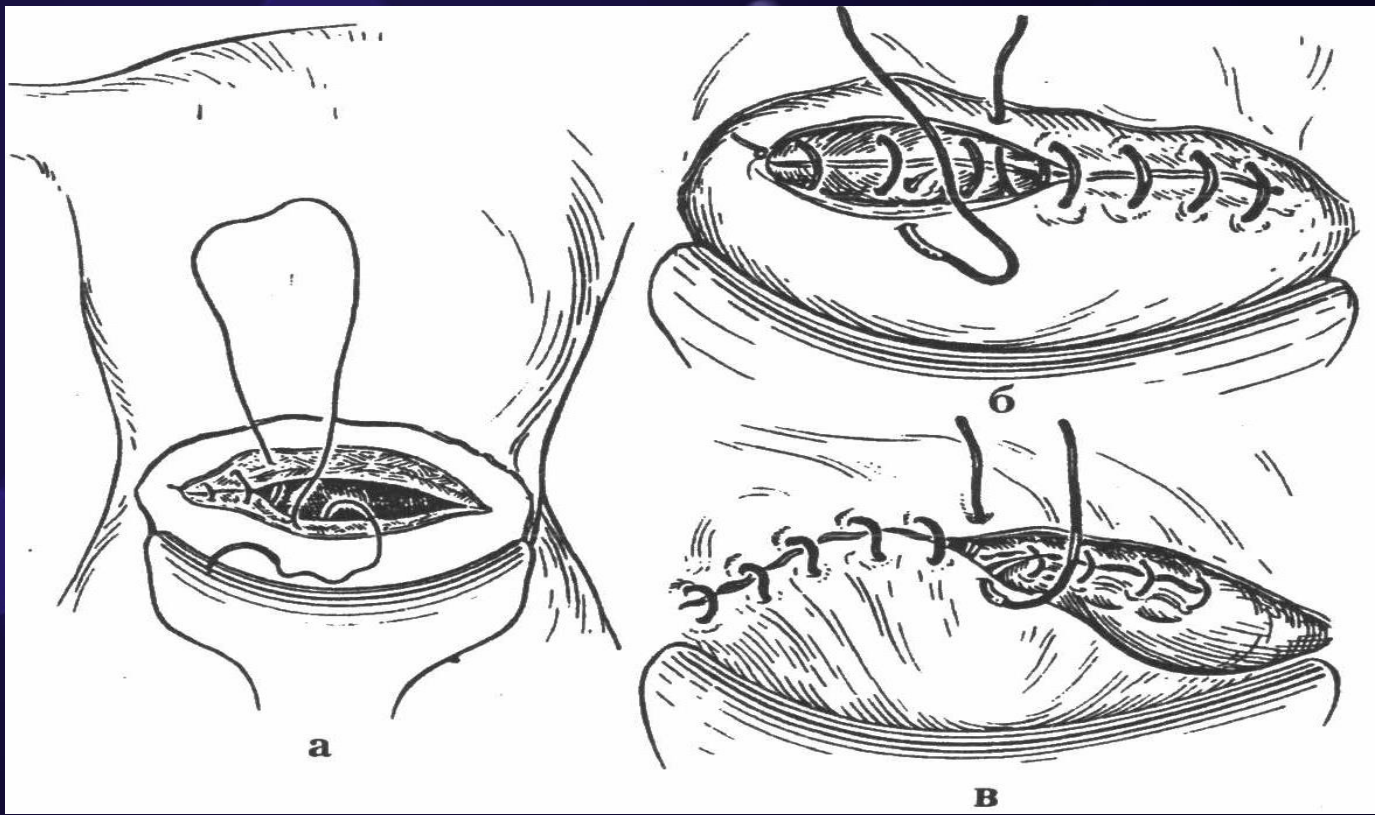
Stark method
The first stage - laparotomy . The authors of this technique - and Joel Cohen - offered to cut with a scalpel only the skin on the mothers abdomen. And further:
- Subcutis surgeon pushes the fingers (the classical method cuts , and hence cuts and vessels, which causes high blood loss and inflammation) fingers stretches vessels but does not break. !
- Slightly incised connective tissue witch wrap up the rectus abdominis muscles then pushes them by fingers ;
- Does not cut the peritoneum , and breaks and stretches by fingers (do not be afraid , because the gap is obtained as a result of a small hole stretched , and when it cut is very difficult to do it small) .
At the second stage, the surgeon makes the uterine incision minimum and extends his fingers just enough to be able to retrieve the child. This is undoubtedly better for the mother (blood loss is much less), and for the baby (baby simulates the passage through the birth canal) .
The wound was sutured with continuous synthetic suture.
This method is also very important that when it bladder (when cut is shifted down) is placed onto the scar with force : the organ itself (!) for an hour after the operation is in place. If the bladder is pulled up , then most women feel frequent urination , discomfort when full .



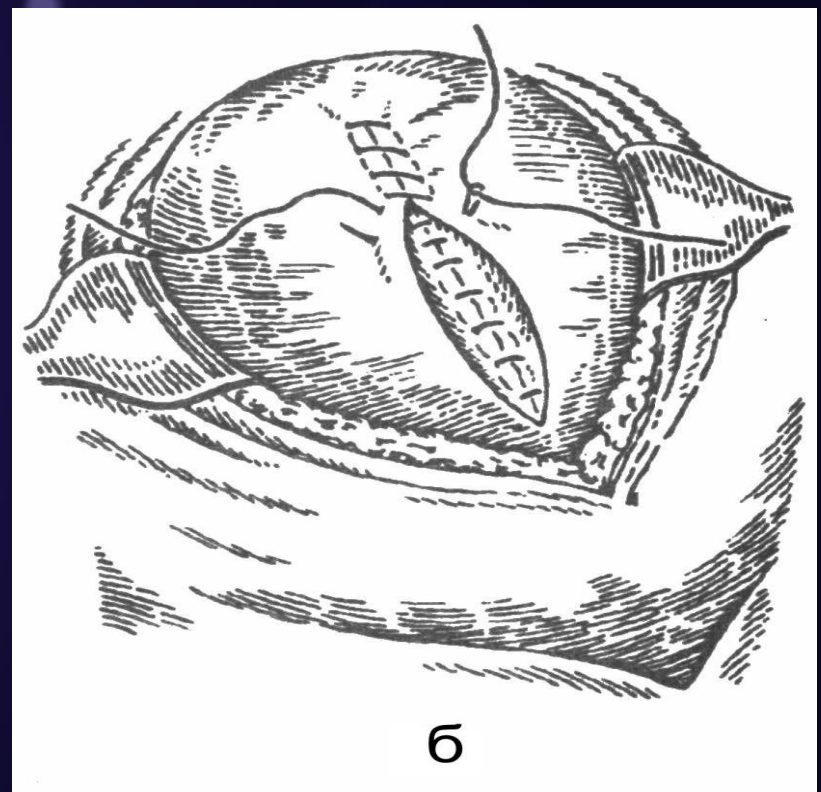
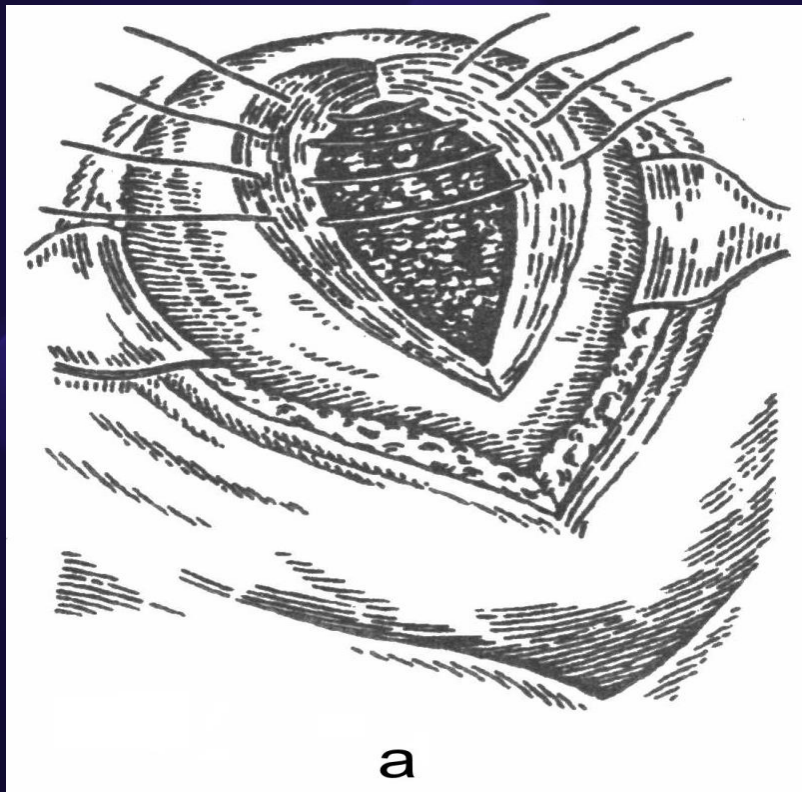
Extraction of the fetal head through the incision in the uterus



Imposition of a single-row continuous suture on a cross-section in the lower segment of the uterus



Imposing two-row continuous suture incision on the uterus: a - muco-muscular seam, b - muscle- muscle seam, c - peritonization by vesico-uterine fold



Classical (corporal), the CS:
a - the imposition of the first row of stitches;
b - the imposition of the second row

Indications for corporal CS

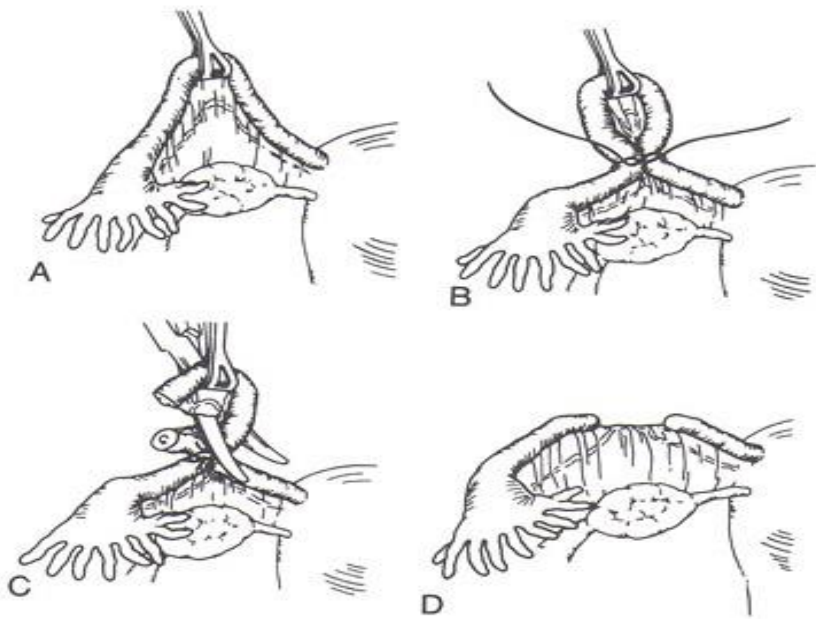
- ✓ The inaccessibility of the lower segment of the uterus due to dense adhesions from previous CS.
- ✓ The cross-fetal position with back facing down.
- ✓ Fetal malformations (conjoined twins).
- ✓ Large intramural myoma node in the lower segment of the uterus.
- ✓ Marked vascularity of the lower segment of the uterus with placenta previa, carcinoma of the cervix.

CS in HIV-infected women

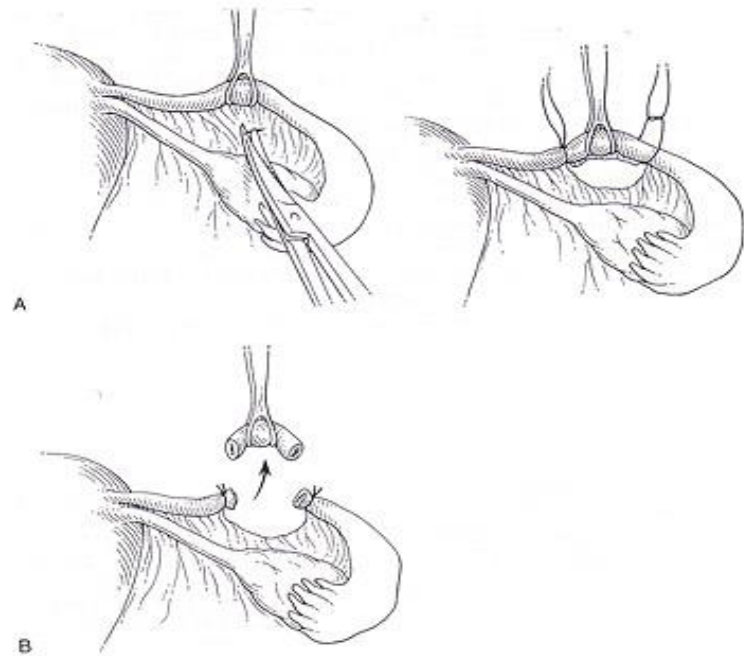
- Studies indicate that the CS lowers the level of vertical HIV transmission if a pregnant woman receives combination antiretroviral therapy, and surgery was performed before the onset of labor and rupture of membranes.
- The purpose of the combination antiretroviral therapy during pregnancy - a lower viral load to an amount less than 1000 copies per 1 ml blood.

Features of CS in HIV-infected

- ✓ Low middle incision is necessary to carry out on the abdominal wall.
- ✓ Widely used for vascular clamps.
- ✓ The incision on the uterus is carried out with scissors, so as not to damage the fetus membranes.
- ✓ Until the moment of extraction of the fetus to the uterus at the edge of the cut goes to a continuous hemostatic suture.
- ✓ After suturing the surgeon changes gloves and demarcates the wound with sterile gauze.
- ✓ Held puncture and aspiration of amniotic fluid - a child is born dry.



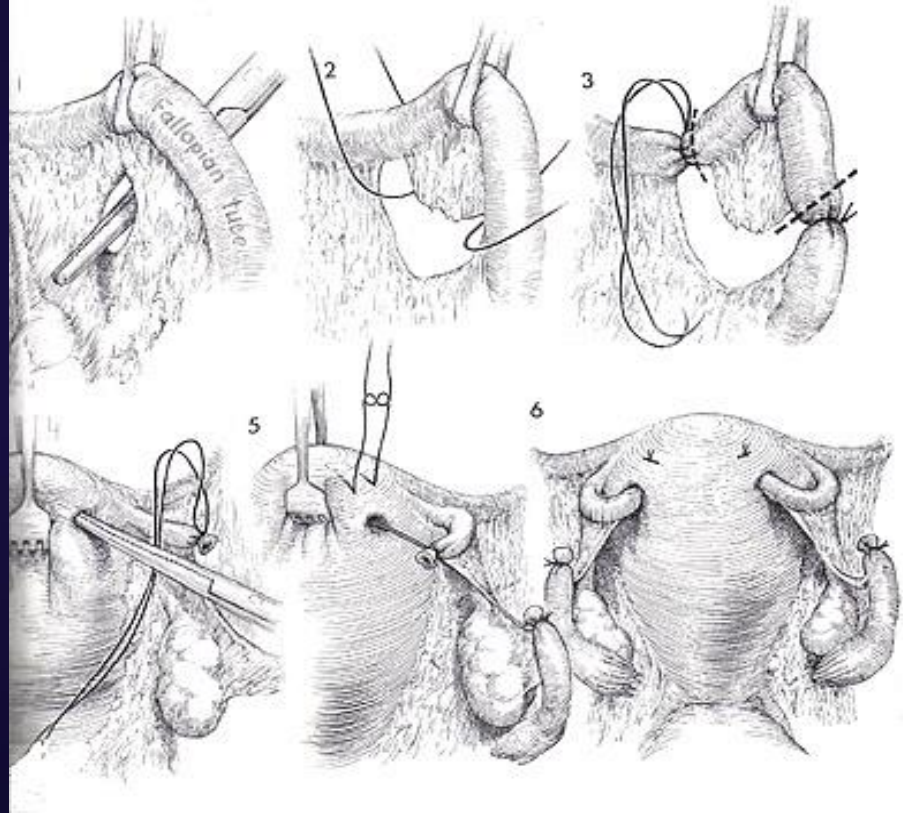
Pomerooy technique sterilization



Parkland



sterilization by D. Madlender



sterilization by A. Irving