KHUDOYAROVA D.R.
ZOKIROV F.I.

GENERAL OBSTETRICS

MINISTRY OF HIGHER EDUCATION, SCIENCE AND INNOVATIONS OF THE REPUBLIC OF UZBEKISTAN
MINISTRY OF HEALTH OF THE REPUBLIC OF UZBEKISTAN
SAMARKAND STATE MEDICAL UNIVERSITY

KHUDOYAROVA DILDORA RAKHIMOVNA
ZOKIROV FARKHOD ISTAMOVICH

GENERAL OBSTETRICS

Textbook

Textbook for students of medical faculty, faculties of pediatrics, medical pedagogy and medical prevention of higher medical educational establishments

SAMARQAND
2023

UO'K 618(075)
KBK 57.16ya7
K 42

Khudoyarova D.R., F.I. Zokirov
General obstetrics [Matn]: Textbook / D.R. Khudoyarova, F.I. Zokirov.- Samarkand: Samarqand, 2023.- 96 p.

AUTHORS:

D.R. Khudoyarova -head of Department of obstetrics and gynecology № 1 of Samarkand state medical university, Associate professor.

F.I. Zokirov -Assistant of Department of obstetrics and gynecology of Postgraduate education faculty of Samarkand state medical university, PhD

REVIEWERS:

Ruziyeva N.Kh -Associate Professor of the Department of Obstetrics and Gynecology of Tashkent state pediatric Institute, DSc

Agababyan L.R -Head of the Department of Obstetrics and Gynecology of the Faculty of Postgraduate education of Samarkand state medical university, Candidate of Medical Sciences, Associate professor

ABSTRACT

This textbook contains whole information about normal anatomy of female reproductive tract, physiology of pregnancy, normal labor and delivery, principles of normal labor biomechanism. Situational tasks and subject tests aimed for increasing students' knowledge reflected in the textbook enrich its content and help to conduct lessons based on new pedagogical technologies.

The textbook can be used by teachers and students of higher medical educational establishments as a resource in their practice.

ISBN 978-9910-9423-6-5

CONTENTS

CHAPTER I.

ORGANIZATION OF THE WORK OF THE MATERNITY HOSPITALS

Obstetrics and gynecology are two branches of a single science about the physiology of pathological processes occurring in the female body.

Obstetrics is a branch of medicine about physiology and pathophysiology of the pregnancy, delivery and postpartum period.

Gynecology is the branch of medicine about the diseases of female genital organs and methods of their diagnostics, prevention and treatment.

Deontology is a science that studies the relationship between doctors and patients, doctor's professional duty and his moral responsibilities.

The term medical deontology was introduced in the medical literature by Academician N. N. Petrov.

Medical duty is compassion, attention to the patient and helping him without being indifferent to him. These feelings are the most important principles of medical ethics. The concept of medical duty can be understood very broadly, starting with the honest, modest performance of daily medical work.

V.M. Bekhterev said: "If the patient does not feel better after talking to the doctor, then he is not a doctor, so the patient must trust the doctor, and the doctor must trust himself."

Medical deontology includes the problems of relationship between doctors, conduction of the principles of collegiality, holding a council and maintaining medical confidentiality.

The doctor's conscientious attitude to his work is also reflected in his honest admission of mistakes made in diagnosing or treating process.

The main task of deontology is maintaining the mental state of the patient in two ways:

1. **Speech** - the effect of medical speech in terms of calming the patient, dispelling fear and convincing him that his disease is treatable, explaining the nature of his disease.

2. **Elimination of trace** - aimed at eliminating adverse environmental factors that damage the patient's psychology and weaken the nervous system, their elimination contributes to a significant improvement from a particular disease, and sometimes complete treatment.

A doctor should always interact with patients in such a way that brings maximum benefit to the patient, strive for quick and pleasant treatment.

Sensitivity, attentiveness, real intelligence, calm conversation make patients lose their doubts and make sure that they come to the doctor who will treat them.

The first meeting with the doctor should bring relief. It depends on doctor's demeanor and appearance. Dryness, rudeness and arrogance, neglect of modesty and denial of treatment are not suitable here.

A business-like conversation without excessive optimism, confident decision-making, and a calm attitude to the identified symptoms of the disease also influence the patient's feelings.

Often, the doctor who has completed the primary examination should not worry the patient if he has doubts, he should continue observations, conduct a series of tests and talk about a certain point in determining the final diagnosis.

It is impossible to treat a pregnant woman or a gynecological patient without the participation of the patient herself. In some cases, not human kindness, but medical kindness (patient's request to discharge earlier), everything that can harm the patient should not be allowed, even if it creates an impression on patients (due to misunderstanding).

Ibn Sina said: "A doctor should have the eyes of a falcon, the hands of a girl, the wisdom of a snake, and the heart of a lion."

In some cases or circumstances like finding out deformations of the fetus in ultrasonography, rejection of the baby by the mother, the law of medical confidentiality also comes into force. All medical interventions including small gynecological operations should be performed under anesthesia and during operations there should not be unnecessary conversations, because the operations are generally performed in the first stage of anesthesia, when the patient still hears everything.

Each obstetrical and gynecological institution has a chief specialist who is the subject of constant supervision and training of others. The leader must monitor the training and development of his team of physicians without fear that any of the staff members will be equal or superior in terms of obstetrical and operative skills. This will only increase his respect and contribute to the development of a sense of gratitude.

It is absolutely impossible for the consultant to criticize the attending physician in the presence of the patient.

All employees should be educated in the spirit of respect for medical confidentiality, for which the basic rule must be conducted: any information is given by the attending physician or the head of the department.

If the diagnosis is correct and treatment measures are not carried out at all, this may be due to the manifestation of paroxysmal indifference. If the doctor made incorrect diagnosis and treated the patient according to his diagnosis which brought to complications and even fatal results. then this must not be considered as a criminal liability.

ASEPSIS AND ANTISEPTICS IN MIDWIFERY

Issues of asepsis and antiseptics are important in midwifery practice. Therefore, it is no coincidence that the learning of antiseptics is important in obstetric practice, because there are wide range of complications during pregnancy, delivery and the postpartum period. The wound surfaces (placental bed, uterine rupture, vagina and perineal lacerations, the

presence of blood vessels and blood clots in the placental bed) are a good environment for the penetration of infection into the birth canal and its development. Weakened body of the women after delivery and newborns are more susceptible to septic complications caused by microorganisms. All above mentioned contributes to the penetration of infections into the body of the mother and the newborn. Therefore, it is impossible to protect the mother and the newborn from infections without strict organization of work in the maternity hospital, strict adherence to the standards of asepsis and antiseptics set by medical staff.

Until the middle of the 19th century, postpartum infectious diseases (postpartum fever) were a real disaster, especially in obstetrical hospitals.

In 1861, the Hungarian obstetrician Semmelweis was able to find the nature of this disease ("cadaver poison") and developed an antiseptic measure (washing hands with calcium chloride solution) to combat it. Asepsis and antiseptics were first brought to Russia by N.I Pirogov, and first introduced to obstetrics by his student A. Ya. Krassovsky.

STRUCTURE OF THE OBSTETRICAL HOSPITAL

Obstetrical department or hospital should have:

1. Admission department.
2. Delivery department.
3. Department of pathology of pregnancy
4. Isolator.
5. Department of newborns.
6. Intensive care unit
7. Operation theatre.

THE DELIVERY DEPARTMENT CONSISTS OF FOLLOWING PARTS:

a) sanitary section
b) delivery block
c) postpartum wards

d) medical procedures room
e) neonatal intensive care unit
f) discharge rooms

DELIVERY BLOCK - includes:

a) prelabor wards
B) delivery rooms

ISOLATORY WARDS must be in maternity hospitals having over 100 beds and should not exceed more than 5% of the total number of beds in hospital.

ANCILLARY ROOMS:

a) Laboratory
b) Central Sterile Services Department (CSSD) b)
c) Washing/cleaning rooms - separate for medical instruments and linens.
c) separate lavatories for patients and staff
d) disinfection and laundry rooms, a kitchen, a room for clean linen.
STAFF ROOM for doctors/head of department and.

BASIC PRINCIPLES OF OBSTETRIC CARE IN HOSPITAL

1. Strict adherence to the sanitary regime and the rules of asepsis and antiseptics in the hospital. Personal hygiene of stuff and students.
2. Specialized care for pregnant women and women in labor.

TREATMENT AND PROTECTION REGIME IN THE OBSTETRICAL HOSPITAL.

1. Keeping silence.
2. Smart scheduling of daily regime.
3. Psychoprophylaxis and psychotherapy.
4. Treating pains of any etiology, treatment with sleep.
5. Rational nutrition nutrition.

6. Knowledge and discipline of stuff (relationships between employees and women in labor).

NEONATAL DEPARTMENT

Due to the physiology of the newborns, it is necessary to follow the sanitary regime and establish optimal environmental conditions such as temperature of wards, nutrition, etc. The wards in department must be ventilated at least 6-7 times a day, and the temperature of the ward should be between 25-30°C. The area for each newborn should be at least 3 m^2. The temperature in the ward for preterm babies should not be lower than 24°C. In the neonatal intensive care units premature and injured neonates, there must be a centralized oxygen supply, artificial lung ventilation and suction devices, incubators, electric beds, modern heating devices and oxygen bags.

Sick newborns are cared for up to 7 days, then they are transferred to the upper stages of care for further treatment.

MAIN INDICATORS OF OBSTETRICAL CARE

1. Maternal mortality rate is measured per 100,000 births.
2. Stillbirth rate: The number of stillborn neonates per 1000 neonates born, including live births and stillbirths.
3. Neonatal mortality rate. The number of neonatal deaths per 1000 live births.
4. Obstetrical traumatism is measured in percentages from all births and should not exceed 3-5%.
5. Perinatal mortality rate. The number of stillbirths plus neonatal deaths per 1000 total births.
6. Eclampsia rate: which should not occur, but currently its rate is 0.002%.
7. Birth rate. The number of live births per 1000 population. Its worldwide rate is 24‰ and 34-36‰ in Uzbekistan.
8. Infant mortality rate. The number of infant deaths per 1000 live births.

a. Infant death - all deaths of liveborn infants from birth through 12 months of age and constitute 60% of all perinatal deaths.

b. Late neonatal death - death after 7 days but before 29 days, and constitute 80% of all perinatal deaths.

c. Early neonatal death - death of a liveborn neonate during the first 7 days after birth. Constitute 70-80% of all perinatal deaths.

9. Obstetric beds indicator

10. Principles of mother and child (newborn) care:

a. general accessibility;

b. common statehood;

c. highly qualified care;

d. free service;

e. prevention of complications

DOCUMENTS USED IN MATERNITY HOSPITALS

All documents used in maternity hospitals are approved by the Ministry of Health of the Republic of Uzbekistan and are followings:

1. Log of registration of admitted or rejected pregnant women, delivered women.

2. Medical card of development of newborns.

3. Medical card of delivery

4. Log of neonatal department

5. Log of registration of vaccination

6. Log of registration of measures for tetanus prevention.

7. Log of registration of operations performed in hospital.

8. Log of registration of transfusion of blood and its components.

9. Perinatal death certificate.

9. Journal of analysis of maternal and perinatal death.

SANITARY-HYGIENIC EDUCATION AMONG PATIENTS AND STAFF

It is very important to conduct high sanitary and hygienic standards in an obstetric hospital, like personal hygiene of employees and patients,

cyclic work of wards and delivery rooms, quartzization and ventilation of wards and rooms, bacterial control of medical devices and nasopharyngeal smears of stuff and etc.

POSTPARTUM DEPARTMENT

In the postpartum department, postpartum women are under systematic medical supervision until discharge from the hospital. Every morning, the ward doctor rounds the postpartum women in his ward. All doctor's prescriptions are followed by the ward nurse. In normal course of postpartum period, the mother and newborn are discharged home on the 3rd day.

DEPARTMENT OF PATHOLOGY OF PREGNANCY

Pregnant women with pathology of pregnancy are treated in this department when diseases and complications have developed and there is no result of outpatient treatment|:

a) Hyperemesis gravidarum
b) Gestational hypertension and mild preeclampsia
c) Bloody vaginal discharge (miscarriage)
d) Cardiovascular diseases,
e) Obstetric complications and other diseases.

Timely hospitalization of women and treatment are measures that guarantee a positive outcome of pregnancy and childbirth.

CHAPTER II.

BIRTH CANAL AND FETUS

Pelvic anatomy

Pelvis – it is a bony canal connected by ligaments, inside which female internal genitalia and other organs and surrounding tissues are located.

The pelvis is of great importance in obstetrics because it is the canal through which the fetus moves during labor.

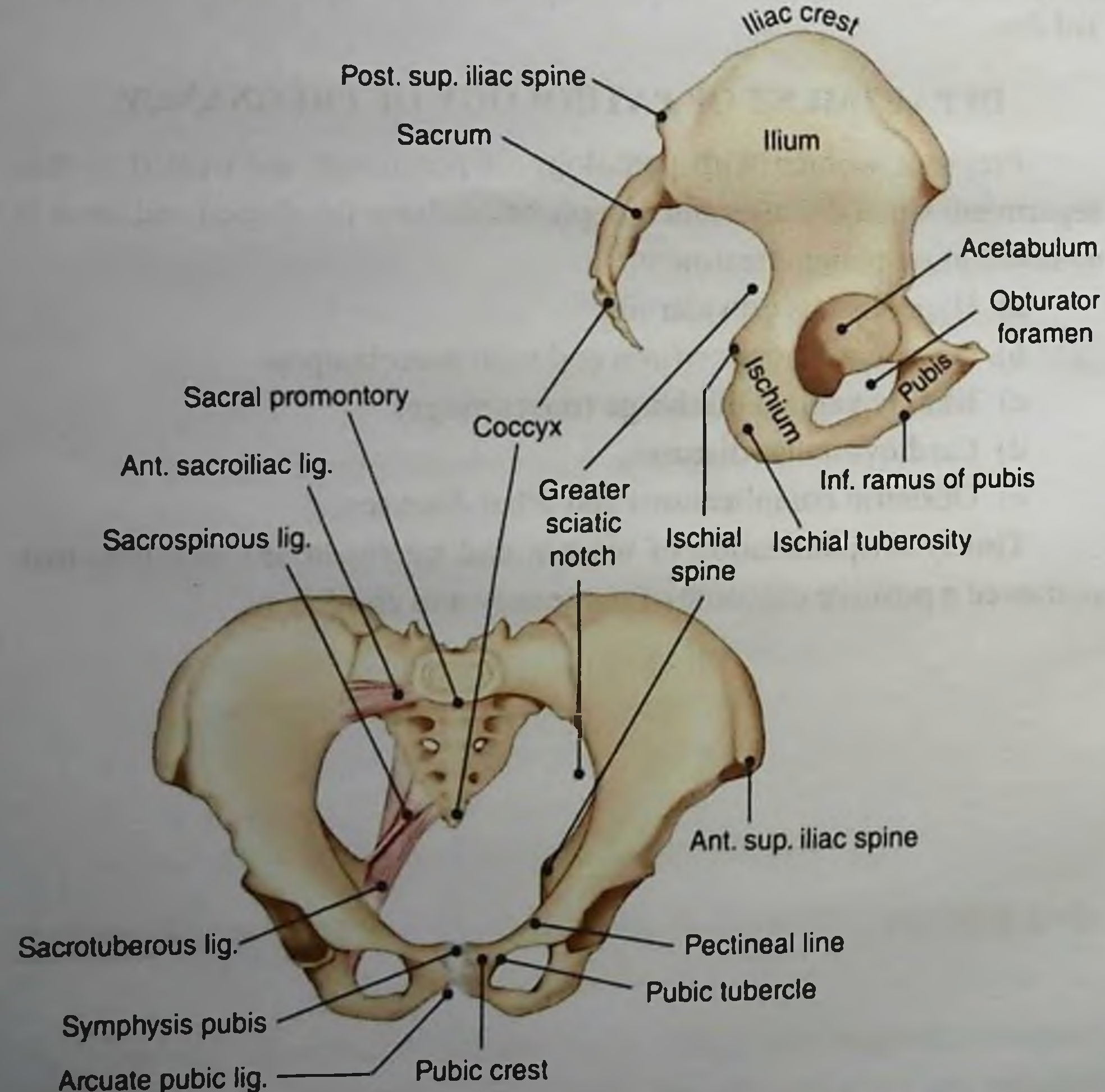


***Figure 2.1.** Female pelvis*

The pelvis of an adult woman consists of 4 bones: 2 innominate bones, the sucrum and coccyx, which are held together by means of thick layers of cartilages and ligaments.

Innominate (pelvic) bone (os innominatum, os coxae) – is formed by 3 bones:

1. Ilium
2. Ischium
3. Pubis - pubic arch

These 3 bones join together to form a large socket which is called the acetabulum.

Iliac bone – consists of a body and wing. In the body of the ilium, the upper (ends with the bone edge - crista iliaca) and lower parts are distinguished which are divided by linea terminalis (linea innominata). Crista iliaca in front have 2 projections - anterior superior iliac spine and anterior inferior iliac spine. It also has 2 projections in the back – posterior superior iliac spine and posterior inferior iliac spine.

Sacrum – (os sacrum) consists of 5-6 fused vertebrae. The front surface of sacrum is concave. The back is convex. At the junction of the 1st sacral vertebra (base) with the 5th lumbar vertebra, a bony hump – promontory is formed. The sacrum has the shape of elongated cone. On the front surface of the sacrum there are 4 transverse lines, at the ends of which there are sacral foramina, through which nerve fibers pass from the spinal cord to the internal genitalia.

Pelvic floor muscles:

1. **Superficial muscle layer** superficial perineal fascia, consists of:

a. Bulbocavernosus muscle - m. bulbocavernosus (m. constrictor cuni).

b. Ischiocavernosus muscle - m. ischiocavernosus

c. Superficial transverse perineal muscle - m. transversus perinei superficialis

d. External anal sphincter - m. sphincter ani externus.

2. **Middle muscle layer (urogenital diaphragm):**

a. Deep transverse perineal muscle (m. transversus perinei profundus)

b. Sphincter urethrae muscle

3. **Deep muscle layer (pelvic diaphragm):**

a. Levator ani muscle (m. levator ani), composed of:

i. m. pubococcygeus,

ii. m.puborectalis,

iii. m. iliococcygeus.

b. Coccygeal muscle (m. coccygeus)

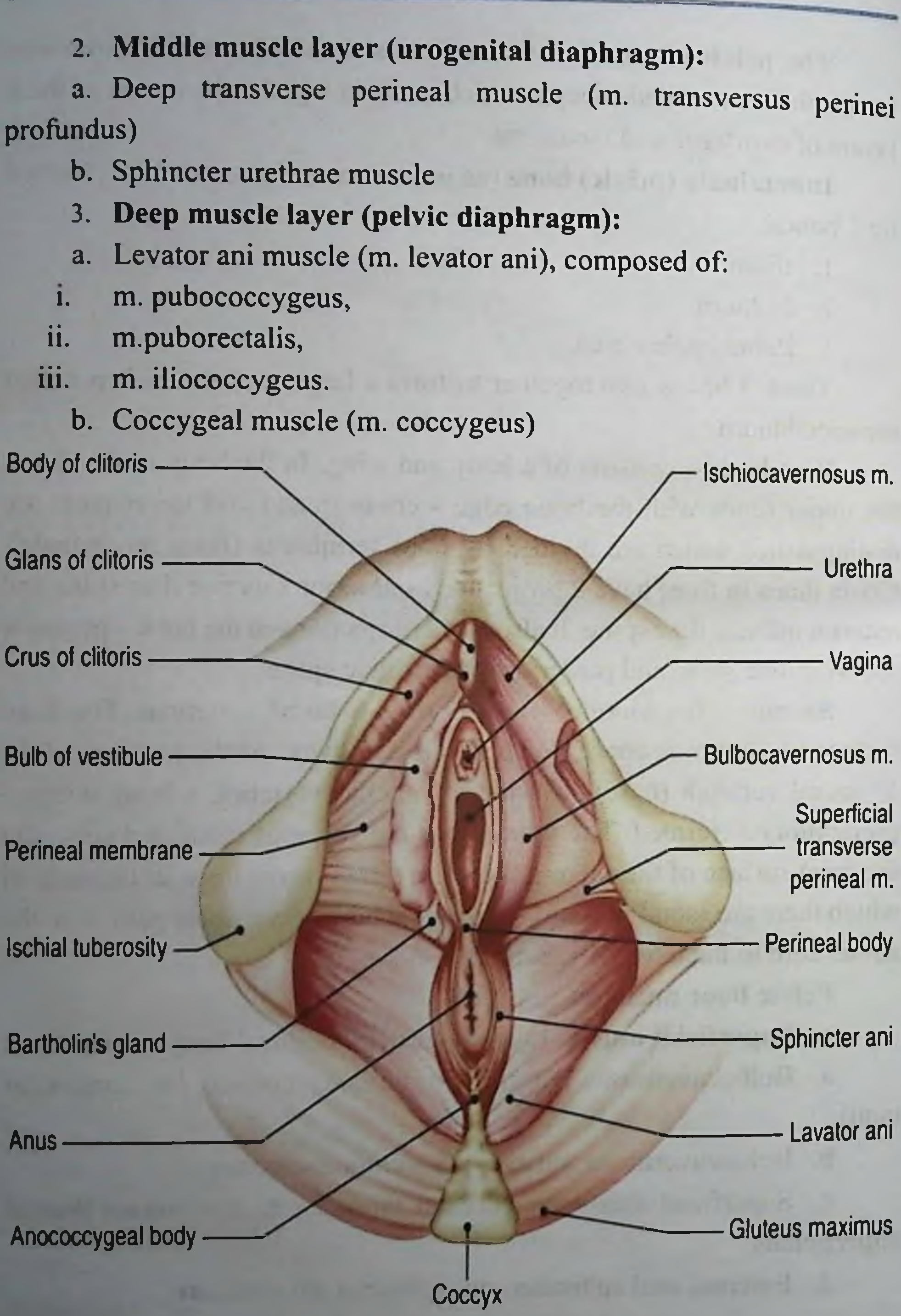


Figure 2.2. Pelvic floor muscles

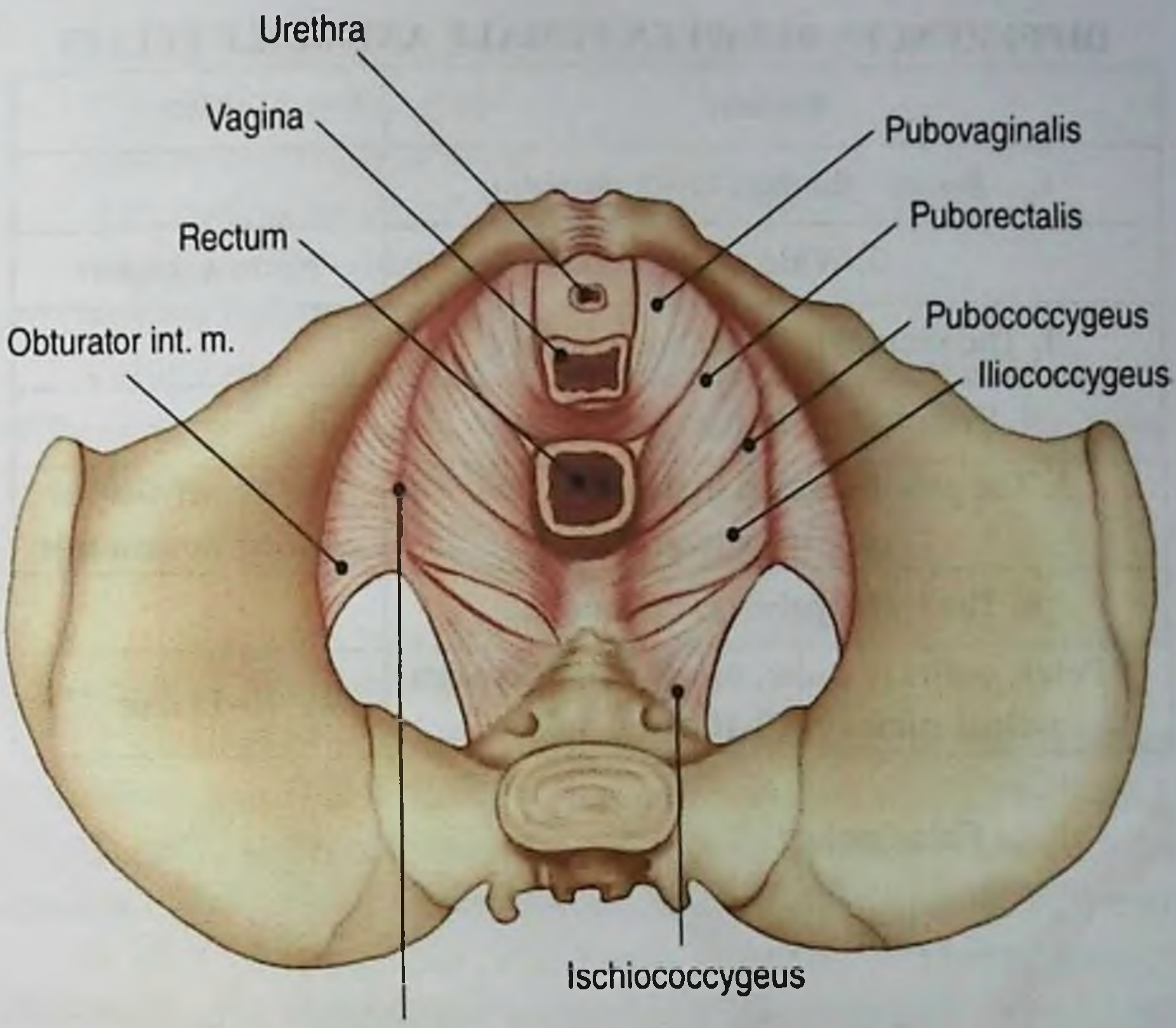


***Figure 2.3.** Pelvic floor muscles*

THE FUNCTIONS OF THE PELVIC FLOOR MUSCLES

1. Support for internal genital organs, contributes to their normal position.

2. Along with diaphragm and anterior abdominal muscles maintains intrauterine pressure.

3. In delivery they are a continuation of the bony birth canal.

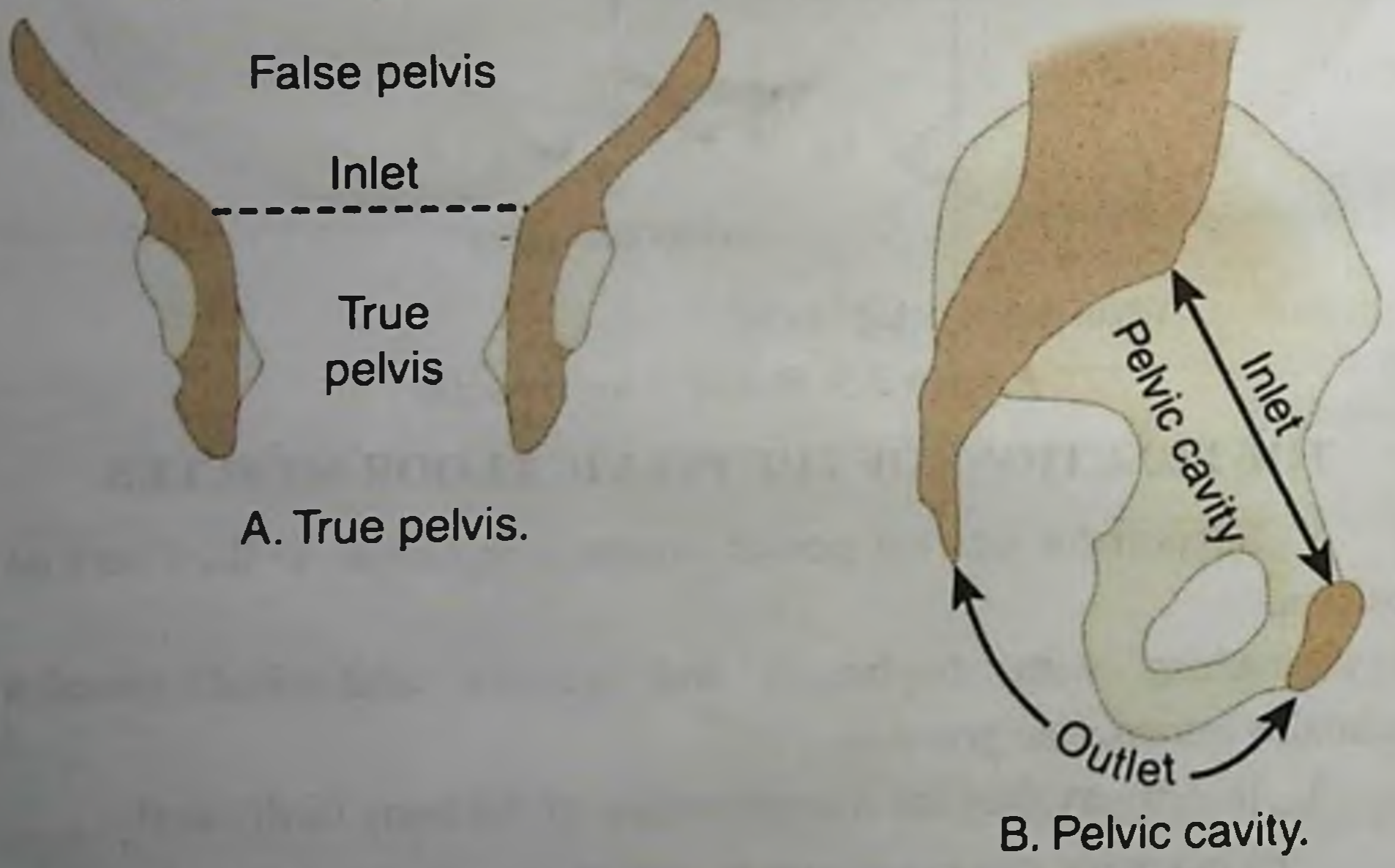
CONCEPT OF GREATER AND LESSER PELVISES

The pelvis is divided into 2 components:

1. Upper – greater (false) pelvis;
2. Lower - lesser (true) pelvis.

DIFFERENCES BETWEEN FEMALE AND MALE PELVIS

Women	Men
1. Bones - thinner, lower, straight	
2. Wide, short	Narrow, higher
3. The sacrum is wider and concave	
4. Symphysis - shorter and wider	
5. The pelvic unlet is in the form of a transverse oval	The funnel-shaped narrows downwards
6. The lesser pelvis is cylindrical	
7. Pelvic outlet is wider, the distance between ischial spines is 90-100 mm, wider	70-75 mm



A. True pelvis.

B. Pelvic cavity.

***Figure 2.4**. Female pelvis*

The boundaries between them are:

Anteriorly - the upper edge of the innominate and pubic bones;

Laterally - linea terminalis (l. innominata)

Posteriorly - promontory.

Greater pelvis boundaries;

Anteriorly – lower part of anterior abdominal wall;

Laterally - the wings of the iliac bones;

Posteriorly – lumbar vertebra.

Greater pelvis is not important in childbearing, but it is a "mirror" of the lesser pelvis, that said some dimensions of the greater pelvis helps in determination of dimensions of the lesser pelvis.

DIMENSIONS OF GREATER PELVIS

1. Interspinous distance (*Distantia spinarum*) is the distance between anterior superior iliac spines, and usually is 25-26 cm.

2. Intercristal distance *(Distantia cristarum)* is the distance between furthest lateral points of iliac crests and usually is 28-29 cm.

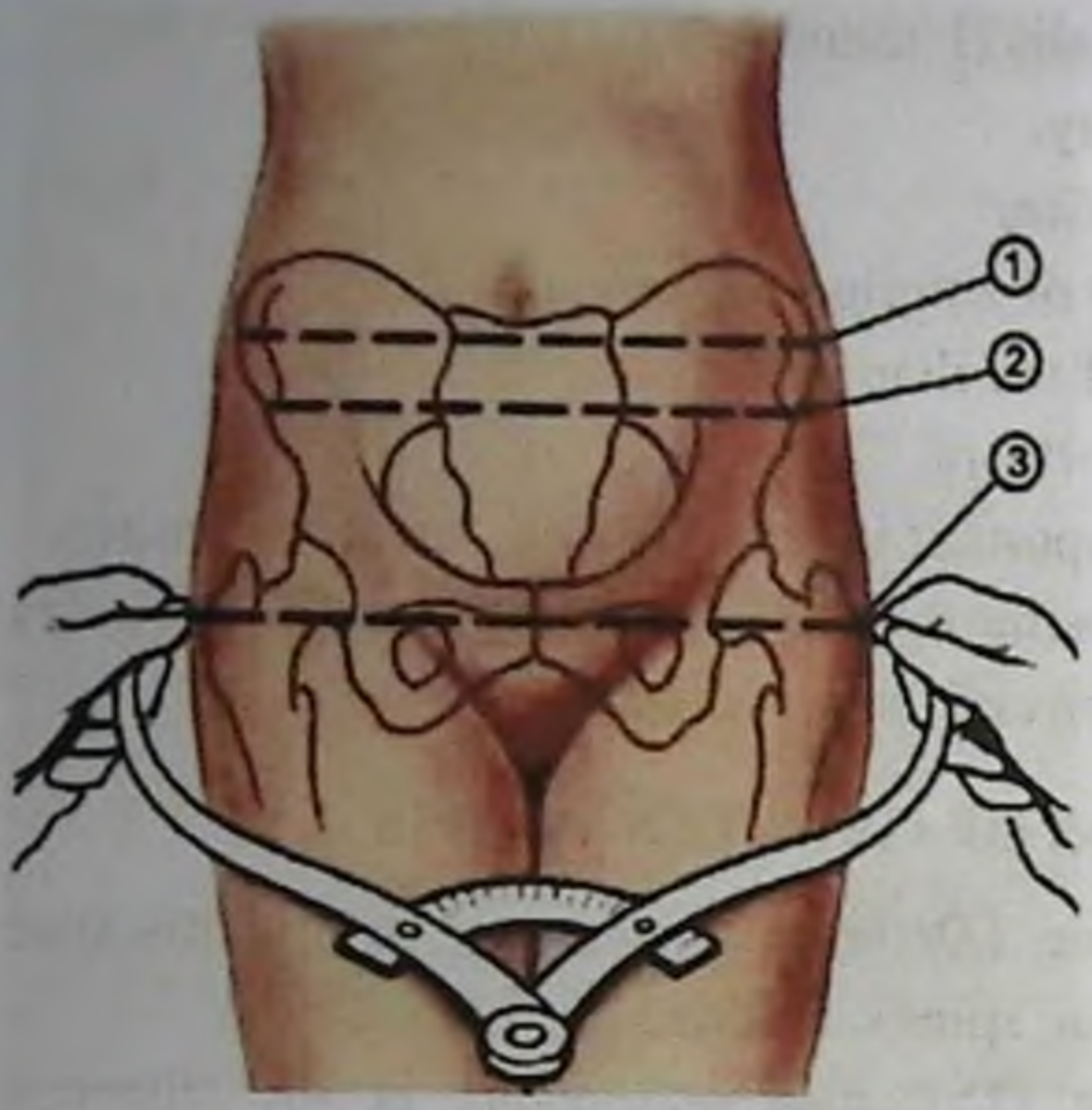
3. Intertrochanteric distance *(Distantia intertrochanrterica)* is the distance between the major trochanters of the femurs and is 31-32 cm.

4. External conjugate *(Conjugata externa)* - (Baudelocque's dimension) from the uppermost margin of the symphysis pubis to the spinous process of fifth lumbar vertebra and is 20 - 21 cm. According to this dimension pelvic inlet measure can be determined (true conjugate).

5. True conjugate *(conjugate vera)* is estimated indirectly by subtracting 9 cm from the external conjugate, and is usually 11 cm.

6. Lateral conjugate *(Conjugata lateralis)* is the distance between anterior and posterior iliac spines of the same sidi and is about 14-15 cm (measured in cases of pelvic deformations). To date not measured.

7. Oblique conjugate *(Conjugata oblique)* is the distance from the spina iliaca anterior superior of one side to the spina iliaca posterior superior on the opposite side and is about 17-18 cm (measured in cases of pelvic deformations). To date not measured.



1. Distantia spinarum

2. Distantia cristarum

3. Distantia trochanterica

Figure 2.5. Dimensions of false pelvis

Michaelis rhombus (sacral diamond) is bounded at the top by the tip of the spinous process of the fifth lumbar vertebra and the upper limit of the intergluteal groove in the bottom, from the sides between the posterior superior iliac spines. Its longitudinal diameter is 11 cm, transverse diameter is 10 cm. Usually the sum of the longitudinal and transverse dimensions is equal to the external conjugate externa dimension. In narrowed pelvis the diameter of the Michaelis rhombus is reduced, the upper and lower corners are sharp. Longitudinal dimensions are reduced in flat pelvises. In deformations of the pelvis, the rhombus has an incorrect shape. That said the shape of Michaelis rhombus would externally correspond to the shape of pelvic inlet.

DIMENSIONS OF LESSER PELVIS

There are 4 planes in the pelvis:

1. The plane of the pelvic inlet.
2. The plane of greatest pelvic dimension (of no obstetrical significance).
3. The plane of the midpelvis (least pelvic dimension).

4. The plane of the pelvic outlet.

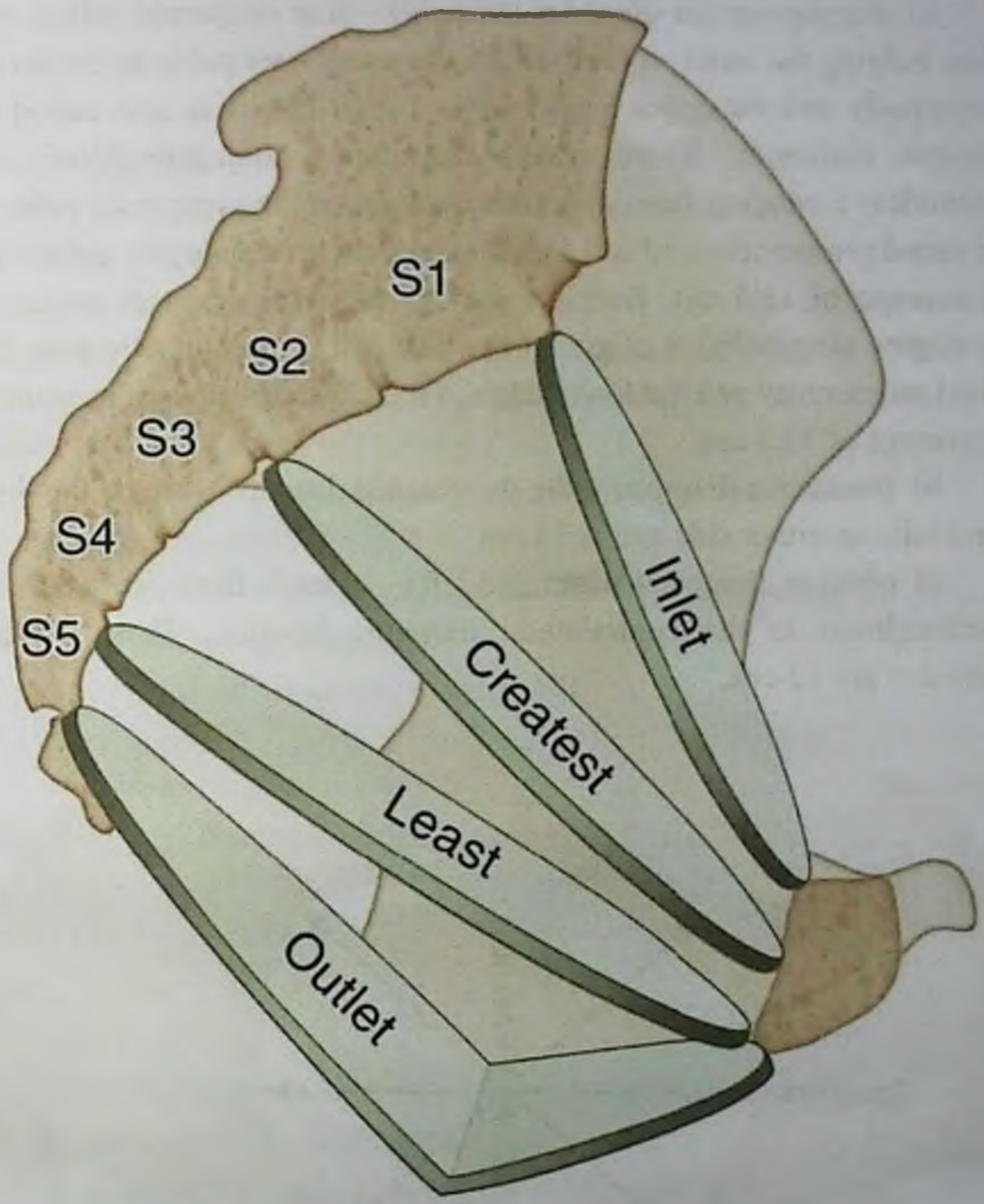


Figure 2.6. *Planes of the pelvis (sagittal section)*

I. The plane of the pelvic inlet.

Borders:

- Anteriorly – the upper edge of the iliac arch;
- Laterally – terminal lines (linea innominatae);
- Posteriorly – the promontory.

Dimensions:

a) anteroposterior diameter (straight) – true conjugate – from the point bulging the most on the back of the symphysis pubis to the sacral promontory and measures an average of 11.0 cm. It is also called as obstetric conjugate. There is also anatomical conjugate (Conjugata anatomica) extending from uppermost margin of the symphysis pubis to the sacral promontory and is 0,5 cm longer than true conjugate measuring an average of 11.5 cm. Beside these in obstetrics diagonal conjugate (conjugate diagonalis) is of great importance, it is measured between the sacral promontory and the lower edge of the pubic symphysis, measuring an average of 12.5 cm.

b) transverse diameter – the the greatest distance between the linea terminalis on either side and is 13 cm.

c) oblique diameters (right and left) – extends from one sacroiliac synchondrosis to the contralateral iliopubic junction. These oblique diameters are 12 cm.

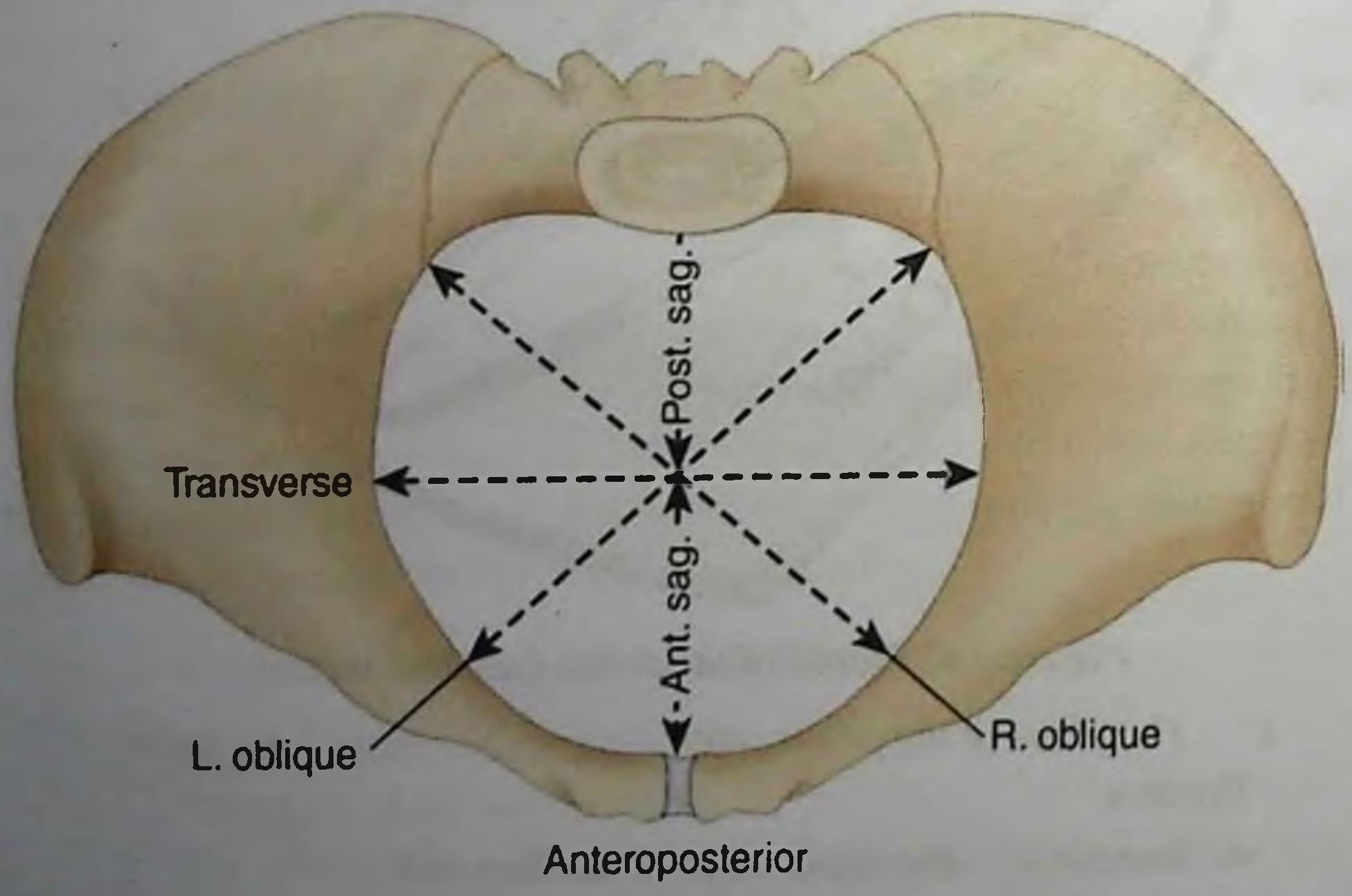


Figure 2.7. *Pelvic inlet and its dimensions*

II. The plane of greatest pelvic dimension (of no obstetrical significance).

Borders:

- Anteriorly – the middle of the symphysis pubis;
- Laterally – the inner surface of acetabulum
- Posteriorly – the joint between 2-3 sacral vertebrae;

Dimensions:

a) anteroposterior diameter (straight) – from the middle of the symphysis to the joint between 2-3 sacral vertebrae and is 12.5 cm;

b) transverse diameter – the distance between inner surface of acetabulum and is equal to 12.5 cm.

III. The plane of the midpelvis (least pelvic dimension).

Borders:

- Anteriorly – the lower edge of the symphysis pubis;
- Laterally – iliac spines
- Posteriorly – sacrococcygeal joint

Dimensions:

a) anteroposterior diameter (straight) – 11.5 cm, from the lower edge of the symphysis pubis to the sacrococcygeal joint;

b) transverse diameter – the distance between the ischial spines and is 10.5 cm.

IV. The plane of the pelvic outlet.

Borders:

- Anteriorly – the lower edge of the symphysis pubis;
- Laterally – ischial tuberosities
- Posteriorly – the upper edge of the coccyx

Dimensions:

a) anteroposterior diameter (straight) – from the upper edge of the coccyx to the lower edge of the symphysis pubis and is normally 9.5 cm, but during childbirth it increases to 1.5 – 2 cm due to the deflection of the coccyx during the passage of the fetus through the birth canal.

b) transverse diameter – the distance between the ischial tuberosities and is equal to 11 cm.

The plane of the pelvic outlet consists of two approximately triangular areas with a common base, which is a line drawn between the two ischial tuberosities. Symphysis pubis is 4,5 – 5 cm in height and have 1.5 – 2 cm thickness.

The pelvic planes are of great importance, because according to them we get an idea about the shape of birth canal and mechanism.

If we virtually join the center point of anteroposterior diameter of each plane, then we get an anteriorly curved line (looks like "fish hook") which is called obstetric axis or axis of birth canal. Thus a lesser pelvis seems like an anteriorly curved canal. But indeed it is not so. Investigations showed that bony pelvis is not curved. During the labor fetal head passes through parallel planes until it reaches the pelvic floor. These planes were called "parallel planes" by American gynecologist H.L. Hodge (parallel planes of Hodge). Of these planes the most important are 4 planes which are 3-4 cm away from each other. They are:

1. First (upper) plane – passes through terminal lines (linea terminalis s. innominate), and called **terminal plane**.

2. Second plane runs parallel to the first plane and passes through the lower margin of the symphysis – **lower pubic parallel plane**. It is also called **main plane**, because after passing this plane fetal head does not encounter obstacles on its way (escapes bony pelvic ring).

3. Third plane – parallel to the first and second planes passes through ischial spines and called **spinal plane.**

4. Fourth plane – it is parallel to third plane and actually is a pelvic diaphragm and corresponds to the direction of the coccyx and called **outlet plane.**

MEASURING THE REAL SIZE OF THE PELVIS

It is measured by vaginal examination. For this the index and middle fingers of the right hand are inserted to the vagina until they

touch the sacral promontory, then the thumb of the right hand is placed just to the lower edge of symphysis pubis. The doctor makes a mark in this place and the assistant measures this distance. At this step the diagonal conjugate is also measured (normally 13 cm). If we subtract half the width of the pubic bone from length of diagonal conjugate we get the true conjugate, which usually measures 11 cm.

Another way of true conjugate calculation is subtracting 1,5-2 cm from the length of diagonal conjugate depending on radio carpal articulation (wrist) circumference (Soloviev index) 1,5 cm if it is 14-15 cm, 2 cm if it is 17-18 cm.

OBSTETRIC AXIS (AXIS OF BIRTH CANAL) – is a line connecting the center point of the straight dimensions of all pelvic planes, having J shape, according to which the fetus passes through the birth canal.

PELVIC INCLINATION - the intersection of pelvic inlet plane with the horizontal (usually 60°).

A TRUE CONJUGATE – its angle is 60 degrees relative to horizont.

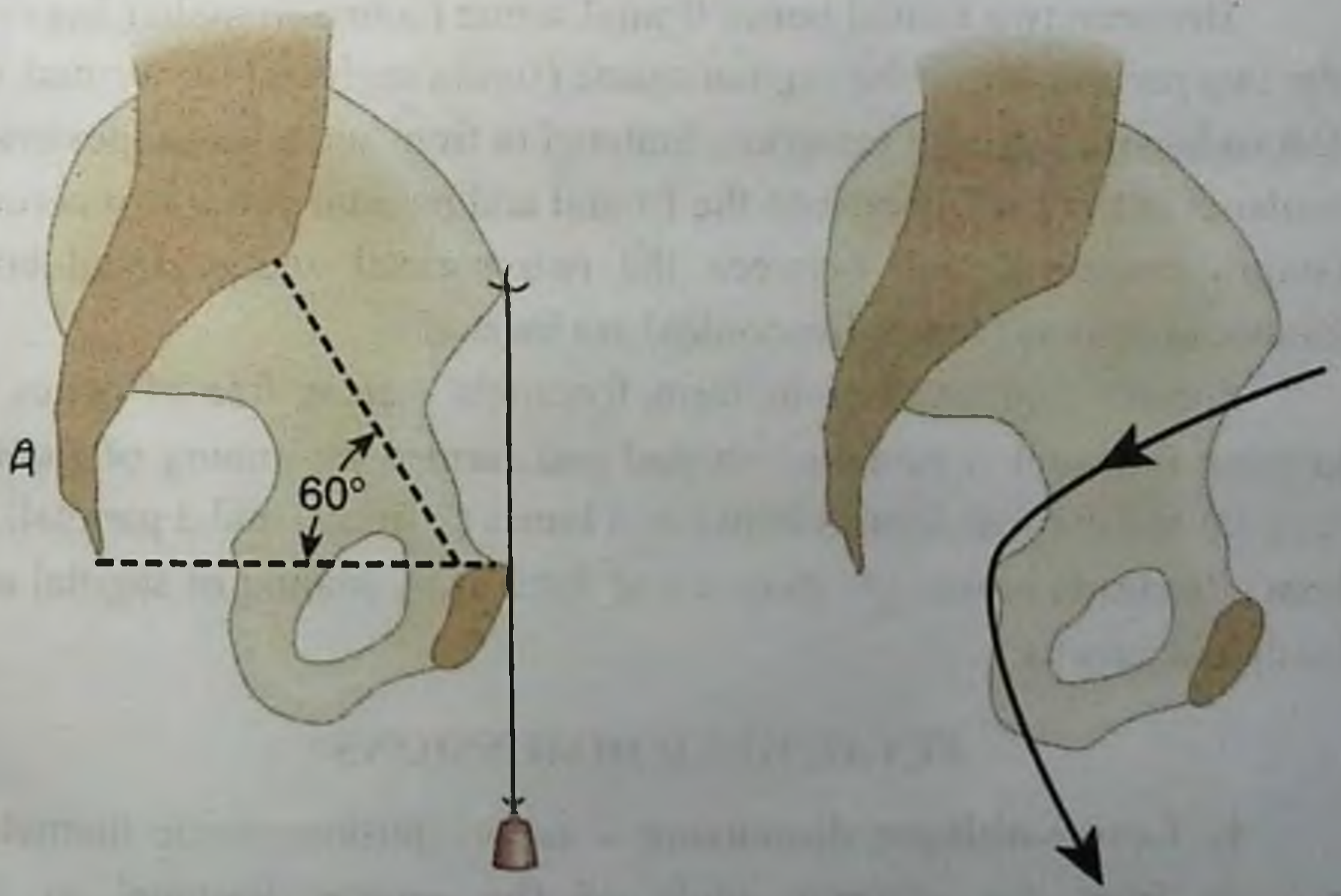


Figure 2.8. *Pelvic inclination and axis of birth canal*

The pelvic inclination can be increase by placing a pillow under the waist and buttocks. When the pelvic inclination is too large, the fetal head does not enter the pelvic inlet plane, and when it is small, the fetal head descends towards the perineum causing its lacerations.

THE FETUS

The head of a mature fetus consists of two unequal parts: the skull and the face.

The fetal skull consists of:

- two frontal bones - os frontalis
- two parietal bones - os parietalis
- two temporal bones - os temporalis
- one occipital bone - os occipitalis

Bones are interconnected by sutures and fontanels (fonticulus). In addition, the bones of the fetal head are flexible. Sutures and fontanels allow for shifting or sliding of each bone altered by external compressive forces to accommodate the size and shape of the maternal pelvis. This process is called molding.

Between two frontal bones frontal suture (sutura frontalis), between the two parietal bones the sagittal suture (sutura sagitalis) are located, the last ends with a greater (anterior) fontanel in front and a lesser (posterior) fontanel in the back. Between the frontal and parietal bones two coronal (sutura coronaria) and between the two parietal and occipital bone lambdoid sutures (sutura lamdoidea) are located.

Sutures join together to form fontanels - areas free of bones. **A greater fontanel** is rhombus shaped and formed by joining of frontal, saggital and coronal sutures between 4 bones (2 frontal and 2 parietal). **A lesser fontanel** is triangle shaped and formed by joining of sagittal and lambdoid sutures.

FETAL HEAD DIMENSIONS

1. **Lesser oblique dimension** – suboccipitobregmatic diameter: extends from the anterior angle of the greater fontanel to the

suboccipital fossa and measures 9,5 cm. Circumference of this dimension is 32 cm. In normal delivery, the fetus is born with a lesser oblique dimension.

2. Medium oblique dimension – suboccipitofrontal diameter begins in suboccipital fossa and extends to the frontal hairline, measures 9,5-10.5 cm, circumference of this dimension is 33 cm. In occiput posterior position (presentation) the fetus is born with this dimension.

3. Greater oblique dimension - occipitomental diameter - starts from the chin to the most prominent portion of the occiput, measures 13 cm, circumference of this dimension is 35 cm. The fetus is born in brow presentation.

4. Vertical Dimension – trachelobregmatic diameter - starts from the middle of the greater fontanel and ends in sublingual area. measures 9,5 cm. Circumference of this dimension is 33 cm. In anterior face presentation the fetus is born with this dimension.

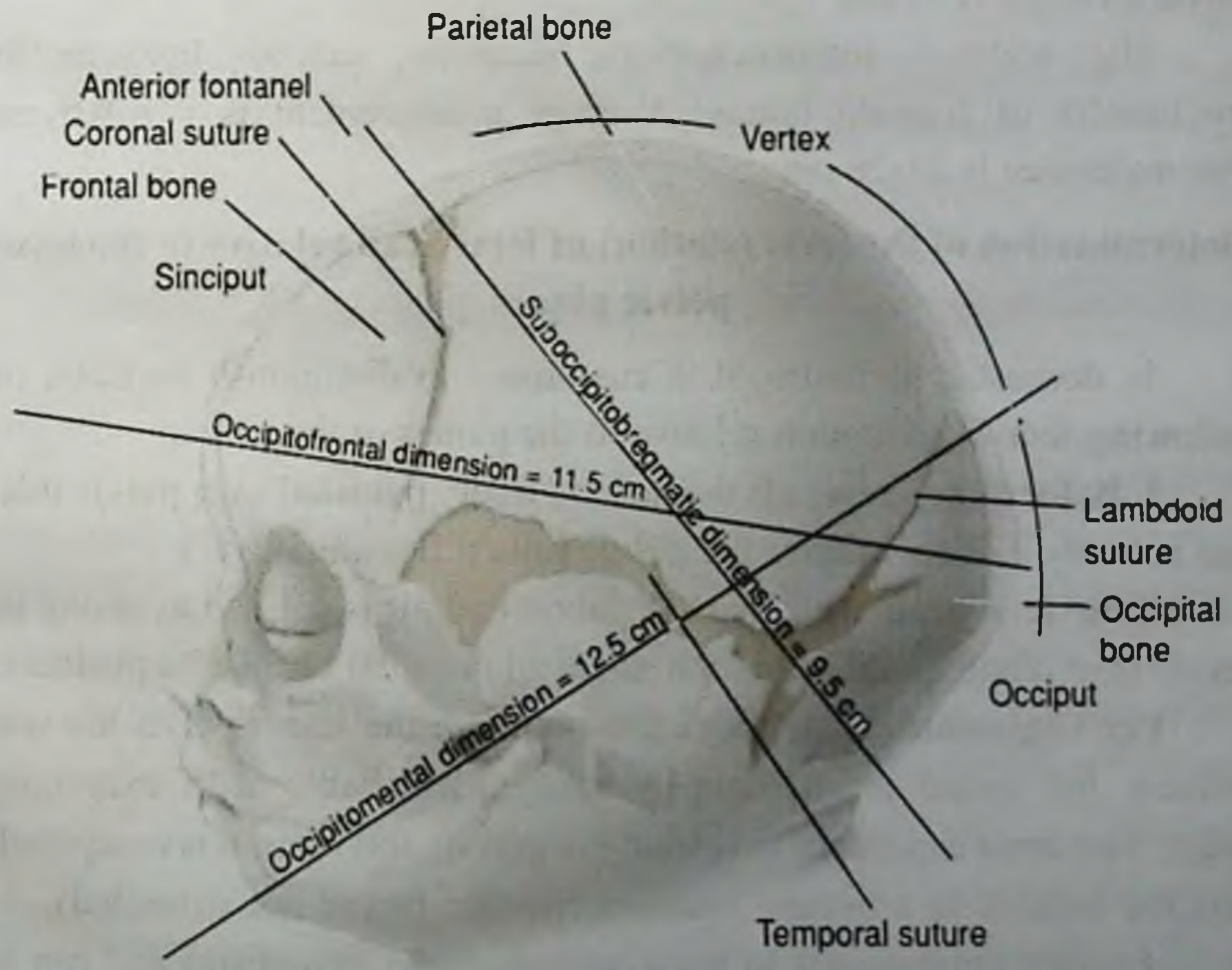


Figure 2.9. Fetal head and its dimensions

5. Straight dimension – occipitofrontal diameter distance from the glabella to the most prominent portion of the occipital bone. Measures 12 cm, circumference 34 cm (circumferential occipitofrontalis).

6. Greater transverse dimension – biparietal diameter extends between parietal bones and measures 9,25-9,5 cm and does not have a circumference.

7. Lesser transverse dimension – bitemporal diameter does not have a circumference and measures 8 cm. The distance between the farthest points of the coronal suture.

FETAL BODY DIMENSIONS

The height of a newborn baby should be 45 cm or more (average 50-52 cm), weight should be more than 2500 g (average 3-3,5 kg).

Shoulders width – biacromial diameter, the distance between the two acromial processes of the scapulae and measures 12.5 cm, its circumference is 35 cm.

Hip width – intertrochanteric diameter, extends between the trochanters of femoral bones. Average measurement is 9 - 9.5 cm, circumference is 27-28 cm.

Determination of the level (station) of fetal head relative to the lesser pelvic planes

In domestic literature, it is customary to distinguish between the following fetal head station relative to the planes of the pelvis:

I. Before engagement: the head is freely palpated over pelvic inlet, and is freely movable above the pelvic inlet ("floating head").

If the fetal head is engaged in pelvic inlet, it is defined as above the pelvic inlet plane, in this situation the head does not change its position.

Per vaginum: all identification points of the lesser pelvis are well defined, the sacral promontory is easily identifiable with examining finger. The inner aspects of the pubic symphysis and sacrum is completely free, the head is in a neutral position (neither flexed nor extended), the sagittal suture corresponds to transverse diameter (synclitic) and can be slightly lifted.

II: Lesser segment of fetal head has passed the pelvic inlet plane

The fetal head has entered the true pelvis with its lesser segment, and a greater part of head is located above the pelvic inlet plane. On external examination, head mobility is limited, fingers of examiner diverge while sliding over fetal head.

Per vaginum: ischial spines are easily determined; sacral curvature is freely examined. Sacral promontory is identified with examining finger, however in some cases it is necessary to bend the fingers under fetal head. The inner surface of the symphysis is free for examination.

4. **Greater segment of fetal head has passed the pelvic inlet plane**

On external examination, head is fixed and cannot be moved, fingers of examiner converge while sliding over fetal head. In some cases, the fetal head cannot be palpated over the pelvis.

Per vaginum: in internal examination, the upper 2/3 of sacral curvature is filled with head. In examination last sacral vertebrae, sacrococcygeal joint and the coccyx is identified. Laterally ischial spines, anteriorly interior lower half of surface of pubic symphysis is identifiable. The lowermost portion of the presenting fetal part is located at the level of ischial spines.

At this level the fetal head is fully flexed and its sagittal suture is in one of the oblique diameters.

IV. The head is in the pelvic cavity

In external examination the head is not palpated. The head has completed internal rotation and has reached the pelvic floor (the plane of pelvic outlet), at this point the fetal head is cutting in or cutting out of introitus (the sagittal suture is in the straight dimension).

Nowadays the station of the fetal head in birth canal is determined relative to the ischial spines, which are located in the middle of distance between pelvic inlet and outlet planes. This distance is divided into above and below the level of spines into fifths (about 1 cm each). When the presenting part of fetal head has reached the level of ischial spines then it is described as being at zero (0) level. Above this level the description is

from -5 to -1, and below this level +1 to +5. Station +5 cm corresponds to the fetal head being visible at the introitus.

Usually when the fetal head has reached the station "0", it has passed the pelvic inlet plane with its biparietal dimension.

Thus:

-5 – above the pelvic inlet plane

-4 – fetal head is engaged in pelvic inlet.

-3 – lesser segment of fetal head has passed the pelvic inlet plane

-2 – greater segment of fetal head has passed the pelvic inlet plane

-1 – the head is in the pelvic cavity.

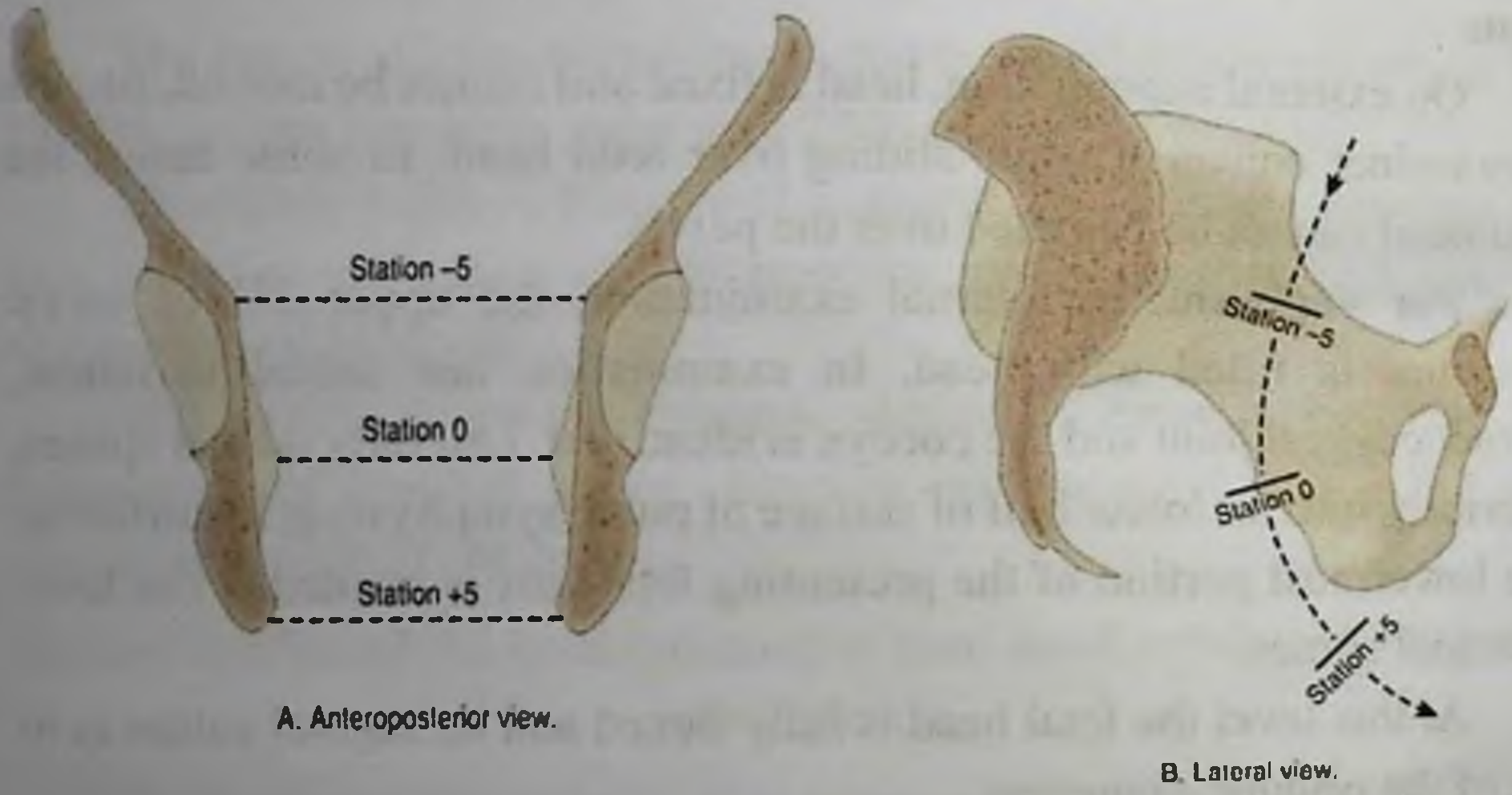


Figure 2.10. Station

Fetal habitus (attitude) - arrangement of small parts of the fetus in relation to the body and each other. Normally fetus gets an ovoid form that corresponds to the shape of uterine cavity. In occiput anterior presentation fetal gets bended and back becomes convex, his head flexes so that the chin is close to the chest. The arms are bent and are crossed over each other. The thighs are flexed over the abdomen; and the legs are bent at the knees. This habitus of fetus results from its accommodation to the uterine cavity.

Fetal lie – is the relation of the long axis of the fetus to the axis of uterine cavity.

Fetal long axis is a line that begins from the occiput runs along the spine to the upper limit of the intergluteal groove.

According to relation of this two axes fetal lie can be:

1. **Longitudinal** – when the long axis of the fetus corresponds to the axis of uterine cavity.
2. **Transverse** – when two axes intersect at right angles to each other.
3. **Oblique** – when two axes intersect at an acute angle (usually 45-degree)

Figure 2.11. *Fetal lie*

Fetal position - the relationship of the back of fetus to the right or left side of the mother's body. Accordingly, there may be two positions—right (II position) or left (I position). In transverse or oblique lie fetal positon is determined according to its head, head is in left side I position, in right side II position. In cases of face presentations fetal position is determined according to its chin (mentum).

In every position there is a **variety (visus) of position** - the relationship of the back of fetus to the anterior or posterior wall of uterus. Respectively anterior and posterior variety of position is distinguished.

Since there are two positions (right and left) and two varieties of positions (anterior, posterior) there must be six varieties of fetal position (left and right occiput ital (LO, RO), left and right mental (LM, RM) and left and right sacral (LS, RS).

In transverse fetal lie in left or right positions the back may be directed anteriorly or posteriorly, superiorly or inferiorly, so in transverse lie dorsoanterior and dorsoposterior variety of position is distinguished. But such specific differentiation serves no practical purpose such conditions simply referred as transverse lie or shoulder presentation.

Fetal presentation (praesentatio) – is the relationship of the large part of the fetus to the pelvic inlet. According to fetal lie cephalic, breech and shoulder presentations are distinguished.

Cephalic presentation - the fetal head is close to the pelvic inlet about 96% of all cases.

Breech presentation – when the fetal pelvis is close to the pelvic inlet.

Shoulder presentation – is seen in transverse lie of fetus.

Presenting part (pars praevia) is the part of fetus that lies over pelvic inlet. Presenting part passes first through the birth canal

Engagement (inclinatio) - the relationship of the sagittal suture to the pelvic inlet, precisely to its identification points – pubic symphysis and sacral promontory. Engagement is the way by which biparietal dimension (greater transverse dimension) of fetal head has passed through pelvic inlet plane.

In normal instances sagittal suture of fetal head corresponds to the transverse diameter of pelvic inlet that said it lies exactly midway between the pubic symphysis and the sacral promontory. This is called **synclitic** engagement. Any deflection of sagittal suture from transverse axis of pelvic inlet is called **asynclitism**.

Asynclitic engagement may be:

- **anterior (Naegele's asynclitism)** – sagittal suture is close to the sacral promontory and more of the anterior parietal bone is presented.
- **posterior (Litzmann's asynclitism) -** sagittal suture is close to the pubic symphysis and more of the posterior parietal bone is presented.

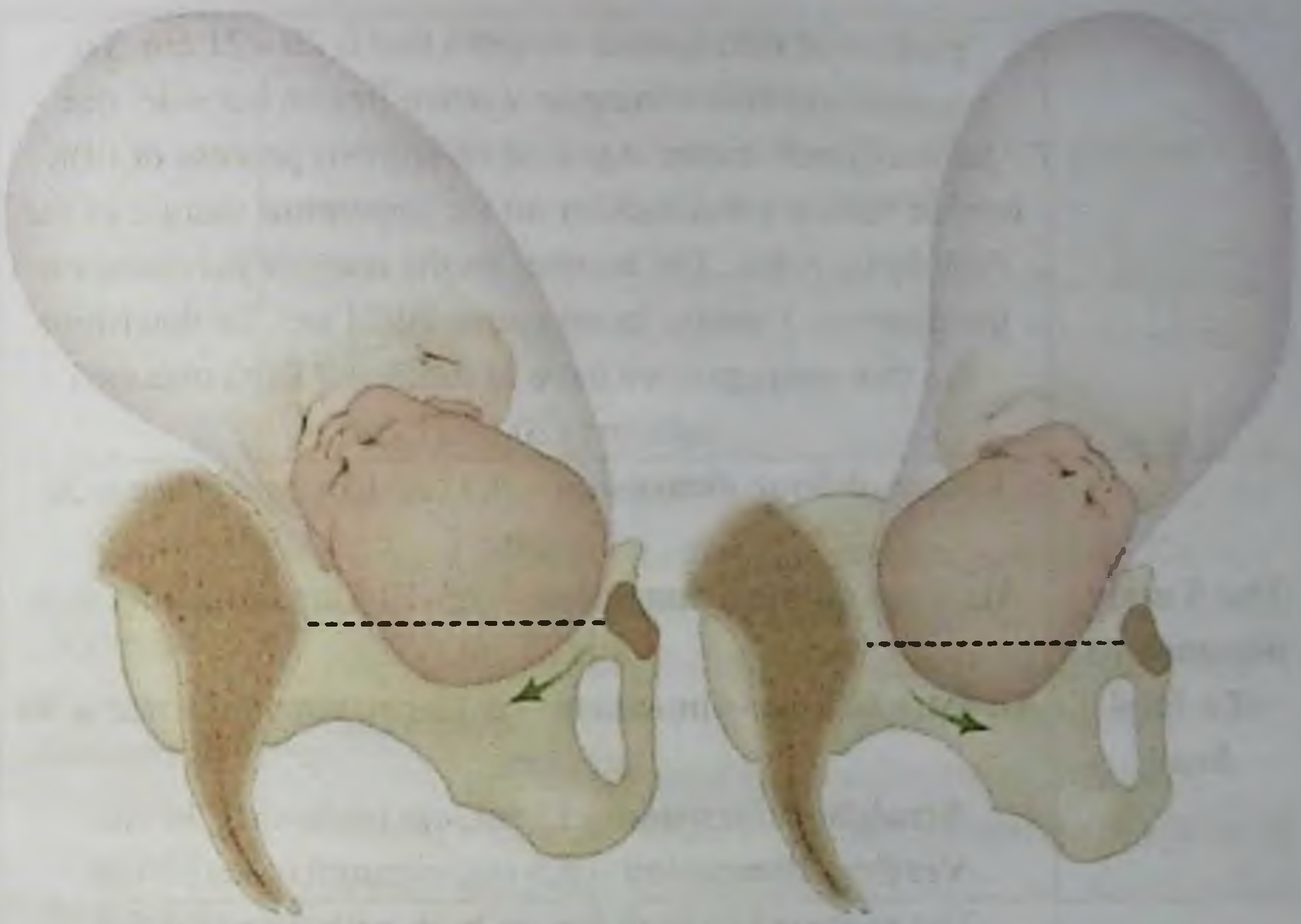


Figure 2.12. Posterior and anterior asynclitism

Subject-specific practical skills:

Practical skills	Examples of correct answers:
Pelvimetry	**Interspinous distance (*Distantia spinarum*)** is the distance between anterior superior iliac spines, and usually is 25-26 cm. **Intercristal distance *(Distantia cristarum)*** is the distance between furthest lateral points of iliac crests and usually is 28-29 cm. **Intertrochanteric distance *(Distantia intertrochanrterica)*** is the distance between the major trochanters of the femurs and is 31-32 cm. **External conjugate *(Conjugata externa)*** - from the uppermost margin of the symphysis pubis to the spinous

	process of fifth lumbar vertebra and is 20 - 21 cm. To measure external conjugate women lies on her side, one button of pelvimeter is placed on spinous process of fifth lumbar vertebra and another on the uppermost margin of the symphysis pubis. The number on the scale of pelvimeter is the distance. Usually its measures 20-21 cm. To determine the true conjugate we have to subtract 9 from obtained measure (20-9=11 cm).
The 5 main dimensions of a fetal head	**Lesser oblique dimension** – 9,5 cm. Circumference is 32 cm. **Medium oblique dimension** – 9,5-10.5 cm, circumference is 33 cm. **Greater oblique dimension** – is 13 cm, circumference is 40 cm. **Straight dimension** – 12 cm, circumference 34 cm. **Vertical Dimension** – 9,5 cm, circumference 33 cm.
Fetal heartbeat auscultation	The pregnant woman lies on back with extended feet. Stethoscope is placed on the clearest feeling of fetal movement on the anterior abdominal wall. One funnel shaped end of stethoscope is very tightly pressed on the pregnant's abdomen, on the second end of stethoscope a doctor puts his ear without touching it. Fetal heartbeats are most distinctly listened from the side of the back of fetus, to the left - at the first position, to the right - at the second position, below the umbilicus – at cephalic presentations, above – at breech presentation.
Estimation of internal pelvic sizes	The pregnant woman lies on back with legs bent in knees and hips. Vaginal examination is performed. First, the examiner inserts two fingers of right hand into the vagina and the sacral promontory is found. By the index finger of the left hand he marks a point on the right hand immediately under the lower margin of pubic symphysis. The fingers are taken out of vagina and the distance from the end of middle

	finger to the noted point is measured by pelvimeter or measuring tape. For estimation of obstetric conjugate, from the obtained size 2 cm is substracted.
External examination: Abdominal Palpation – Leopold Maneuvers	*The first maneuver:* method is used to determine which part of the fetus (head or breech) occupies the fundus of the uterus. *The second maneuver:* is used to determine the fetal positon and its variety: for this palms are placed on either sides of woman's abdomen and gentle pressure is applied. On one side the hard structure – back of fetus is palpated on another side numerous, small irregular parts are palpated – fetal extremities. Whether the back is directed anteriorly or posteriorly fetal positon is determined. *The third maneuver:* is performed by grasping with palm of one hand the lower part of woman's abdomen above pubic symphysis. The aim of this maneuver is to determine the fetal presentation (presenting part). *The fourth maneuver:* is performed to determine the station of the fetal presenting part. For this the examiner sits facing toward woman's feet and with tips of fingers of his hands performs a gentle pressure towards pelvic inlet between the presenting part and pelvic walls.

CHAPTER III.

METHODS OF EXAMINATION OF PREGNANT WOMEN

Taking a medical history is the first step in every patient examination. Anamnesis (in translation from Greek - aná, "open", and mnesis, "memory") is the taking information about the disease and its course by asking specific questions directly to the patient. During assessment of pregnant woman in detail obstetric anamnesis is taken. The information obtained is written down to the medical record of pregnant woman. A medical history is taken in special order:

1. **Passport data** – includes full name, age, job, place of work, address.

2. **Reasons (complaints)**, that forced a woman to present for the medical help (bloody disharge, pains in abdomen or back and so on).

3. **Social and family anamnesis**: heredity, psychical diseases, alcoholism, drug addiction, congenital diseases and other diseases which can be inherited or can had unfavorable influence on development of fetus.

4. Previous illnesses that can influence the course of pregnancy, labor and delivery; infectious diseases which can affect sexual development of girl, illnesses of liver, heart, lungs.

5. **Menstrual function:**

a) age of menarche (the first menstruation);

b) time of establishment of regular menstrual function;

c) duration of cycle;

d) duration of bleeding;

e) type of menstruation - painfull, recurrence, regularity;

f) bloodloss;

g) character of menstruations after the beginning of sexual life, births, abortions;

h) data of the first day of the last menstruation;

6. **Secretory function:**

a) presence of vaginal discharge;

b) quantity, character of the discharge (bloody, mucous, watery).

7. **Sexual function:**

a) age of beginning of sexual life;

b) marital status;

c) health of husband (alcoholism, tuberculosis, gonorrhoea, Syphilis);

d) use of contraceptives, duration, efficiency

e) presence of infertility in anamnesis, its duration, methods of medical treatment.

8. Reproductive function or obstetric anamnesis:

a) quantity of pregnancies;

b) result of every pregnancy: births, abortion, ectopic pregnancy, stillborn, features of motion of pregnancy, births, post-natal period;

c) quantity of living children, their weight at birth, features of development.

9. Gynaecological diseases, operations on the pelvic organs.

10.Course of the current pregnancy – presence of complications of pregnancy, treatment – outpatient or inpatient, efficacy, methods of medical treatment that were used.

11.Fetal movement:

a) at what term the first fetal movement was felt;

b) intensity and frequency of movement.

Evaluation of cardiovascular system

Changes during pregnancy and childbirth – pregnancy-induced body weight increase, blood volume increase, appearance of new uteroplacental blood circulation make serious demands on cardiovascular system.

In the second half of pregnancy and towards the end of pregnancy, diaphragm becomes elevated, which impacts the normal functioning of the cardiovascular system, reduces the work of the utero-placental blood circulation, reduces the lung volume, hinders blood circulation in lungs and displaces the heart to the left and upward making heart to rotate on its long axis.

Pregnancy-induced hemodynamic changes include substantive increases in blood volume (results from an increase in both plasma and erythrocytes), cardiac output and stroke volume, increase in heart rate.

Circulating blood volume - increases by 40-45% above the nonpregnant blood volume in 32-34 weeks. As the pregnancy progresses the cardiac output also increases from 5,5 liters to 6,4-7 liters/min. In the first half of pregnancy in 50% of pregnant women increase in heart rate, decrease in systolic and diastolic pulse pressure and from 6-7 months of pregnancy increase in diastolic pressure is observed. During the labor after rupture of membranes usually sharp decrease in blood pressure is observed.

In the second and third trimesters of pregnancy, a rapid icrease and decrease of blood pressure is noted.

Tachycardia is a temporary condition. Increase in heart rate decreases and disappears over time, as the woman's body adapts to new pregnancy-induced changes.

Increase in heart rate during the second stage of labor is associated with followings:

1. Increased physical stress;
2. Negative emotions (pain, fear);
3. Relative oxygen deficiency seen towards the end of the labor.

A decrease in the lung capacity is caused by dyspnea, which is caused by a metabolic disorder with a clear shift towards acidosis and relative hypoxia.

In pregnant women, in some cases, hypertrophy of the heart and an expansion of the left ventricle are observed, which develop gradually to which heart adapts. In the second half of pregnancy, in 30% of cases, auscultation reveals a soft, systemic murmurs at the apex of the heart and over the pulmonary artery, which is a functional change.

External obstetrical examination: pelvimetry, abdominal palpation – Leopold Maneuvers, auscultation of fetal heartbeat.

Pelvivetry

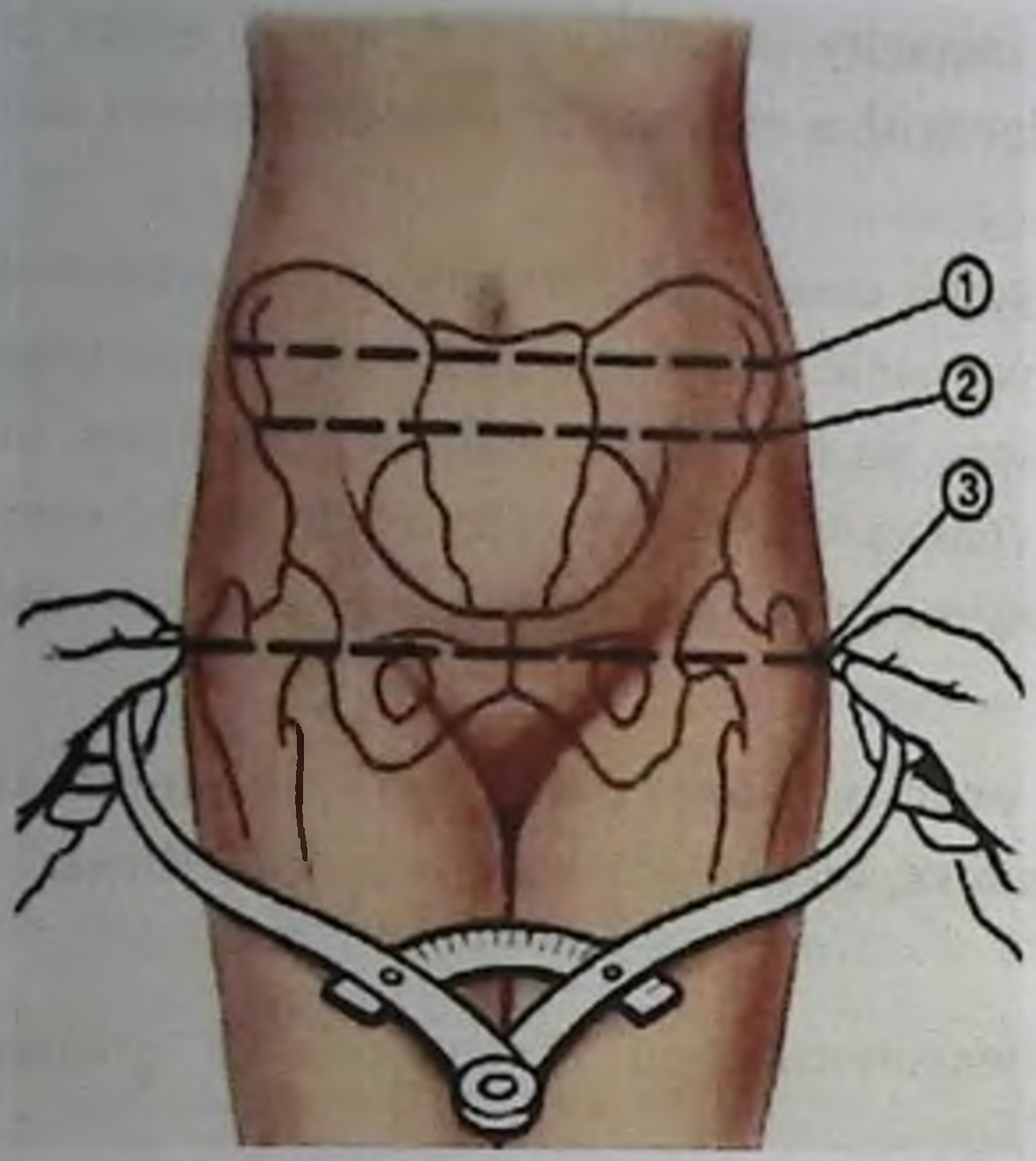
Pelvimetry includes measurement of dimensions of greater (false) pelvis:

1. Interspinous distance (*Distantia spinarum*) is the distance between anterior superior iliac spines, and usually is 25-26 cm.

2. Intercristal distance *(Distantia cristarum)* is the distance between furthest lateral points of iliac crests and usually is 28-29 cm.

3. Intertrochanteric distance *(Distantia intertrochanrterica)* is the distance between the major trochanters of the femurs and is 31-32 cm.

4. External conjugate *(Conjugata externa)* - (Baudelocque's dimension) from the uppermost margin of the symphysis pubis to the spinous process of fifth lumbar vertebra and is 20 - 21 cm. According to this dimension pelvic inlet measure can be determined (true conjugate).



1. Distantia spinarum

2. Distantia cristarum

3. Distantia trochanterica

Figure 3.1. *Pelvimetry*

Abdominal palpation – Leopold Maneuvers

Abdominal palpation – Leopold Maneuvers described by Leopold in 1894 are performed to determine fetal presentation, lie, position, attitude. For this a pregnant woman lies comfortably supine and bares her abdomen (Figire 3.2.). There are four maneuvers:

1. First maneuver is applied to identify the fetal presentation and lie, that said which fetal pole, cephalic or podalic occupies fundus of uterus.

2. With second maneuver fetal position and attitude are determined – the side of fetal back and small parts.

3. Third maneuver the part of fetus above the pubic symphysis is determined.

4. Fourth maneuver is performed to assess the degree of the fetal presenting part's descent.

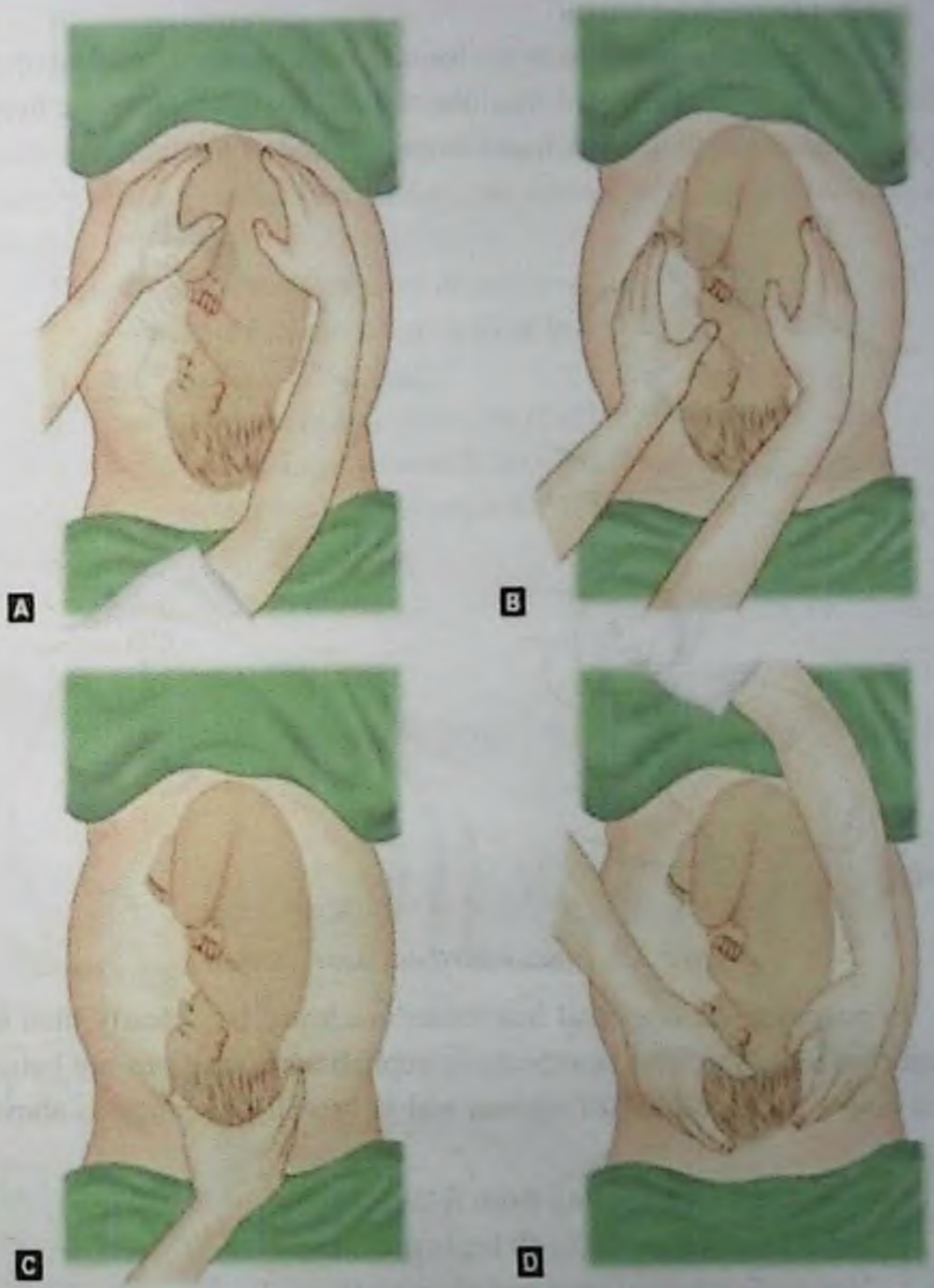


***Figure 3.2.** Abdominal palpation – Leopold Maneuvers*

Fetal heart auscultation

Fetal heart auscultation is performed with obstetric stethoscopes. Fetal heartbeat is better heard from the back of fetus, closer to the head. In deflected cases, they better heard from the chest of the fetus.

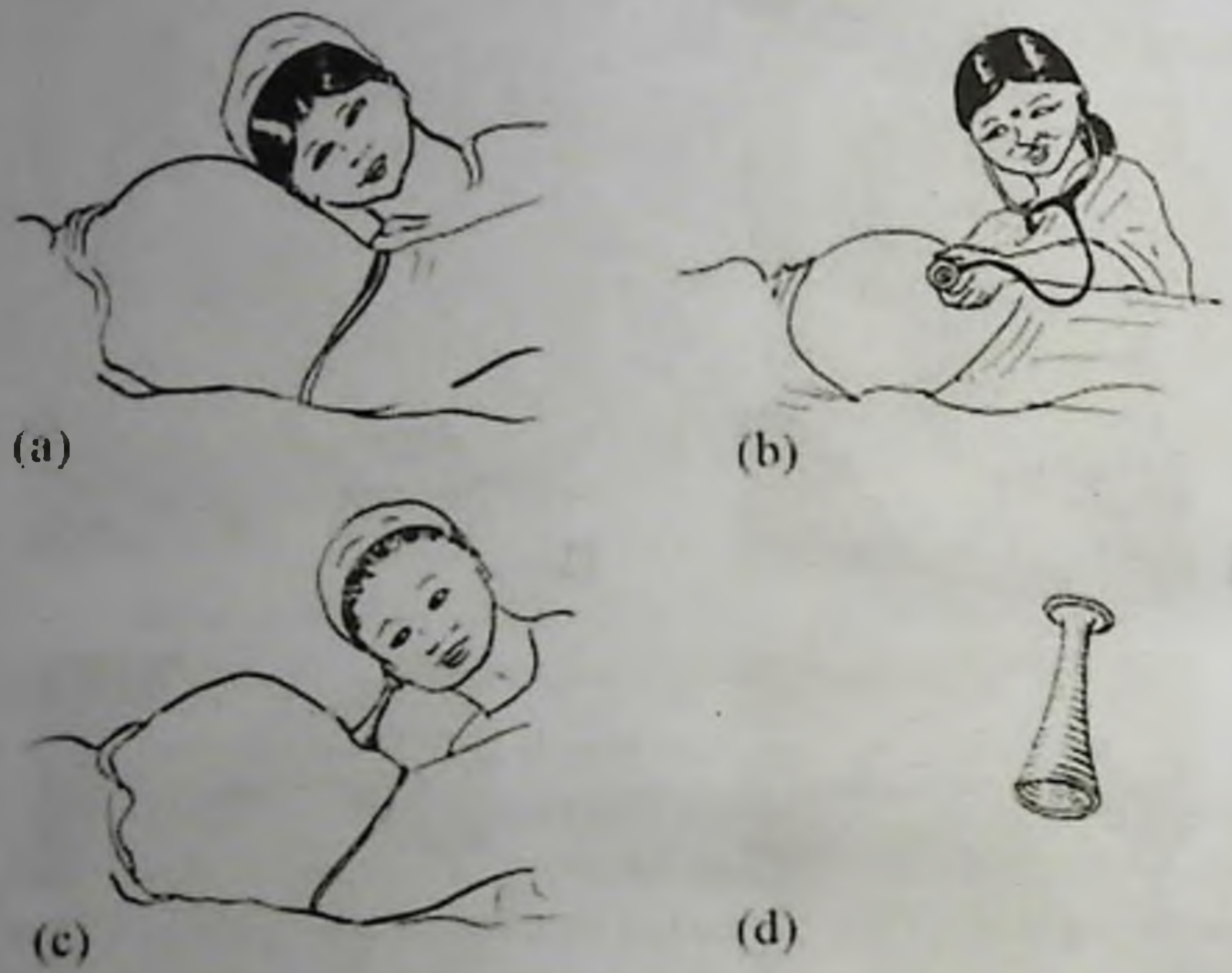


Figure 3.3. *Fetal heartbeat auscultation*

In posterior variety, fetal heartbeats are heard less clearly than in anterior variety. The fetal heartbeats in cephalic presentations are better heard below the umbilicus of woman and in breech presentations above it.

Sounds and noises coming from fetus:

1. Fetal heartbeats - 120-140 beats per minute
2. Noise of umbilical cord and placental vessels
3. Noise of fetal movements.

Sounds and noises coming from mother:

1. Intestinal peristalsis noises

2. Aortic sounds
3. Uterine vessels sounds corresponding to the pulse of mother

Decrease in fetal heartbeat rate to 110-140 (120-150) per minute is normal condition, physiological decrease in fetal heartbeat rate is always observed during uterine contractions (as a result of compression of blood vessels).

Signs of the threatened fetal distress.

1. Heartbeats rate more than 150 or less than 110 per minute.
2. Arrhythmia
3. Sharp increase in heartbeat rate (Gallop rhythm)
4. Increased fetal movements (convulsive)
5. Passage of meconium in cephalic presentations

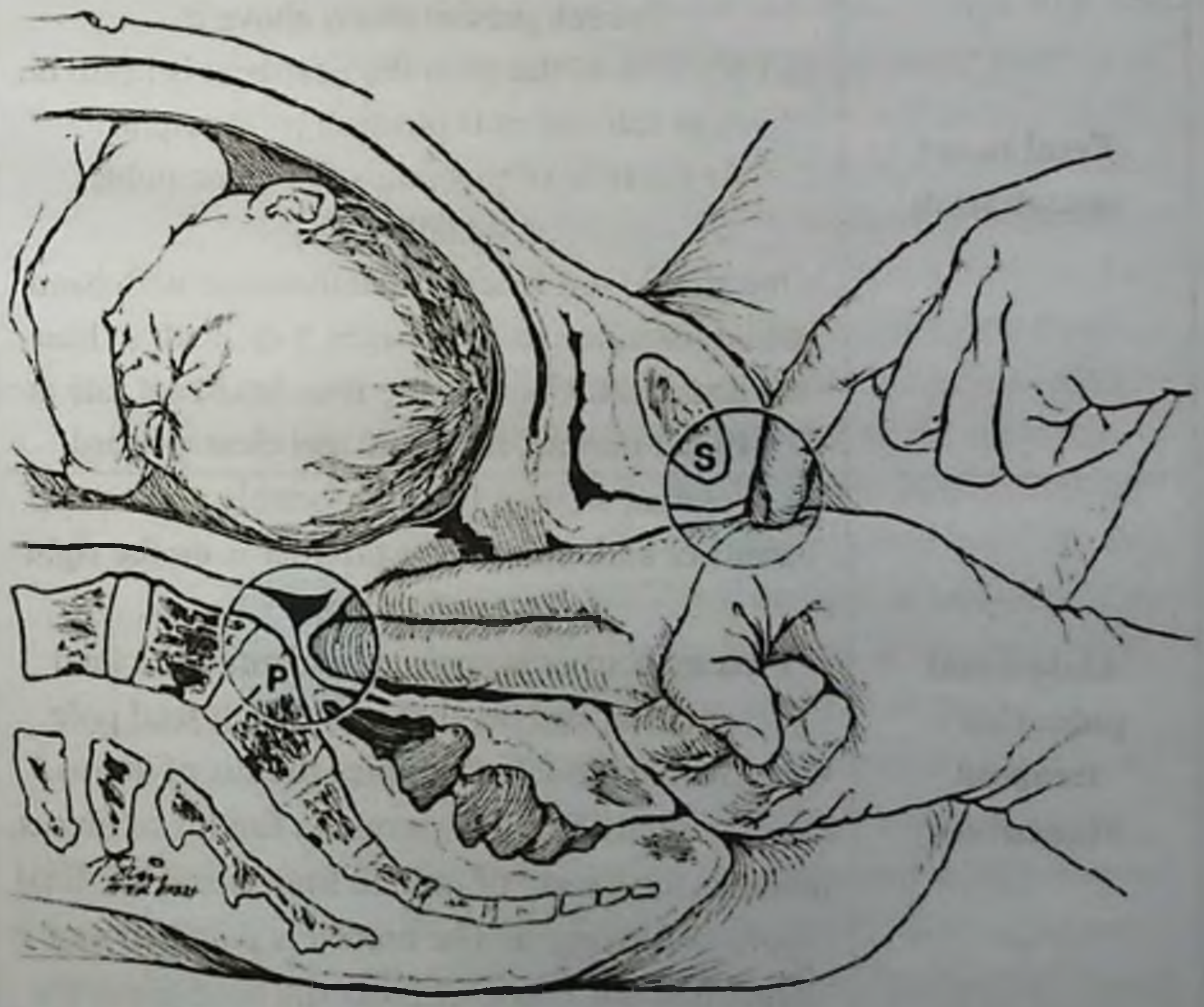


***Figure 3.4.** Vaginal examination to determine the diagonal conjugate*

Internal obstetrical examination: vaginal examination, measurement of diagonal conjugate.

Internal obstetrical examination - vaginal examination is performed to assess the cervix its effacement and dilatation, the station of presenting part and its position by palpating the various fetal sutures and fontanels. Face and breech presentations are identified by palpation of facial features and fetal sacrum, respectively.

And then to assess the pelvic inlet dimension diagonal conjugate is determined (Figure 3.4.).

Subject-specific practical skills:

Fetal heart auscultation	The fetal heartbeats in cephalic presentations are better heard below the umbilicus of woman and in breech presentations above it. In I position of the fetus the heartbeat is heard on the left and in II position on the right. At the time of pushing - above the pubic symphysis. One should not touch the stethoscope with hand while listening, as this makes it difficult to hear the heartbeat. Usually, the fetal heartbeat rate is 140 per minute, rhythmic and clearly heard.
Abdominal palpation – Leopold Maneuvers	A pregnant woman lies comfortably supine and bares her abdomen. The examiner is on the right side of woman. First maneuver is applied to identify the fetal presentation and lie, that said which fetal pole, cephalic or podalic occupies fundus of uterus. Examiner puts both palms on the fundus of uterus, assesses the height of uterine fundus and the fetal pole occupying it. The breech is palpated as a large, nodular mass, whereas the head gives the

	sensation of mobile and ballottable, hard and round body. With second maneuver fetal position and attitude are determined – the side of fetal back and small parts. Examiner puts both palms on the either side of the pregnant woman and performs deep palpation. If during palpation a hard, resistant structure is felt then it is the fetal back. On the other side the fetal extremities - numerous small, irregular, mobile parts are palpated. By third maneuver the part of fetus occupying the the lower portion of the maternal abdomen is determined. For this the examiner grasps with one hand the part of fetus occupying lower portion of the uterus just above the pubic symphysis. If the movable part is palpated, then it is a fetal head. Fourth maneuver is performed to assess the degree of the fetal presenting part's descent. For this the examiner stands on the rightside of woman facing her legs, puts his palms of his hands on the lower portion of the maternal abdomen and applies deep pressure downward between presenting part and pelvic brim. By this the degree of fetal head descent is assessed. If the fetal head is already in pelvic cavity, then fetal shoulders are readily palpated.
Determination of diagonal and true conjugate	A pregnant woman lies comfortably supine and opens her legs and vaginal examination is performed. For this the index and middle fingers of the right hand are inserted to the vagina until they touch the sacral promontory, then the thumb of the right hand is placed just to the lower edge of symphysis pubis. The doctor makes a mark in

	this place and the assistant measures this distance. Obtained length is the diagonal conjugate (normally 13 cm). If we subtract half the width of the pubic bone from length of diagonal conjugate we get the true conjugate, which usually measures 11 cm.
Take the phantom (pelvis) and a doll and show the fetus in Longitudinal lie. Breech presentation. Right sacrum anterior. Where is the fetal heartbeat heard?	Longitudinal lie - fetal axis corresponds the pelvic axis. Breech presentation - buttocks are on pelvic inlet. Right sacrum anterior: Right position (II position) – the back of the fetus is on the right side and anterior variety the back of the fetus is in front. Auscultation - above the umbilicus, on the right

CHAPTER IV.

WOMEN'S COUNSELING (CONSULTATION) FACILITY. SYMPTOMS OF PREGNANCY AND ITS DIAGNOSTICS ORGANIZATION OF WOMEN'S COUNSELING FACILITY AND ITS WORKING PRINCIPLES

Women's counseling facility: is a recognized facility for providing comprehensive assistance to women in all stages of their lives approved by the healthcare system of the Republic of Uzbekistan.

Duties of Women's Counseling facility

1. To provide therapeutic and prophylactic care to women during pregnancy, after childbirth and in cases of gynecological disease.
2. Conducting continuous monitoring of pregnant women and patients with gynecological diseases and providing them with specialized care.
3. To provide psycho-prophylactic preparation of pregnant women for childbirth.
4. To learn the working conditions of women for protection of health of pregnant women and antenatal care of the fetus, as well as to provide for prophylaxis of gynecological diseases.
5. Prevention of abortions.
6. Cancer preventive medical examinations.
7. Social and legal assistance
8. Sanitary-educational work and hygienic education.

The population of each facility should not exceed 3,500.

Structure of women's counseling facility

1. Registration.
2. Waiting room.
3. Dressing room.
4. Toilet.

5. Reception department for pregnant women and pregnant women with gynecological diseases.

6. Procedure room.

7. Room for psycho-prophylactic preparation of pregnant women for childbirth.

8. Rooms for doctors and specialists - dentists, therapists, neuropathologists.

9. Special reception rooms for pediatric gynecology, pathologies of menopause, infertility treatment.

Working principles

The work of doctors attached by the facilities of obstetrics and gynecology began to be reorganized in alternative system. For a certain period of time, the doctor serves two regions, working for at least 5-6 months. Consultation hours must be set at convenient times so that the working women should have the opportunity to go for a medical examination after hours. A flexible schedule should be used, with reception in the morning and evening hours. The doctor should ensure that pregnant women attend the doctor in the early pregnancy terms up to 3 months and visit him 7-8 times before delivery and 1-2 times after delivery. In the second half of pregnancy, a woman should visit doctor once a month.

Each pregnant woman is registered, patronage is determined, and sanitary and educational work is carried out with her. The consultation carries out systematic monitoring of the pregnant woman during her pregnancy, followed by repeated visits and monitoring of the fulfillment of the doctor's instructions.

PSYCHOPROPHYLAXIS OF PREGNANT WOMEN FOR CHILDBIRTH

Analgesia in labor has turned from a theoretical public problem to a national concern. The doctrine of I.P. Pavlov's proved that pain sensations are perceived, analyzed and synthesized in the cerebral hemispheres. Researchers have proved the presence of baro-, mechano-, chemical and

thermoreceptors in the uterus. The highest apparatus of pain perception is the cerebral hemispheres. Physical and chemical stimuli can be used to change the sensitivity of the senses and the corresponding reactions of the body.

For a person, the words play the role of a strong and solid link, the main stimuli, with the help of which a new conditioned reflex is formed.

Psychoprophylactic training of pregnant women is an integrated system, part of the antenatal and intranatal care.

Training of a pregnant women can be conducted individually and as group work (5-6 people). It is necessary to have a separate room for this purpose. Classes are held every 4-5 days from 32-33 weeks of pregnancy in a total of 5-6 lessons.

Lesson I - general, is related to self-treatment, obstetrical-neurological condition, attitude to the unborn child, identification of fears and anxieties, raising the idea of the possibility of painless or slightly painful childbirth, making sure of the positive outcomes of the childbirth.

Lesson II - it is necessary to explain that childbirth is a physiological process. The doctor will tell about the uterus, vagina, external genitalia, pelvic floor muscles, pelvic bone structure, menstrual function, fetus, structure of placenta, amniotic fluid.

Lesson III – acquaints with the stages of the labor, the mechanisms of cervix dilatation, the frequency and duration of contractions. Information about the correct behavior of a woman in labor, in which cases analgesia is used is given.

Lesson IV - familiarization with the physiological essence and techniques of analgesia.

1. Deep breathing technique - rhythmic breathing during contractions.

2. Deep breathing technique combined with massaging the lower abdomen or lower back.

3. Combining deep breathing technique with pressure on "pain points".

Lesson V - physiology of the second and third stages of labor.

Lesson VI - familiarization with the rules of admission to the maternity ward.

CHECKUP OF WOMEN WITH GYNECOLOGICAL DISEASES

Checkup is prescribed to women with gynecological diseases and they are sent to outpatient or inpatient examination, where they are examined for inflammatory diseases and sexually transmitted infections. Women with inflammatory diseases are registered and monitored.

Prophylactic checkup – is performed at least once a year, for timely detection of oncological diseases.

Regulatory documents:

1. Individual card of pregnant and postpartum women
2. Statistical voucher for registration of final diagnoses
3. Procedure sheet
4. Dispensary monitoring control card
5. Register of patients for hospitalization
6. Register of issued certificates of incapacity for work
7. Exchange card
8. Card of the patient being treated in the physiotherapy department
9. Patronage nurse's notebook
10. Doctor's work sheet
11. Record book of work of social and legal cabinet
12. Protocol for identifying malignant tumors in a patient

SIGNS OF PREGNANCY

1. Presumptive
2. Probable
3. Positive

Presumptive signs – associated with the subjective feelings of the woman: vomiting, salivation, changes in appetite, taste whims and changes (dysgeusia), heightened smell. In an objective examination there is skin pigmentation, hyperpigmentation of linea alba of the abdomen,

pigmentation of the areolae, pregnancy marks, etc., which can also be the evidence of some gynecological diseases.

Figure 4.1. *Early pregnancy signs*

Probable signs (related with changes in genitalia and breasts) - amenorrhea, breast tenderness, colostrum secretion.

Vaginal signs of pregnancy:

1. Loosening of vaginal and cervical mucosa which gets violet color cervix - **Skrobansky's sign**.

2. Bulging of the either of uterine cornua in the place of zygote implantation - **Piskacek's sign**.

3. During bimanual examination, under the mechanical irritation the soft pregnant uterus becomes denser - **Snegirev's sign.**

4. In bimanual examination the examining fingers easily meet each other at the level of isthmus, as a result of softening of the pregnant uterus and dense cervix - **Hegar's sign.**

5. In the early stages of pregnancy, during the vaginal examination, there is a cristate protuberance on the anterior uterine wall - **Genter's sign I**

6. As a result of softening of the isthmus of the pregnant uterus, there is an anterior flexion of the uterine fundus - **Genter's sign II**.

7. Easy mobility of the dense cervix as a result of the softening of the isthmus – **Gubarev-Gauss's sign.**

8. As a result of softening of the isthmus, the cervix can be brought closer to the uterine body - **Roussin's sign**

Positive signs - these are directly related with developing fetus.

1. Fetal movement – are felt by nulliparas after 20 weeks of gestation and by multiparas after 18 weeks of gestation.

2. Hearing the fetal heartbeat (120-140 beats per minute, normal limits between 110-170 beats per minute)

3. Identification of parts of the fetus - in the second half of pregnancy, the head, back, and small parts are identified.

4. Ultrasonography identification of the fetus or the fertilized egg.

Determination of the pregnancy duration

1. By the growth of the uterus:

a. At the end of 1st month (4 weeks) – the uterus has the size of a hen egg, it is almost impossible to determine

b. At the end of the 2nd month – it has the size of a woman's fist or a duck egg.

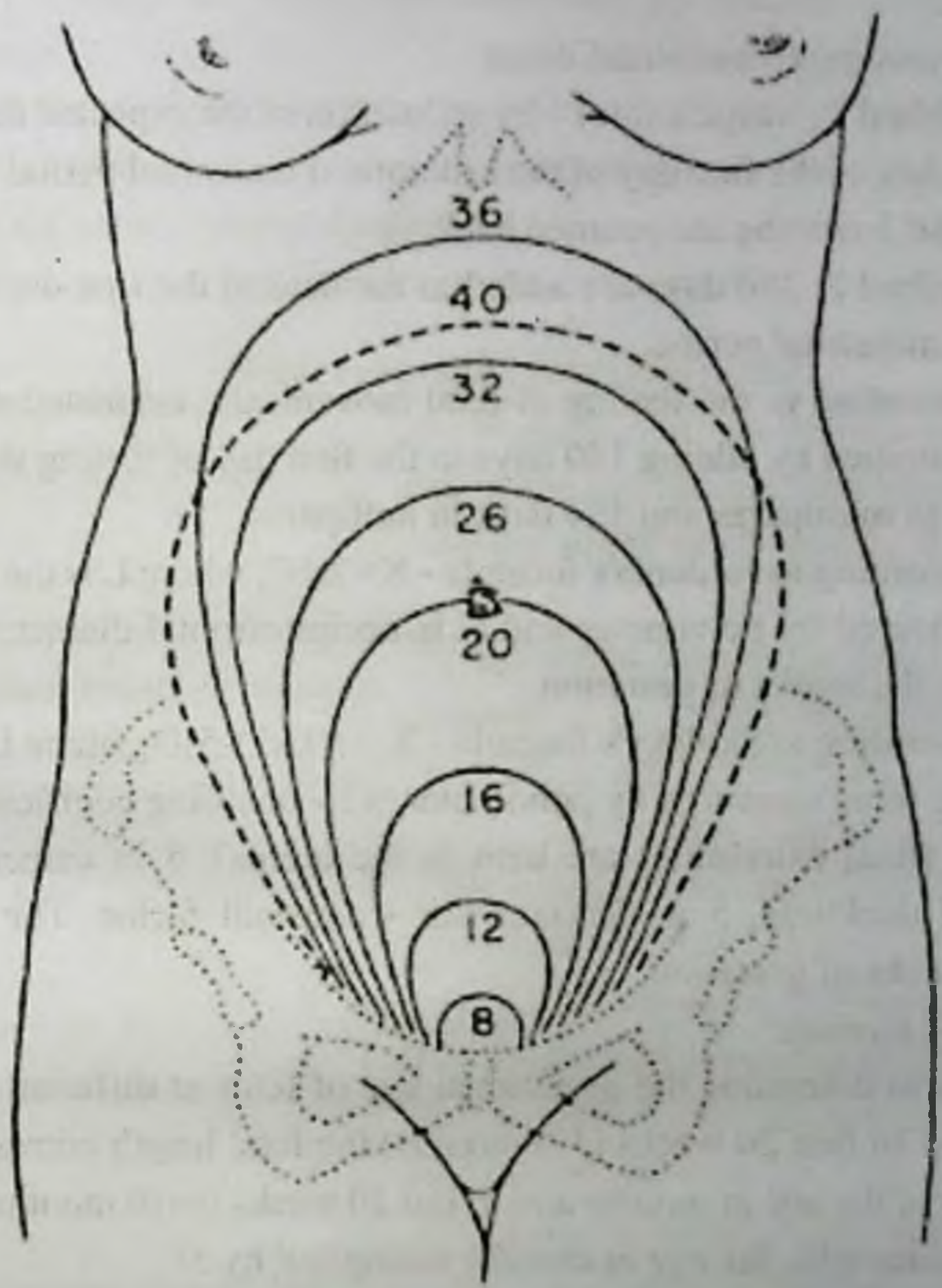
c. At the end of the 3rd month – the size of a man's fist.

d. At the end of the IV month (16 weeks) uterine fundus is 6 cm above the pubic symphysis or in the midway between the pubic symphysis and the umbilicus.

e. At the end of V month (20 weeks) – uterine fundus is 2 finger width below the level of umbilicus or 11-12 cm above the pubic symphysis.

f. At the end of VI month (24 weeks) - uterine fundus is at the level of umbilicus or 22-24 cm above the pubic symphysis.

g. At the end of the VII month (28 weeks) - uterine fundus is 2 finger width above the level of umbilicus or 28 cm above the pubic symphysis.



a. At the end of the VIII month (32 weeks) - uterine fundus is in the midway between the umbilicus and xiphoid process, or 32 cm above the pubic symphysis.

b. At the end of the IX month (36 weeks) - uterine fundus is at the level of xiphoid process, or 36 cm above the pubic symphysis.

c. At the end of X month (40 weeks) - uterine fundus is in the midway between the umbilicus and xiphoid process, or 32 cm above the pubic symphysis.

4.1. Approximate height of the fundus at various weeks of pregnancy.

2. According to menstrual dates:

a. Method 1 (Naegele rule) – by estimation of the expected delivery date: to the date of the first day of the last normal menstrual period 7 days are added and 3 months are counted back.

b. Method 2: 280 days are added to the date of the first day of the last normal menstrual period.

3. According to the feeling of fetal movements: estimated date of birth is determined by adding 140 days to the first day of feeling the fetal movements in multiparas and 154 days in nulliparas.

4. According to Jordania's formula - X= L+C, where L is the length of fetus measured by pelvimeter and C is occipitofrontal diameter. The result shows the weeks of gestation.

5. According to Skulsky's formula - X = ((Lx2)-5)/5, where L is the length of the fetus measured by pelvimeter, x2 - doubling coefficient for fetal length (fetal extremities are bent in the uterus), 5 in numerator - uterine wall thickness, 5 in denominator - constant factor. The result shows the weeks of gestation.

Haase's formula:

Allows to determine the gestational age of fetus at different stages of pregnancy. In first 20 weeks (1-5 months) the fetal length corresponds to the square of the age in months and in last 20 weeks (6-10 months) fetal length correlates with the age in months multiplied by 5/

1x1=1 cm
2x2=4 cm
3x3=9 cm
4x4=16 cm
5x5=25 cm
6x5=30 cm
7x5=35 cm
8x5=40 cm
9x5=45 cm
10x5= 50 cm

Women's Counseling Facility Indicators

1) Timely detection and treatment of women with pregnancy pathology.

2) Indicator of early pregnancy detection rate (%)

3) Indicator of errors in pregnancy diagnosis (%)

4) Late pregnancy diagnosis

5) Correct organization of gynecological care

Subject-specific practical skills:

Estimation of date of birth	By Naegele rule – to the date of the first day of the last normal menstrual period 7 days are added and 3 months are counted back. By adding 14 days to the first day of last menstrual period (approximate date of ovulation and fertilization) and adding 280+7 days. By adding to the day of the first fetal movement 20 weeks in nulliparas and 22-23 weeks in multiparas.
Determination of the pregnancy duration according to the height of uterine fundus:	It is determined according to the height of uterine fundus. For this pregnant woman lies supine and with the edge of the palm the examiner identifies the station of the uterine fundus. 1. At the end of 1st month (4 weeks) – the uterus has the size of a hen egg, it is almost impossible to determine 2. At the end of the 2nd month – it has the size of a woman's fist or a duck egg. 3. At the end of the 3rd month – the size of a man's fist.

	4. At the end of the IV month (16 weeks) uterine fundus is 6 cm above the pubic symphysis or in the midway between the pubic symphysis and the umbilicus. 5. At the end of V month (20 weeks) – uterine fundus is 2 finger width below the level of umbilicus or 11-12 cm above the pubic symphysis. 6. At the end of VI month (24 weeks) - uterine fundus is at the level of umbilicus or 22-24 cm above the pubic symphysis. 7. At the end of the VII month (28 weeks) - uterine fundus is 2 finger width above the level of umbilicus or 28 cm above the pubic symphysis. 8. At the end of the VIII month (32 weeks) - uterine fundus is in the midway between the umbilicus and xiphoid process, or 32 cm above the pubic symphysis. 9. At the end of the IX month (36 weeks) - uterine fundus is at the level of xiphoid process, or 36 cm above the pubic symphysis. 10. At the end of X month (40 weeks) - uterine fundus is in the midway between the umbilicus and xiphoid process, or 32 cm above the pubic symphysis.
Determination of the pregnancy duration according to menstrual dates:	1. Method 1 (Naegele rule) – by estimation of the expected delivery date: to the date of the first day of the last normal menstrual period 7 days are added and 3 months are counted back.

	2. Method 2: 280 days are added to the date of the first day of the last normal menstrual period.
Determination of the gestational age according to Haase's formula:	Allows to determine the gestational age of fetus at different stages of pregnancy. In first 20 weeks (1-5 months) the fetal length corresponds to the square of the age in months and in last 20 weeks (6-10 months) fetal length correlates with the age in months multiplied by 5/ 1x1=1 cm 2x2=4 cm 3x3=9 cm 4x4=16 cm 5x5=25 cm 6x5=30 cm 7x5=35 cm 8x5=40 cm 9x5=45 cm 10x5= 50 cm
Determination of the pregnancy duration according to feeling of fetal movement	Estimated date of birth is determined by adding 140 days to the first day of feeling of fetal movements in multiparas and 154 days in nulliparas.

CHAPTER V.

BIOMECHANISM OF NORMAL LABOR

The cardinal movements (moments) of labor

1. Exercises in phantom. Analysis of all cardinal movements of labor in occiput anterior and posterior presentations.

2. Study and understanding of the cephalic segments by students, their station in the pelvic cavity and determination of the boimechanism of labor by vaginal examination.

Visual guides: tables, drawings, related equipments (pelvimeter, tape measure), pelvis, doll.

The concept of the biomechanism of labor

Normal biomechanism of labor – is a labor in occiput anterior presentation (the head and back of fetus are facing anterior).

Biomechanism of labor - this is a sequence of movements of fetus (presenting part) during the passage through the birth canal during the labor.

Leading axis – the axis through which the fetus passes the birth canal.

Leading point - the point in the presenting (leading) part of fetus that first enters the pelvic inlet, always moves in front during internal rotation, is the first seen in the pelvic outlet and is located under the pubic symphysist. It moves along the pelvic axis during passage.

Fulcrum point (Punctum fixum, hypomochlion) – is the support point in presenting part around which the head undergoes extension.

Normal biomechanism of labor (Biomechanism of labor in occiput anterior presentation)

The cardinal movements:

1. Flexion of the head (flexio capitis)
2. Internal rotation (rotation capitis interna)
3. Extension of the head (deflexio capitis (extensio)

4. External rotation (restitution) of the head (rotatio capitis externa)

Figure 5.1. Biomechanism of normal labor

In external rotation of the head simultaneous internal rotation of the shoulders occurs (restitution). Shoulders from oblique diameter turn to straight diameter of pelvic outlet.

1st moment: the head in pelvic inlet is flexed so that the chin contacts the fetal thorax, the sagittal suture is set synclitic to the transverse dimension.

2nd moment: the head continues to descend and makes an internal rotation in the plane of greatest pelvic dimensions (wide part of the lesser pelvis) in such manner that the occiput gradually moves toward the pubic symphysis (normal rotation - occiput anterior), the sagittal suture at the beginning from the transverse dimension turns to one of oblique dimension and the second moment is completed by turning of sagittal suture from one of the oblique dimension to the straight dimension of pelvic outlet.

3rd moment: the occipital fossa approaches the lower edge of the pubic symphysis where it finds the support point (fulcrum point) around which the head starts to extend and the bregma, face and chin of the fetus appear in succession over the perineal body.

4th moment: the external rotation of the head (restitution) and simultaneous internal rotation of the shoulders occur. The head is born with a with a lesser oblique dimension (d=9,5 cm, circumference 32 cm).

Lead point is a lesser fontanel.

The fulcrum point - the support point around which the head extends or flexes (face presentation). In normal labor the fulcrum point for the fetus is the occipital fossa and for the mother the lower margin of the pubic symphysis.

Theory explaining the mechanism of labor (according to Krassovsky)

1. moment **the flexion** of the head is explained by the fact that the vertebral column is attached to the head eccentrically that is, closer to the occiput of the head and different levers are formed - a short lever occipital

part of head and long lever frontal part of head. When the uterus contracts, the force is transferred through the vertebral column to the head and the short lever – occiput descends and the longer lever – chin moves closer to the thorax. As a result, head flexion occurs.

2. moment – **internal rotation** is explained by accommodation of fetal head to the dimensions of pelvis. That said in pelvic inlet it accommodates the longest diameter (transverse), in pelvic cavity oblique (longest diameter) and in pelvic outlet – straight (by backward tilt of coccyx).

3. moment – **extension** due to the interaction of two forces, first exerted by the uterus from above and the resistance of the pelvic floor muscles from below. The resultant vector is directed toward vulvar opening.

4. moment – at the moment of extension of head shoulders are in transverse diameter of pelvic inlet and when they turn to oblique and then to straight diameter the external rotation of head occurs.

Causes of occiput posterior presentations:

1. Lesser dimensions of the fetal head
2. Difficulties in flexing of the neck area
3. Anomaly of the pelvic floor muscles

Biomechanism of labor in occiput posterior presentations

Composed of 5 moments (movements):

1. Flexion of the head (flexio capitis)
2. Internal rotation (abnormal) (rotation capitis interna)
3. Additional strong flexion of the the head
4. Extension of the head (deflexio capitis (extensio)
5. External rotation of the head (restitution) (rotatio capitis externa)

The head is flexed in pelvic inlet and the sagittal suture corresponds to the transverse diameter. As the head reaches the plane of greater pelvic dimensions it makes abnormal internal rotation so that the occiput turns posterior and sagittal suture turns to one of oblique diameters. In the

process of internal rotation, the head is slightly extended, the second moment ends when the sagittal suture is on the straight diameter of pelvic outlet.

As the head reaches the lower edge of the pubic symphysis with its hairy border or the anterior edge of greater fontanel, under uterine contractions it starts to flex even more until the occipital protuberance is born under perineum.

When the occipital protuberance is born, the fixing point moves to the suboccipital fossa. Fixed on the coccyx with the suboccipital fossa the head starts to extend and the face of the fetus is born under the pubic symphysis. After that 5th moment - the external rotation of the head and the internal rotation of the shoulders occur.

The head is born with medium oblique dimension, diameter - 10.5 cm, circumference - 33 cm.

Leading point – midway between greater and lesser fontanels (midpoint of sagittal suture).

Fulcrum point – 1) the hairy border of forehead, 2) suboccipital fossa

Complications - the frequency of perineal lacerations is 1% in occiput posterior presentations. Labor ends by itself, but is prolonged with the long station of head in pelvic cavity, perineum is stretched and usually lacerated. Prolonged labor, increased pressure in the birth canal, maximal flexion of the head lead to fetal asphyxia.

Mechanism of shoulders delivery

It occurs in the same mechanism as the head, that is, shoulders enter the pelvic inlet in transverse or one of the oblique diameters and descends to pelvis in this position until they reach the pelvic floor (pelvic outlet), there they adjust to the straight diameter. After the delivery of the head, the anterior shoulder is fixed under the pubic symphysis and shoulders are delivered. One should remember that the delivery of shoulders always leads to overdistention of the vulvar ring,

which should be taken into account in management of second stage of labor (perineal support). To do this, it is needed to deliver the anterior shoulder first, then the posterior shoulder. By the delivery of the fetus the second stage of labor (expulsion of the fetus) ends and the third period (delivery of the placenta) begins.

Mikhnov's teachings about the mechanism of labor

According to Mikhnov's teachings the head does not face any obstacles in the birth canal (pelvic cavity), as it should not be considered as a spherical or ellipsoidal body, as is usually accepted, but as a kidney-shaped, that is, the curvature of the head corresponds to the pelvic curvature.

Line of head curvature a kidney-shaped fetal head has 2 poles, one of them is chin the second one is occiput. These two poles are joined with an imaginary "line of head curvature" having an arcuate shape, with the curvature facing to the large fontanel.

Causes of labor movements

1. **Flexion of the head** – the force generated under muscular contractions is first transmitted to the vertebral column and through it to the head. Theory of A.L. Krassovsky.

2. **Internal rotation of the head** – is explained as the law of adaptation to the shape of pelvis.

3. **Extension of the head** – is the result of interaction of two opposing forces. The uterine contractions from above and perineal resistance from below.

4. **External head rotation-** mainly explained by the rotation of the shoulders. The shoulders, successively shift through pelvic inlet (transverse diameter), into pelvic cavity (oblique diameter) and then to pelvic outlet (straight diameter) by a rotational movement according to which the external rotation of the head occurs. The rotation of the body, accordingly of the shoulders passing through the birth canal contributes to external rotation of the head.

Subject-specific practical skills:

Determination of normal and contracted pelvises dimensions: **1.** Interspinous distance (*Distantia spinarum*) - 25-26 cm, Intercristal distance *(Distantia cristarum)* - 28-29 cm, Intertrochanteric distance *(Distantia intertrochanrterica)* – 30-31 cm, External conjugate *(Conjugata externa)* - 20 cm.	Normal pelvic dimensions
2. Interspinous distance (*Distantia spinarum*) – 24 cm, Intercristal distance *(Distantia cristarum)* – 26 cm, Intertrochanteric distance *(Distantia intertrochanrterica)* – 28 cm, External conjugate *(Conjugata externa)* - 18 cm.	Generally contracted pelvis
3. Interspinous distance (*Distantia spinarum*) – 24-25 cm, Intercristal distance *(Distantia cristarum)* – 25-26 cm, Intertrochanteric distance *(Distantia intertrochanrterica)* – 28-29 cm, External conjugate *(Conjugata externa)* - 20 cm.	Transversely contracted pelvis (Platypelloid pelvis)
4. Interspinous distance (*Distantia spinarum*) – 26 cm, Intercristal distance *(Distantia cristarum)* – 29 cm,	Simple flat pelvis (Anthropoid pelvis)

Intertrochanteric distance *(Distantia intertrochanrterica)* – 30 cm, External conjugate *(Conjugata externa)* - 18 cm.	
5. Interspinous distance (*Distantia spinarum*) – 26 cm, Intercristal distance *(Distantia cristarum)* – 26 cm, Intertrochanteric distance *(Distantia intertrochanrterica)* – 31 cm, External conjugate *(Conjugata externa)* - 17 cm.	Flat rachitic pelvis
Application of obstetric forceps	The legs of women are bent at the hip and knee joints. Intravenous anesthesia is given. The external genitals are cleansed with an antiseptic. An episiotomy is performed. The left blade of the forceps is held in the left hand and introduced into the left side of the pelvis under the control of the fingers of right hand, the right blade is introduced into the right side using the right hand under the control of the left hand's fingers. After the blades are inserted, take the left handle of the forceps in the left hand and the right handle in the right hand and bring them closer. If the forceps are appropriately applied, they will be lightly closed

	and the branches are easily articulated. It is important to make sure the absence of maternal soft tissue entrapment between the blades. The testing traction is done. For this purpose, the handles of the forceps are hold with the right hand over the lock and then with the fingers of the left hand inserted into vagina the absence of the maternal soft tissues entrapment is checked. Then the left hand is put on the right hand and the letter is embraced with fingers, while the index finger is extended toward the head of the fetus. If the finger moves with the fetal head during traction (distance between finger and fetal head is same), the clamps are applied appropriately.
Vacuum extractor application	Hands are washed and sterile gloves are worn. The external genitals of the woman are cleansed with an antiseptic and urine should be drawn with a catheter. Make sure that all parts of the vacuum extractor work correctly and create a vacuum in the apparatus. In order to determine the station of the fetal head the vaginal examination is performed and the lesser fontanel is determined.

	Under the control of the right hand, a cup of appropriate diameter is placed close to lesser fontanel – flexion point. Then the entire cup circumference is palpated to exclude maternal soft tissue entrapment and then it is attached to vacuum extractor.
Measuring the abdominal circumference and the height of uterine fundus	Abdominal circumference is measured with a measuring tape, on the level of umbilicus. The height of uterine fundus is measured with a measuring tape from the upper margin of pubic symphysis to the uppermost point of the uterine fundus.
Calculating the estimated fetal weight	The estimated fetal weight is approximately calculated by the following formula: EFW = AC x HUF? where AC - abdominal circumference and HUF – height of uterine fundus

CHAPTER VI.

MATERNITY HOSPITAL

Expulsion of the fetus attained viability through active changes from the stage of zygote from the uterus is called labor. Under physiological conditions, delivery occurs on average after 280 days of pregnancy, the beginning of which is counted from the first day of the last menstrual period. By the end of pregnancy, a woman's body is prepared for childbirth.

In addition to the increased irritability of the uterus, the effect of various stimuli on it constantly increases:

a) As the fetus continues to grow, the amount of amniotic fluid decreases due to the which the fetus is held tighter by the uterine walls.

b) fetal movement

c) pressure of the presenting part on the lower segment of the uterus

d) constant irritability of the fetus due to changes in blood pressure (N.A. Garmashova)

e) release and circulation of acetylcholine and other biologically active substances that develop and enhance contractile activity

f) increase of glycogen, phosphocreatine, calcium and other substances necessary for the contraction of uterine muscles.

All of these factors have a complex relationship with each other and cause constant stimulation of the intrauterine receptors on the uterine wall. In turn, these impulses are transmitted to the central nervous system and, which in response, causes the uterus to contract and labor to begin.

General information about the theory of labor

1. **Mechanical theory** - according to this theory labor begins as a result of the irritation of receptors located on the uterine fundus and the cervix by the presenting part and excessive stretching of the uterine walls.

2. **Foreign body theory** - at the end of pregnancy, the placenta and its membranes undergo senescence, and the mature fetus loses its

physiological connection with the uterus, and becomes a "foreign body", which is expulsed by the uterus.

3. **Placental theory** - the placenta produces substances that cause the onset of labor and delivery. At the end of pregnancy, most of the chorionic villi are reorganized, which results in cessation of the inhibiting impact of trophoblast on contractility of the uterus.

4. **Hormonal theory** - at the end of pregnancy, there is a hormonal disbalance, that is, the hormone levels changes, the serum levels of progesterone sharply decreases, and the level of estrogens increases (estradiol fraction)

5. **The theory of the nervous system** - at the end of pregnancy and at the onset of labor, the excitability of the cerebral hemispheres changes, a change is also observed in the brain stem and spinal cord, an increase in reflexes and in muscle excitability are also observed.

6. **Neuro-humoral theory** - at the end of pregnancy, in the brain cortex inhibition processes dominate, while in the subcortical structures in opposition excitation processes increase, which in turn increases the neuromuscular excitability and active contractility of the uterus, the release of acetylcholine and adrenaline mediators. At the end of pregnancy, the effect of estrogens increases compared to that of progesterone, as a result of this effect, the inhibiting effect of progesterone decreases in turn under the influence of estrogens the excitability of the uterus increases.

7. **Immune Theory** – in response to syncytiotoxins produced by organism the placenta starts to produce antibodies – syntithiolysins. At the end of pregnancy, the level of syncytiotoxins increases so much that its neutralization does not occur, as a result, the uterus becomes easily excitable and contraction impulses appear in it.

Labor components

Labor is a complex physiological process in which the fetus and its embryonic formations are expulsed from the uterus through the birth canal.

The labor consists of 3 components:

1. **Birth canal** - pelvis, vagina, uterus and cervical canal, lower part
2. **Expulsive forces:**

a. uterine contractions

b. contractions of the abdominal muscles – *pushing* and contractions of pelvic floor muscles

3. **Fetus**– with all its embryonal formations (placenta and mambranes)

Uterus is the organ where the fetus develops during pregnancy, and during labor acts as a part of the expulsive forces. The uterus consists of 3 parts: the body (corpus) of the uterus, the cervix and the isthmus.

The muscles of the uterus consist of 3 layers

a) longitudinal

b) circular

c) transverse

Isthmus - is the part of the uterus located above the internal os and serves as a union site of uterine corpus and cervix.

Sometimes implantation of fertilized egg – zygote in isthmus occurs as a result placenta previa is observed.

The muscles of the isthmus do not contract during the labor, which causes the internal os to stretch and efface, that said it participates in the effacement of the cervix. In the cases of dystocia (fetopelvic disproportion), the isthmus is excessively stretched and an abnormal oblique retraction ring is formed at the level of the umbilicus or above, which is a sign of threatening uterine rupture. Usually uterine rupture occurs along the isthmus. The isthmus consists of two layers of muscles: longitudinal and circular.

Expulsive forces:

With the onset of labor (contraction of the uterine muscles), the isthmus becomes thinner and the corporal muscle fibers thicken.

Retraction – is a mutual movement of muscle fibers due to which muscle they lie parallel to each other. As result by each contraction, the uterine muscles become thicker and intrauterine pressure increases 5-6 times.

Contractions – is a contraction of uterine muscle fibers in labor.

Uterine contractions can be determined by the following ways:

1) External examination - the uterine contractions are determined by placing a hand on the uterus over the abdominal wall and duration of contractions is determined (Winckel's method).

2) Hysterography

Each uterine contractions has 3 phases:

1st phase – increment – phase of increasing of uterine contraction's strength

2nd phase – acme – phase of greatest strength of uterine contraction (peak)

3rd phase – decrement – phase of decreasing of uterine contraction's strength after which relaxation occurs.

On the onset of labor, typically contractions occur every 10-15 minutes and last for 20-25 seconds. By proceeding of labor contractions become more frequent and more intense and at the end of labor they occur every 2-3 minutes with 50-60 second duration. Intrauterine pressure increases to 94.3 mmHg on average.

Stages of labor

There are 3 stages in labor:

1) 1st stage – contractions and cervical dilatation
2) 2nd stage – fetal descent and delivery
3) 3rd stage – delivery of placenta

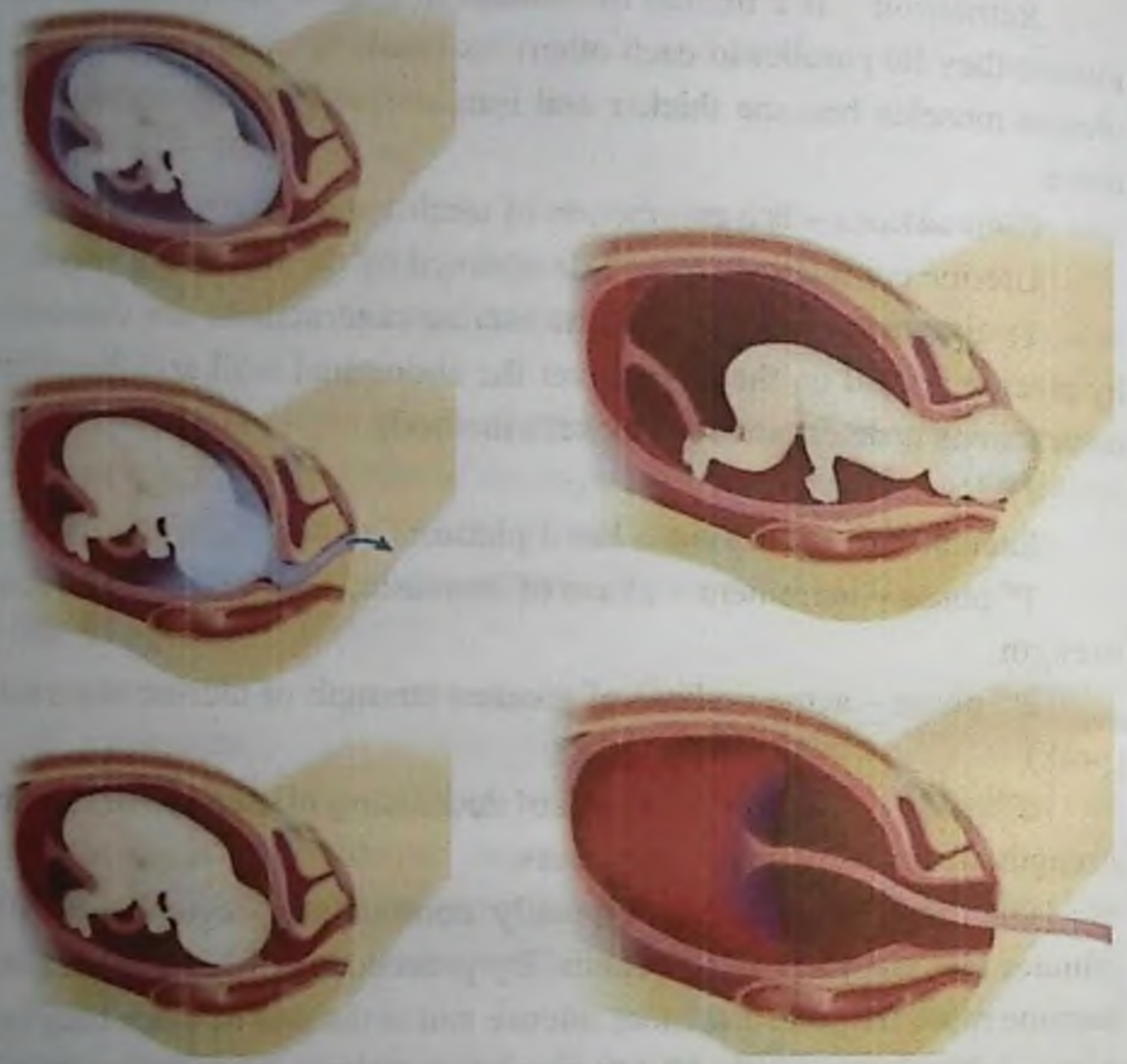


Figure 6.1. Childbirth

First stage of labor - begins with the regular uterine contractions and ends with the complete cervical dilatation.

Uterine contractions – are regular involuntary contractions of uterine muscles. that said a woman cannot control them. Periods of relaxation between contractions are called intervals. Uterine contraction impulses begins at the uterine fundus and cornua and quickly spreads through uterine corpus to the lower segment.

Mechanism of cervical dilatation

During the first stage of labor the cervical thinning (effacement), its full dilatation (about 10 cm) to allow passage of the term fetus and fetal

descent of the fetal head takes place. Effacement and dilatation of the cervix occur under the influence of uterine contractions. During labor, the muscles of the uterine corpus go through the following processes:

1. Contraction - muscle contractions
2. Retraction is an exchange of positions of muscle fibers
3. Distraction – stretching which characterized by formation of lower segment.

With each contraction, the uterine muscles exert pressure on the fetus, mainly on the amniotic fluid, increasing intrauterine pressure. In this case, the amniotic fluid moves downward based on the law of hydraulics. Due to absence of resistance in the internal os the amniotic fluid and membranes move towards the cervix. During contractions the membranes stretch and moves further toward cervix resulting in its dilation. Thus, the following forces are involved in the dilatation of the cervix:

1. Contraction, distraction and retraction of uterine muscles.
2. "Hydraulic wedge".
3. Increased intrauterine pressure
4. The fetus itself.

When strong contractions occur, the contractile upper segment – uterine corpus defines the boundaries between the "active part" and the "passive part" - normal lower segment, which is called the contraction ring. The letter is usually formed after the rupture of membranes and release of amniotic fluid, which can be defined through the abdominal wall as a transverse groove. In normal labor, the contraction ring is located 4 cm above the pubic symphysis.

Effacement and dilatation of the cervix in primiparas starts from internal os, then the cervical canal gradually shortens, at the beginning it becomes funnel-shaped, and at the end completely flattens. The external cervical os remains closed, further it becomes thin and gradually dilates, its edges are pulled to the sides and becomes fully dilated.

In multiparas the external cervical os remains open even at the end of pregnancy and before the onset of labor due to its expansion and

damage in previous births. At the end of pregnancy and at the onset of labor, the tip of a finger passes freely into the cervical canal. During the dilatation stage, the internal and external os dilate simultaneously. The full dilatation is about 11-12 cm, when the fetal head positioned to exert pressure against the cervix and lower segment. The area of pressure exertion by the head is called the contact zone, which divides the amniotic cavity into two sacks. Amnionic sac located in front of the presenting part, is called *forebag,* the leading portion of fluid.

Usually, the membranes ruptures during contractions after full dilation. Rupture of membranes occurring before full dilatation of cervix or before the onset of labor is called premature rupture of membranes.

After premature rupture of membranes under atmospheric pressure soft swelling of the most dependent part of the fetal head occurs, which is called *Caput succedaneum*.

The second stage of labor - fetal descent and delivery

It begins with fill dilatation of cervix and ends with the delivery of fetus, due to auxiliary forces - contractions of the abdominal muscles, diaphragm and pelvic floor muscles (contraction of the voluntary muscles) named *"pushing"*. Attempts appear involuntarily, but a woman in labor can regulate them.

After the rupture of membranes and leakage of amnionic fluid, contractions slow down or even stop for a short time (approximately 10-15 minutes). During this period the uterine muscles continue to contract and the uterine walls adaptation to the reduced size occur.

At the beginning of the second stage, the head closely touches the lower uterine segment (internal) and with it close and comprehensively adheres to the walls of the lesser pelvis (external), that said descent of fetal head begins.

In the second stage, contractions are more frequent, the pauses between efforts are shortened and the formation of the fetus begins, that is, the fetal spine is extended, the crossed arms are pressed tightly to the

body, the shoulders are closer to the head and fetus takes an ovoid shape – fetal attitude.

The third stage of labor - delivery of placenta

It begins immediately after the delivery of fetus and ends with delivery of placenta. The placenta is expulsed under maternal efforts. The third stage of labor usually lasts up to half an hour.

Duration of labor

It depends on strength characteristics of expulsive forces:

On average, in primiparas labor lasts for one day (15-20 hours), 10-12 hours in multiparas. The longest is the first stage: 13-18 hours in primiparas and 6-9 hours in multiparas. The duration of II stage is up to 2-4 hours in primiparas and up to 1 hour in multiparas. III stage lasts on an average half an hour for both.

CHAPTER VII.

PHYSIOLOGY OF THE NEONATAL PERIOD

A newborn (neonate) is a baby who lives its first 4 weeks of life, adapting to life outside the uterus.

Neonatal period

Lasts from the first breath of a newborn baby until the age of 29 days.

Children born between 37-42 weeks are considered full-term, children born between 22-36 weeks are considered preterm. Accordingly, the neonatal period is of two types: term and preterm neonatal period. Antenatal death in children up to 22 weeks is called miscarriage.

Live birth - this is a newborn baby who has performed at least l spontaneous breath or shows any other sign of life such as a heartbeat or definite spontaneous movement of voluntary muscles.

A mature term neonate – is a newborn (full term, early term, late term), whose morphological and functional characteristics correspond to its gestational age.

A premature term neonate – is a newborn whose morphological and functional characteristics do not correspond to its gestational age

Gestational age – is the period from fertilization until birth.

Neonatal period – is the time from birth until the age of 29 days.

1. Early neonatal period - first 7 days after birth - time of adaptation

2. Late neonatal period – starts from 8th day and lasts until 29 days.

Perinatal period - the period from 22 weeks of gestation to 7 days after birth.

Premature neonates are classified according to their birthweight:

1. Low birthweight - a neonate with birthweight < 2500 g.
2. Very low birthweight – a neonate whose weight is < 1500 g.
3. Extremely low birthweight – a neonate with birthweight < 1000 g.

Anatomical and physiological characteristics of a newborn

1. The skin of the newborn is covered with white-coloured vernix caseosa, contains large amount of blood vessels, muscle and elastic elements are weakly developed. Sebaceous glands function well but sweat glands are not perfect. The skin of a newborn baby is thin and easily subjected to damaged, so that inflammation can spread on its all layers. Under the environment changes, the skin of newborn becomes very red (erythema neonatorum), which lasts for the first 2 days. In some newborns a strong desquamation of the epidermis is observed. The thermoregulatory function of the skin is poorly expressed, so they can easily loss heat, especially in premature newborns and newborns with injuries. There may be hemangiomas, mongoloid spots on the skin.

2. Muscles – hypertonicity of muscles - flexion is inherent due to immaturity of cortical structures and predomination of subcortical structures.

3. Skeletal system – bones are soft and elastic, contains a small amount of salts, the vertebral column is almost completely cartilaginous and fractures do not occur.

4. Respiratory organs - the upper respiratory tract is narrow, short, the mucous membranes are edematous and has little elastic tissue. The peculiarity of newborns is that their oxygen demand is very high and their lungs cannot supply the required amount of oxygen. All this results in frequent and deep respiration, about 30–60 per 1 min.

5. The cardiovascular system plays an important role. They have larger heart atriums than heart ventricles. After starting of minor blood circulation the oval foramen, venous (Arantius') and arterial (Botallo's) ducts are closed. Blood pressure at birth is 60/40 mmHg, 80/45 mmHg, Ps 120/140 beats per minute. Blood vessels have little elastic tissue and are prone to bleeding.

6. Hemopoiesis - red bone marrow is a main source of blood in newborns. They start their function from the 5th month of gestation. Level of hemoglobin is 1180-240 g/l, 75-80% of which is fetal hemoglobin. The level of leukocytes in the first 3 days of life is increased and accounts 25,000-30,000, then at 7-10th day it decreases twice - 10,000. In the first week of the newborn life the number of lymphocytes sharply increases, but neutrophils decrease, ESR is slow.

7. Digestive system is not completely mature. The mucous membrane is thin all over the digestive tract. The muscle layer is not enough developed. The stomach and pancreas secrete all the enzymes, but their activity is low. The stomach sphincters are poorly developed, as the result of which the baby often regurgitates.

8. Metabolism is increased, so proteins, fats and carbohydrates are easily digested, the need for water is more than that of adults. 150-160 ml of water is needed for 1 kg of weight per day. There is a tendency to salt accumulation, increased diuresis, frequent urination, body temperature is 36-37°C.

9. Endocrine system (ovaries) do not work, other endocrine glands work slowly.

10.The nervous system is not enough developed, except congenital reflexes such as sucking and swallowing.

Physiological conditions of the newborn

1. Physiological weight loss – occurs during the the first seven days of life, and is normal physiological condition and starts to

increase from the 8th day. By day 10, their weight must be restored. The feeding of newborn must be controlled.

2. Physiological hyperbilirubinemia (jaundice) - the general health condition is unchanged, the level of bilirubin is considered normal up to 3 mg%, the sclera is not stained, it develops in 2-4 days of life and disappears in 5-10 days.

3. Physiological erythema - the hyperemia of skin is observed from several hours to 2-3 days of life, and with further desquamation disappears during 4-6 days, especially on the palms. Rash and erythema are a physiological conditions or is a sign of influence of the environmental factors.

4. Transitory fever - appears in full-term babies on the 3-4th day of life and body temperature rises up to 38-40°C. Hyperthermia lasts only 3-4 hours. This is the result of dehydration during the period of maximal weight loss.

5. Acute physiological conditions include:

a. mammary gland engorgement;
b. menstruation-like bloody discharge in girls;
c. uric acid diathesis;
d. albuminuria.

Signs of fetal maturity

Height-to-weight ratio = 60, for example: height 50 cm, weight - 3000; 3000/50=60

Weight of mature newborn should be at least 2500 g, height should be at least 47 cm, crying should be lou, har length of the head should be 1-1.5 cm, nails should cover the tips of the fingers, there should be no vernix caseosa and hair on the skins. In boys, the testicles should be descended into the scrotum, in girls, the labia majora should cover the labia minora.

Care for the newborns

1. After the first toilet of newborn is completed, it is recommended to rest in the delivery room.

2. Transfer of a newborn to the newborn ward is conducted by following the general rules (with bracelets where the full name of mother, number of labor card, child's sex, weight, height, date and time of birth are written).

3. Feeding a newborn baby is free.

4. Adherence to the rules of asepsis and antiseptics, as well as sanitary standards in the neonatal ward - 2.5 m^2 per bed, appropriate equipment, compliance with the temperature regime, cyclic wards.

5. Weight measurement, °t measurement, skin color and urine control is performed.

6. Vaccination is performed according to national calendar.

Care for the newborns is mainly performed by ward nurse: dressing, skin care, umbilicus care, eye care.

Newborns are cared for in the morning before feeding, the nurse performs full examination: weight measure, °t measure, checks all skin folds and lubricates them with sterile vaseline. The face and eyes are wiped with sterile wipes. The nurse monitors the newborn's feeding, if the child sucks milk little and slowly, the doctor is called for examination.

Establishment of neonatal department

1. Cyclic wards.
2. A special ward for premature and unjured newborns.
3. Timely isolation of sick newborns.
4. Proper conduction of documentations.

Quality indicators

1. Neonatal infections
2. Death of newborns.
3. Newborn development indicator.

CHAPTER VIII.

BREECH PRESENTATIONS

Breech presentations constitute 3-4% of all presentations, and is considered to be between pathological and physiological conditions, as it leads to complications.

Classification:

1. Frank breech presentation
2. Complete breech presentations
3. Incomplete breech presentations

a) footling breech presentation

1 2 3

Figure 8.1. *Breech presentations*

Frank presentations are twice as common as complete or incomplete breech presentations and are more common in primiparas.

Risk factors:

a) contracted pelvis
b) placenta previa
c) uterine masses or congenital anomalies
d) hydramnios
e) premature deliveries
f) multifetal pregnancies

Diagnosis:

1. In external obstetrical examination:

a) With the first Leopold maneuver: hard, round, ballottable fetal head may be found to occupy the uterine fundus

b) With the third Leopold maneuver, in palpation the breech is movable above the pelvicinlet, if not engaged,

c) The fetal heartbeat is better heard above the level of umbilicus

2. In internal obstetrical examination - vaginal examination:

a) in frank breech presentations - fetal ischial tuberosities, sacrum, and anus are palpated.

b) in a complete breech presentation - the feet may be palpated alongside the buttocks.

c) in footling presentations - one or both feet are palpated below the buttocks.

3. Additional diagnostic methods.

a) Sonographic evaluation

b) speculum examination.

Peculiarities of course of pregnancy and labor

a) Preterm labor

b) Preterm premature rupture of membranes

The followings may be observed during labory:

1. Protraction disorders in labor
2. Premature rupture of membranes
3. Prolapse of small parts of the fetus or the umbilical cord
4. Placental abruption
5. Difficulties of the head and shoulders delivery

Complications:

1. Nonreassuring fetal status.
2. Birth trauma

The biomechanism of labor in breech presentations

Cardinal movements with breech delivery include:

Engagement of the breech usually takes place with the intertrochanteric diameter in one of the oblique diameters of pelvic inlet and descent occurs in this dimension. (A and B).

I. Internal rotation of the breech: The anterior hip (leading point) descents more rapidly than posterior hip and as the breech reaches the pelvic floor, rotation of breech for 45° occurs which shifts the intertrochanteric diameter to straight diameter of pelvic outlet (C) that said anterior hip is brought under pubic symphysis (first fulcrum point).

II. Lateral flexion of the fetal body (according to sacral curvature): breech distends the perineum and anterior hip appears at the vulva. Letter fixes under pubic symphysis (fulcrum point) and lateral flexion of the fetal body takes place. Which forces posterior hip to appear over the perineum and breech is born. The legs and feet are born following the breech (D).

III. Internal rotation of the shoulders: after the birth of breech shoulders start to engage and descent in one of oblique diameters (same as breech did) of pelvis. It brings the fetal back to slightly turn anteriorly. During descent, as shoulders rich pelvic floor they perform internal rotation so that biacromial diameter occupies anteroposterior diameter of pelvic outlet. Simultaneously there is an external rotation of fetal body.

IV. Lateral flexion of the fetal body in the cervico-thoracic part. At this moment shoulders and arms are born (E).

V. Internal head rotation: immediately after shoulders the flexed head enters the pelvis in the oblique diameter opposite to one that shoulders had entered. In pelvic outlet the head makes internal rotation in such a manner as sagittal suture is brought on anteroposterior diameter and suboccipital fossa comes under pubic symphysis (second fulcrum point).

VI. Flexion of the fetal head: under pubic symphysis (second fulcrum point) fetal head fixes with its suboccipital fossa and makes a flexion and over the perineum consistently chin, mouth, nose, forehead, vertex, and occiput are born (F and G).

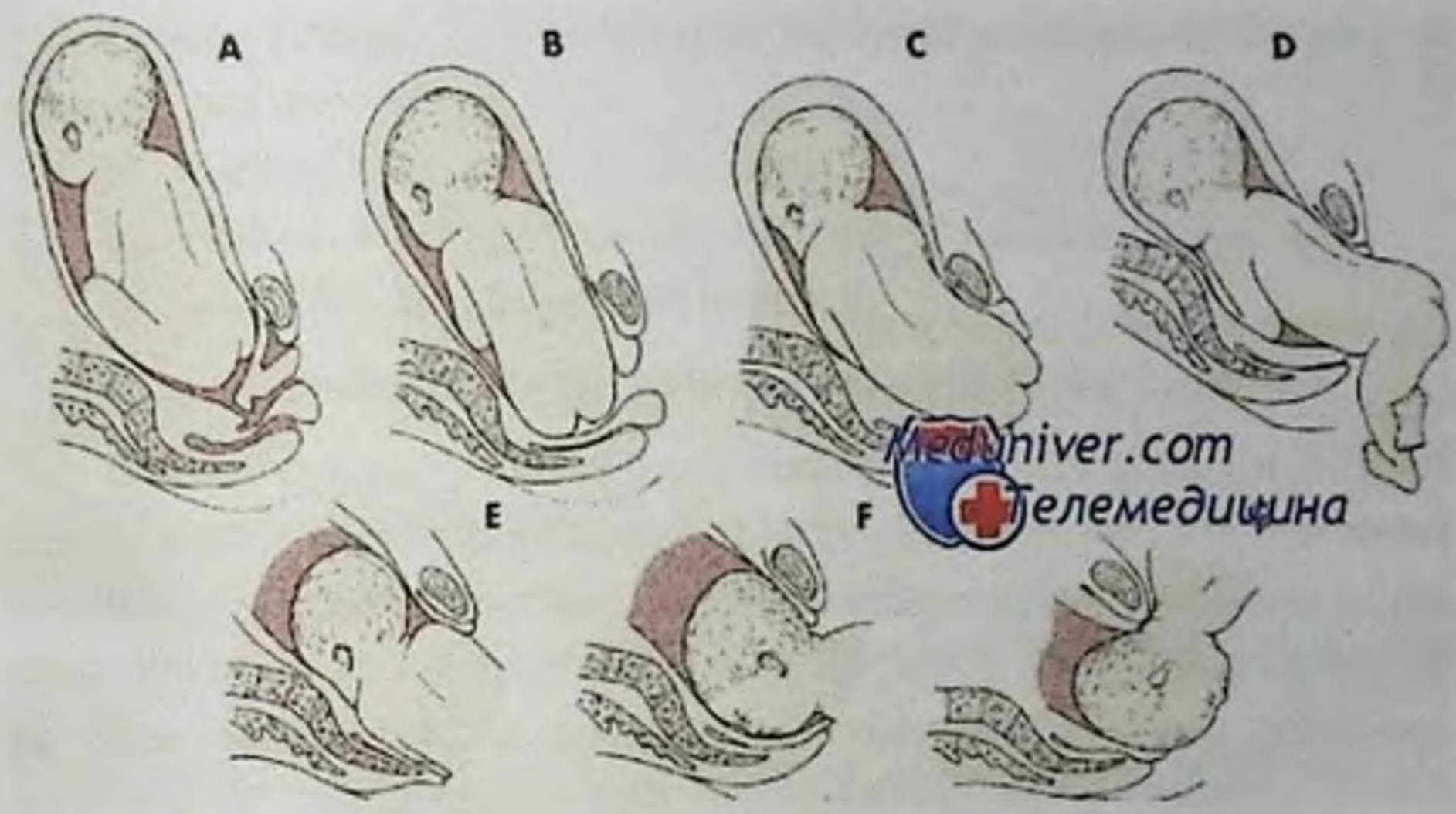


Figure 8.2. Biomechanism of breech presentations

The leading diameter – intertrochanteric diameter.

The leading point - the anterior buttock.

The point of fixation is the area between the iliac bone and trochanter.

Management of labor

1. I stage of labor:

a. bed rest to prevent premature rupture of membranes;

b. monitoring of the strength of contractions and the progress of descent of the presenting part. Helps to start timely prevention of protraction disorders in labor and fetal asphyxia

c. vaginal examination immediately after rupture of membranes to exclude the prolapse of fetal small parts umbilical cord.

2. II stage of labor

a. monitoring of the progress of labor and fetal heartbeat.

b. prevention of intrauterine fetal asphyxia

c. administration of spasmolytic (atropine immediately after delivery of breech) and initiation of assistance methods

CHAPTER IX.

VARIANTS OF EXTENDED AND FLEXED TYPES OF THE LABOR MECHANISM

Other variants of flexed types of labor mechanism in occiput presentations include:

a) High straight station of the head;
b) Medium and deep transverse station of the head;
c) Asynclitic engagement of the head.

Medium and deep transverse station of the head

In some cases, the head for one reason or another does not perform internal rotation and occupies with its straight dimension the transverse diameter of midpelvis (medium transverse station of the head) even of the pelvic outlet (deep transverse station of the head). Often, this variant of the labor mechanism, is observed in contracted pelvises (flat) and especially in combination with weak pelvic floor muscles. Labor protraction serves as an auxiliary moment.

Diagnosis: in all cases, if the head states in pelvic outlet and uterine contractions are adequate in the second stage of labor, but labor does not progress one should think about this pathology. In vaginal examination the head is located in pelvic outlet with its straight dimension in transverse pelvic diameter. In one side lesser fontanel in another greater fontanel can be palpated.

Management of labor: in rare cases vaginal delivery is possible with the expulsive forces of the organism. Often performance of delivery operations is required:

a) vacuum extraction;
b) forceps delivery;
c) craniotomy - in the cases of fetal death.

Before applying forceps, it is recommended to hold the woman during the labor on the side corresponding to the side of fetal

occiput/lesser fontanel because the letter serves as a leading point in cases of medium and deep transverse station of the head.

High straight station of the head

It is rare variant of normal labor biomechanism and accounts about 0.1-0.4% of all vertex presentations. In these cases, the head engages with its straight dimension not in transverse or one of oblique diameters of pelvic inlet as it does in normal labor but in anteroposterior diameter of the pelvic inlet corresponding to true conjugate.

In high straight station of the head there two varieties of position are distinguished:

1) Occiput anterior – occiput to symphysis (positio occipitalis pubica). Mostly observed in multiparas.

2) Occiput posterior – occiput to sacrum (positio occipitalis sacralis). Mostly observed in primiparas.

In 25% of cases of high straight station of the head in occiput anterior position and in almost all cases of occiput posterior position the vaginal birth is impossible.

Management of labor:

1. Cesarean section according to relative indications;
2. Craniotomy.

Delivery:

Often, mainly in the cases of occiput anterior positions spontaneous labor is possible. A head with its straight dimension in anteroposterior diameter descends trough pelvis and is born with occiput. In other cases, the head performs internal rotation, that is, first it shifts to one of the oblique diameters and then in pelvic floor it occupies an anteroposterior dimension.

In occiput posterior positions cesarean section is performed.

Variants of the extended types of labor mechanism

a) Sinciput presentation
b) Brow presentation

c) Face presentation

There are three degrees of head extension:

The 1st degree is called sinciput presentation, the head passes through the birth canal through its straight dimension of 12 cm, the leading point is the greater fontanel.

The 2nd degree is called brow presentation and is characterized by significant extension. The head with its maxilla-parietal dimension (between occipito-frontal and occipito-mental diameters) - 13.5 cm passes through the birth canal and the leading point is the brow.

The 3rd degree is called with the face presentation - the head is hyperextended, the leading point is the chin, the head passes through the birth canal with its vertical (trachelobregmatic dimension) dimension - (9.5 cm).

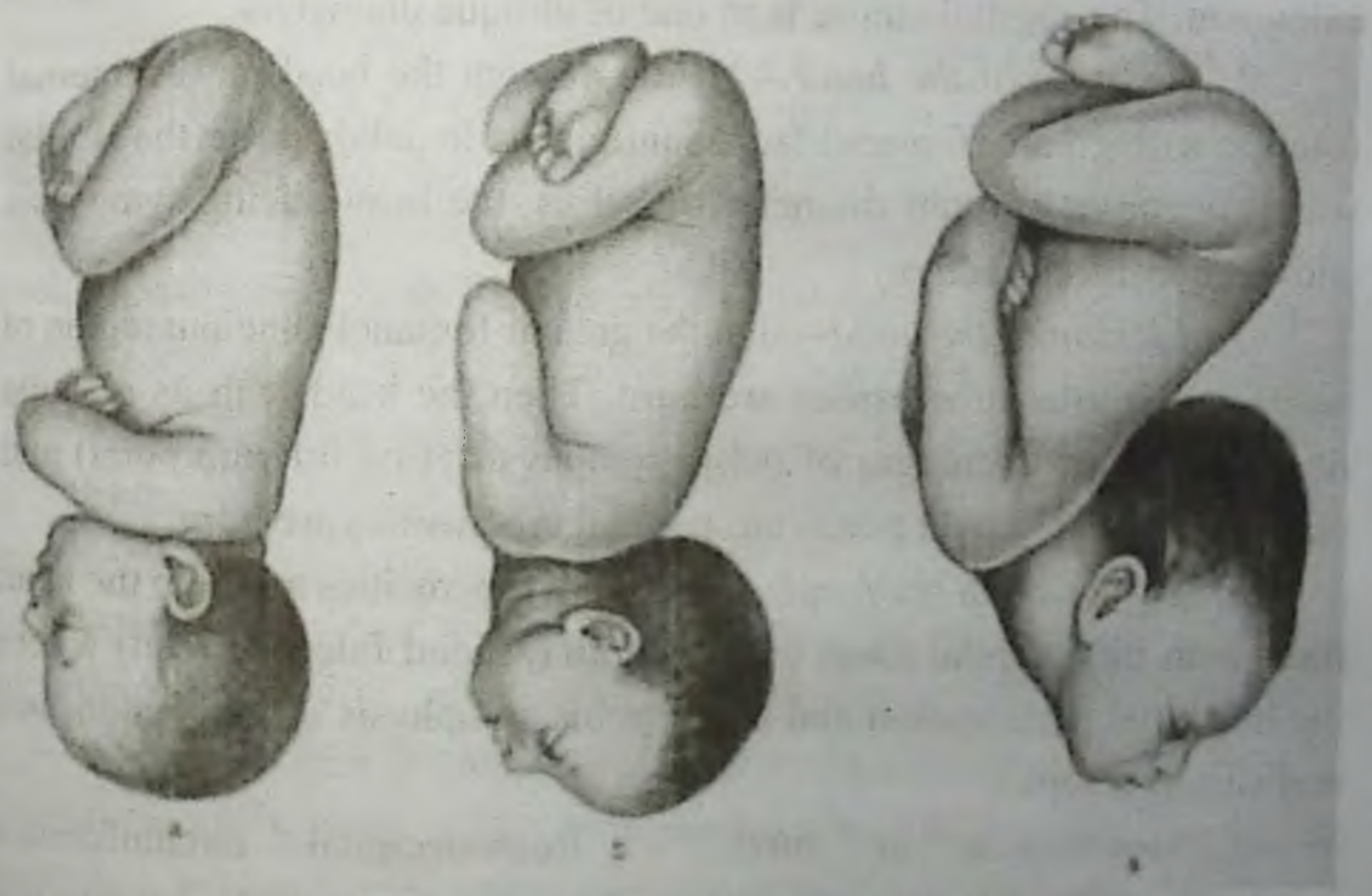


Figure 9.1. *Variants of extended and flexed types*

Sinciput presentation is a variant of the labor mechanism of vertex presentations in which the head and back are flexed back, the head is slightly extended so that the chin moves away from the chest, the presenting part is sinciput. Its frequency is 2% of all births.

Etiology: the flat pelvis, conditions of pelvic cavity, the small size of fetal head, the dead fetus.

Contributing factors:

1. Saggy belly
2. Premature rupture of membranes
3. Polyhydramnios, umbilical cord entanglement

Mechanism of labor in extended variants

At the pelvic inlet the head is engaged with its sagittal suture in transverse diameter. The lesser and greater fontanels are located in the same plane. In the small pelvis the head with its occiput rotates posteriorly.

1. *Light extension of head* – the head instead of flexing makes light extension. The sagittal suture is in one of oblique diameters.

2. *Rotation of the head* – by the descent the head makes internal rotation with greater fontanel facing anteriorly. In pelvic outlet the sagittal suture occupies straight diameter of pelvis, the brow facing symphysis and occiput faces sacrum.

3. *Flexion of the head* – first the greater fontanel (sinciput region of head) and frontal tuberosities are born. Then the head with its glabella fixes on the lower margin of pubic symphysis (first fulcrum point) and makes flexion and over perineum parietal tuberosities are born.

4. *Extension of the head* – as parietal tuberosities are born the head fixes with its occipital fossa on perineum (second fulcrum point) where the head makes extension and under pubic symphysis in succession face and chin are born.

Circumference at birth – frontooccipital circumference (circumferentia frontooccipitalis) – 34 cm, corresponds to straight diameter (diameter frontooccipitalis) – 12 cm.

The configuration of the head is brachicephalic. From the outside, the head seems to be flattened. Transverse dimensions are increased in

relation to anteroposterior dimensions. It looks like a tower. There is a caput succedaneum in the area of the large fontanel.

The diagnosis of sinciput presentations with occiput and back faced posterior is established only the head is already states with its sagittal suture in straight diameter of pelvic outlet plane. If the head is at plane of pelvic inlet its presentation will change by the labor course. In the second stage of labor, when there is no progress of labor despite low station of the head at pelvic outlet plane, normal pelvic measures (pelvic outlet) and adequate expulsive forces, one should think about the occiput posterior and sinciput presentations.

In vaginal examination - in cases of sinciput presentation during examionation the frontal suture is identified. In one and one can palpate the glabella and in other end of suture even with difficulties the lesser fontanel can be palpated.

Spontaneous vaginal delivery is possible in cases of sinciput presentation, but the rate of newborn death from asphyxia is 3 times higher than in normal delivery. The second stage of labor is significantly prolonged and usually perineal lacerations, secondary protraction of labor forces is observed.

Tactics of labor management

In the past, various methods of correction of the fetal presentation by changing the position of the fetal head with forceps were proposed and recommended, but such a dangerous manipulation had the risk of fetal neck injuries.

During labor, it is necessary to follow the expectant tactic, to let it course naturally, only when indications arise (fetal asphyxia, tissue resistance, protraction disorders) change of tactics is allowed.

Surgical management

a) Forcers delivery
b) Vacuum extraction

The main variant of extended labor mechanism (face presentation)

Chin (mentum) anterior presentation.

In this cases the fetal head is extended and the facial line (from glabella to the chin) is set in a transverse pelvic inlet diameter. Above the pelvic inlet face presentations are rarely observed. During descent the head does not rotate, and keeps its position until it reaches the pelvic floor. In the pelvic floor it makes internal rotation and first shifts to one of oblique diameter and then to a straight diameter so that the chin is brought under the pubic symphysis. The leading point is chin. As soon as the chin is born, the hypoglossal area is born and fixes under lower margin of pubic symphysis (fulcrum point) and as a result the head is delivered by flexion. The nose, eyes, brow (bregma), and occiput then appear in succession over the anterior margin of the perineum.

Chin (mentum) posterior presentation

The internal rotation of head in this cases turns the chin backward to sacrum. This position precludes flexion of the fetal head necessary to negotiate the birth canal. Thus, a mentum posterior presentation is undeliverable except with a very preterm fetus. Cesarean section is recommended in this situation.

Thus if the head during labor tends to rotate with mentum towards the sacrum, then this is the posterior presentation, and towards the pubic symphysis - the anterior presentation.

Brow presentations

Spontaneus vaginal delivery is possible with preterm fetus weighing less than 2500 g.

At the transverse diameter of the pelvic inlet the extended head is engaged with frontal suture and only when the head reaches the pelvic outlet plane it makes rotation first to one of the oblique diameters and then then to the straight diameter of pelvic outlet. The leading point in this case is glabella.

During vaginal examination, frontal suture, glabella, brow, and only anterior angle of large fontanel are identified.

Fulcrum points:

1) maxilla – maxilla fixes under the lower edge of the pubic symphysis and fetal head flexes and is born with a maxilla-parietal circumference - 35 cm, diameter - 13.5 cm.

2) suboccipital fossa – under this fulcrum point head makes slight extension and brows and face appear in succession under the pubic symphysis.

Prognosis for vaginal delivery is poor because the head comes with its largest circumference. Delivery is complicated with:

1. IV-degree laceration of perineum – rectal fistula
2. Prolonged station of the head – injuries of the rectum and bladder
3. Birth trauma of the fetus

Operative delivery is recommended.

LIST OF REFERENCES:

1. Акушерство : учебник / Э. К. Айламазян [и др.]. - 9-е изд., перераб. и доп. - М. : ГЭОТАР-Медиа, 2015. - 704 с. : ил.

2. Акушерство и гинекология. Иллюстрированный учебник / Невиль Ф. Хакер, Джозеф К. Гамбон, Кельвин Дж. Хобел; пер. с англ. под ред. Э.К. Айламазяна. - М.: ГЭОТАР-Медиа, 2012

3. Акушерство. Руководство к практическим занятиям : учебное пособие / под ред. В. Е. Радзинского. - 5-е изд., перераб. и доп. - М. : ГЭОТАР-Медиа, 2015. - 728 с. : ил.

4. Барановская Е. Акушерство. – Litres, 2021.

5. Базовая помощь новорождённому - международный опыт / под ред. Н.Н. Володина, Г.Т. Сухих ; науч. ред. Е.Н. Байбарина, И.И. Рюмина. - М. : ГЭОТАР-Медиа, 2008. - 208 с. - (Серия "Библиотека врача-специалиста").

6. Баймишев Х. Б., Баймишев М. Х. Акушерство и гинекология. – 2021.

7. Баркун, Г. К., И. М. Лысенко, and О. В. Лысенко. "Учебно-методическое обеспечение и практическая подготовка студентов по акушерству и гинекологии и педиатрии." Здоровье–основа человеческого потенциала: проблемы и пути их решения 10.1 (2015): 177-179.

8. Гайдуков, С. Н. "Гинекология: учебник для вузов. Под редакцией ГМ Савельевой, ВГ Бреусенко.-М.: ГЭОТАР-Медиа, 2004.-480 с." Журнал акушерства и женских болезней 54.2 (2005): 119-121.

9. Гайдуков С. Физиологическое акушерство. Учебное пособие. – Litres, 2022.

10. Занько С. и др. (ред.). Акушерство. – Litres, 2021.

11. Игнатко И. В. и др. Новая коронавирусная инфекция (COVID-19): принципы организации акушерской помощи в условиях пандемии //Акушерство и гинекология. – 2020. – Т. 5. – С. 22-33.

12. Конь И. Я. и др. Организация работы по охране и поддержке грудного вскармливания в лечебно-профилактических учреждениях родовспоможения и детства. Пособие для врачей //Вопросы детской диетологии. – 2007. – Т. 5. – №. 4. – С. 44-57.

13. Клинические лекции по акушерству и гинекологии: руководство. Доброхотова Ю.Э., Бояр Е.А., Хейдар Л.А. и др. / Под ред. Ю.Э. Доброхотовой. 2009. - 312 с. (Серия "Библиотека врача-специалиста")

14. Пилюгина Я. А., Казымова О. Э. СОВРЕМЕННЫЕ ОСОБЕННОСТИ БИОМЕХАНИЗМА ФИЗИОЛОГИЧЕСКИХ РОДОВ //Известия Российской Военно-медицинской академии. – 2020. – Т. 1. – №. S1. – С. 223-226.

15. Радзинский В. Е., Фукс А. М. Акушерство //М.: Гэотар-медиа. – 2016. – Т. 1040.

16. Радзинский В. Е. и др. Предиктивное акушерство. – 2021.

17. Рябцева И. и др. Акушерство. – Litres, 2022.

18. Сорокина З. Х. Современные технологии организации медицинской помощи новорожденным в акушерских стационарах //Проблемы управления здравоохранением. – 2010. – №. 53. – С. 23-27.

19. Славянова И. Акушерство и гинекология. – Litres, 2022.

20. Серов В. Н., Сухих Г. Н., Савельева Г. М. Клинические рекомендации. Акушерство и гинекология. – 2019.

21. Тихонова Т. К., Мифтахутдинова Д. К. ДИАГНОСТИКА ОСОБЕННОСТЕЙ БИОМЕХАНИЗМА РОДОВ //Известия Российской Военно-медицинской академии. – 2021. – Т. 40. – №. S1-2. – С. 193-202.

22. Шкода А. С. и др. Организация акушерской помощи в структуре многопрофильного стационара //РМЖ. – 2019. – Т. 27. – №. 1-1. – С. 33-36.

23. Шмидт, А. А., Гайворонских, Д. И., Иванова, Л. А., Атаянц, К. М., Безменко, А. А., Бескровный, С. В.,... & Шаров, В. О. (2021). Гинекология.

24. Beckmann C. R. B. et al. Obstetrics and gynecology. – Lippincott Williams & Wilkins, 2013.

25. Callen P. W. Ultrasonography in Obstetrics and Gynecology E-Book. – Elsevier Health Sciences, 2011.

26. DeCherney A. H. Current diagnosis & treatment: obstetrics & gynecology. – McGraw-Hill Education, 2019.

27. DeCherney, A. H. (2019). Current diagnosis & treatment: obstetrics & gynecology. L. Nathan, N. Laufer, A. S. Roman, & M. H. Education (Eds.). McGraw-Hill Education.

28. Konar, Hiralal. DC Dutta's textbook of gynecology. JP Medical Ltd, 2016.

29. Lentz, G. M., Lobo, R. A., Gershenson, D. M., & Katz, V. L. (2012). Comprehensive gynecology e-book. Elsevier Health Sciences.

30. Lobo, R. A., Gershenson, D. M., Lentz, G. M., & Valea, F. A. (2016). Comprehensive gynecology E-book. Elsevier Health Sciences.

31. Padubidri, V. G., and Shirish N. Daftary. Shaw's Textbook of Gynecology E-Book. Elsevier health sciences, 2014.

32. Schorge, J. O. (Ed.). (2008). Williams gynecology (pp. 651-80). New York: McGraw-Hill Medical.

D.R. Khudoyarova., F.I. Zokirov.

GENERAL OBSTETRICS

Textbook

Certificate number G/000120-2023

Managing editor — Dildora TURDIEVA
Proofreader – Olim RAKHIMOV
Technical editor – Akmal KELDIYAROV
Layout — Dilshoda ABDIAKHATOVA
Designer — Davron NURULLAYEV

Printed in the printing house "SARVAR MEXROJ BARAKA"
Certificate number - 704756. 140100. Samarkand,
st. Mirzo Ulugbek, 3.
Signed for printing *31.08.2023* **Protocol** *1*
Format 60x841/16. "Times New Roman" **typeface.** Con. prin .sh 5,58
Circulation: 200 copies. **Order No.** *170/2023*
Tel / fax: +998 94 822-22-87. **e-mail:** sarvarmexrojbaraka@gmail.com

Khudoyarova Dildora Rakhimovna - Doctor of Medical Sciences, Associate Professor, Head of the Department of Obstetrics and Gynecology 1, Samarkand State University

Zokirov Farkhod Istamovich – PhD, Assistant of department of obstetrics and gynecology of Faculty of postgraduate education of Samarkand state medical university.

9 789910 942365