MINISTRY OF HEALTH OF UKRAINE
ODESA NATIONAL MEDICAL UNIVERSITY

International Faculty

Department of obstetrics and gynecology

CONFIRMED by
Vice-rector for scientific and pedagogical work
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September 1, 2023

METHODOLOGICAL RECOMMENDATIONS
FOR PRACTICAL CLASS

International Faculty, Course VI\

Discipline "Obstetrics and Gynecology"

Practical lesson №21. Topic: Abnormal uterine action. Birth trauma. Operative obstetrics.

Approved:

Meeting of the Department of Obstetrics and Gynecology of Odesa National Medical University

Protocol No. 1 dated August 28, 2023

Head of the Department_____ (Ihor GLADCHUK)

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Practical class №21.

ABNORMAL UTERINE ACTION. BIRTH TRAUMA. OPERATIVE OBSTETRICS

LEARNING OBJECTIVE is to gain basic knowledge about abnormal labour, understand the contributors to abnormal labour and its management in order to provide successful obstetric outcome, be aware of the social, psychological and governance elements of labour and delivery. Understand the appropriate management of perineal tears and episiotomy. Obtain knowledge about the indications, contraindications, procedures of instrumental delivery with ventouse or forceps, identify the prerequisites for operative vaginal delivery, select a method of management appropriate to the clinical circumstances in every case, be aware of possible complications that may arise. Understand the indications, procedure, complications and consequences of caesarean section, appreciate that both primary and repeat cesarean delivery are strong risk factors for cesarean hysterectomy.

BASIC CONCEPTS: Abnormal uterine action: classification, risk factors, diagnosis and management. Perinatal effects. Fetal distress in labor: diagnosis, management.

Injuries of the birth canal: vulva, perineum, vagina, cervix. Rupture of the uterus: classification, mechanism. Diagnosis, management and prevention. Uterine inversion. Postpartum fistulas: etiology, management, prevention.

Operative obstetrics. Early and late abortion. Operations for the preparation of the birth canal (episiotomy, amniotomy). Obstetric forceps, vacuum delivery, cesarean section: indications, technique. Manual removal of the placenta: technique. Manual and instrumental examination of the uterus. Indications for supravaginal amputation, uterine extirpation, ligation of internal iliac arteries.

EQUIPMENT

- Obstetric models and obstetric instruments (pelvimeter, obstetric stethoscope, centimeter tape).
- Professional algorithms, structural-logical schemes, tables, videos.
- Results of laboratory and instrumental researches, situational tasks, patients, medical histories.
- Multimedia equipment (computer, projector, screen), TV.

EDUCATIONAL TIME – 4 h

1. ORGANIZATIONAL STAGE

- Greetings,
- checking attendees,
- defining of educational goals,

- providing of positive motivation.

Labour or human parturition is the physiological process that results in birth of a baby, delivery of the placenta and the signal for lactation to begin. At a human level it is a major life event for the woman and her partner that heralds the start of parenting. In terms of providing care to a woman in labour, attention must be paid to safety and clinical outcomes but also to her emotional wellbeing and the desire for a fulfilling birth experience. Abnormal labour must be recognized and acted upon, and requires a multidisciplinary team including a midwife, obstetrician, anaesthetist and neonatologist. While most labours result in a positive outcome, some labours result in tragedy and each health care team needs to have the skill set to care for women and their families through all types of outcome.

The majority of women aim for a spontaneous vaginal delivery with an intact perineum and fall within the remit of midwifery care. Unfortunately, this outcome is achieved in barely half of all women. Labour is a physiological process with inherent unpredictability and even the most normal birth can result in complications that require obstetric intervention and some form of operative delivery.

Women who encounter complications in the first stage of labour requiring urgent delivery for either maternal or fetal indications will need to be delivered by emergency caesarean section. Complications that occur in the second stage of labour present a choice between instrumental delivery with a ventouse or forceps and delivery by caesarean section. A further group of women will have a scheduled or elective caesarean section performed before the onset of labour. In all cases, operative intervention should only be performed when the benefits outweigh the potential risks. The needs of the mother and the baby should be balanced with careful consideration of the potential consequences in the short term and for the future. Operative deliveries should only be performed by clinicians who have competency in the procedure or under direct supervision of an experienced trainer.

2. CONTROL OF BASIC KNOWLEDGE (written work, written testing, online testing, face-to-face interview, etc.)

2.1. Requirements for the theoretical readiness of students to perform practical classes.

Knowledge requirements:

– Ability to collect data on patient complaints, medical history, life history;
– Ability to evaluate information about the diagnosis using a standard procedure, based on the results of laboratory and instrumental studies. To determine the list of required clinical, laboratory and instrumental studies and evaluate their results;
– Ability to select the leading clinical symptom or syndrome;

– Ability to make a preliminary and a differential diagnosis and make the clinical diagnosis of the disease;
– Ability to determine the principles of treatment of diseases, the necessary mode of work and rest, the nature of nutrition;
– Ability to diagnose emergencies;
– Ability to determine tactics and provide emergency medical care;
– Ability to determine the tactics of physiological pregnancy, physiological labor and the postpartum period;
– Ability to assess mother's condition; to carry out diagnostic and tactical measures in each period of labor; to exam woman in labor; assess the condition of the fetus during childbirth; to conduct the postpartum period;
– Ability to formulate and bring to the mother, relatives and specialists recommendations for the most effective mode of delivery; to provide the necessary information about changes in a female body in the postpartum period;
– Ability to keep medical records.

List of didactic units:

– Abnormal uterine action: classification, risk factors, diagnosis and management. Perinatal effects.
– Fetal distress in labor: diagnosis, management.
– Injuries of the birth canal: vulva, perineum, vagina, cervix.
– Rupture of the uterus: classification, mechanism. Diagnosis, management and prevention.
– Uterine inversion.
– Postpartum fistulas: etiology, management, prevention.
– Operative obstetrics. Early and late abortion.
– Operations for the preparation of the birth canal (episiotomy, amniotomy).
– Obstetric forceps, vacuum delivery, cesarean section: indications, technique.
– Manual removal of the placenta: technique.
– Manual and instrumental examination of the uterus.
– Indications for supravaginal amputation, uterine extirpation, ligation of internal iliac arteries.

2.2. Questions (test tasks, tasks, clinical situations) to test basic knowledge on the topic of the class.

Test tasks

Direction: For each of the multiple-choice questions select the lettered answer that is the one best response in each case.

1. Which of the following is the most common indication for primary cesarean section?

(A) dystocia

(B) prolapsed cord
(C) diabetes
(D) toxemia
(E) malpresentation

2. After delivery, paralysis is noted on one side of the face in a newborn. This is most often associated with which of the following?
(A) abnormalities of the central nervous system (CNS)
(B) facial swelling
(C) forceps-induced nerve injury
(D) neonatal sepsis
(E) pressure on the trigeminal nerve during delivery

3. A patient who is a G2P1 has been pushing for 3 hours and is exhausted after a long labor. The fetal tracing is reassuring. The vertex is at +3 station. On examination, the infant feels about 3000 g and the pelvis is roomy. You feel that a vacuum-assisted vaginal delivery is an indicated option to expedite delivery. In your counseling of the patient, you tell her that the most severe fetal complications of vacuum extraction for the fetus include which of the following?
(A) subgaleal hemorrhage
(B) cephalhematoma
(C) fetal rib fractures
(D) facial lacerations
(E) fetal retinal hemorrhage

4. A 29-year-old woman (gravida 2, para 1) has a rapid labor. Within minutes of her admission, she is found to be completely dilated, with the vertex at +2 station, and she begins pushing. Contractions are regular, every 2–3 minutes, and palpated to be strong. FHTs are approximately 70 bpm. Cervical examination reveals the vertex to be ROP at +2 station. Thick meconium is noted. What should be your next step?
(A) expedite delivery with vacuum
(B) turn the patient on her side and administer oxygen by face mask
(C) begin amnioinfusion and increase IV fluids
(D) await vaginal delivery
(E) give terbutaline to stop contractions

5. During delivery of a 4200 g infant, the mother sustained a third-degree perineal laceration with involvement of the rectal mucosa. What is the best course of action?
(A) leave the tear to heal primarily by itself, because of contamination

(B) pack the defect open for secondary closure
(C) repair the anal sphincter and perineal muscles only
(D) repair the defect in layers
(E) repair the defect with through-and-through sutures
Answer key

1	E
2	C
3	A
4	A
5	D

Case

A 32-year-old woman is admitted to the labour ward at 39+2 weeks' gestation in her second pregnancy. She is having regular painful contractions and on examination her cervix is 4 cm dilated. Her membranes are intact. She has a birth plan and wishes to birth as naturally as possible. The midwife is intermittently auscultating the fetal heart, which is normal. Two hours after her initial vaginal examination the cervix is 6 cm on examination.

Questions:

What would your plan of care for this woman be?

Answer:

This woman has established labour spontaneously and is making normal progress (usually defined as 1 cm cervical dilatation per hour). The fetal heart is normal and she does not wish for any intervention. There is no indication to perform an artificial rupture of membranes or a caesarean section. The fetal heart is normal on intermittent auscultation and there are no indications for continuous monitoring with CTG.

3. FORMATION OF PROFESSIONAL SKILLS (mastering skills, conducting curation, determining the treatment regimen, conducting a laboratory study, etc.).

3.1. Content of tasks (tasks, clinical situations, etc.).

Interactive task:

Students of the group are divided into 3 subgroups of 3-4 people each. They work in the classroom, women's outpatient clinic, reception department of the maternity hospital, labor & delivery ward with pregnants and parturients.

Tasks:

– Subgroup I - to perform general examination, abdominal palpation, calculate estimated fetal weight, identify fetal lie, presentation, position, growth pattern, volume of liquor and also any abnormality, detect whether the presenting part is engaged or not, perform auscultation of fetal heart sounds, assess pattern of uterine activity, asses

results of clinical general and obstetrical examinations, lab tests, make diagnosis and develop a plan of management of labor. If abnormal, determine risk factors for them.

– Subgroup II - to perform general examination, abdominal palpation, calculate estimated fetal weight, identify fetal lie, presentation, position, growth pattern, volume of liquor and also any abnormality, detect whether the presenting part is engaged or not, perform auscultation of fetal heart sounds, assess pattern of uterine activity, asses results of clinical general and obstetrical examinations, lab tests, make diagnosis. Identify the prerequisites and indications for operative vaginal delivery, select a method of management appropriate to the clinical circumstances in every case.

– Subgroup III – to perform general examination, abdominal palpation, calculate estimated fetal weight, identify fetal lie, presentation, position, growth pattern, volume of liquor and also any abnormality, detect whether the presenting part is engaged or not, perform auscultation of fetal heart sounds, assess pattern of uterine activity, asses results of clinical general and obstetrical examinations, lab tests, make diagnosis. Identify the indications for caesarean section, classify it for emergency, choose type of laparotomy and uterine incision should be made.

After 60 minutes the groups discussed and assess results of their work.

Tests:

Direction: For each of the multiple-choice questions select the lettered answer that is the one best response in each case.

1. During an attempted vaginal birth after cesarean at 7 cm, contractions suddenly are not recording by tocometry; the fetal parts are palpated abdominally on examination, and fetal heart tones (FHTs) are not heard. You can feel fetal feet at -2 station. You should do which of the following?

(A) perform immediate laparotomy
(B) perform an immediate ultrasound to evaluate fetal positioning and well-being
(C) given oxytocin to prevent maternal bleeding
(D) perform breech extraction as soon as possible
(E) give terbutaline to stop the contractions

2. In which of the following cases might internal podalic version be indicated?

(A) vertex delivery of the first twin and transverse lie of the second twin
(B) term transverse lie with cervix completely dilated and membranes intact
(C) double footling breech
(D) impacted shoulder presentation
(E) cephalopelvic disproportion

3. Application of forceps is appropriate in which of the following situations?

(A) breech at +3 station, cervix completely dilated, membranes ruptured
(B) vertex at +1 station, cervix completely dilated, membranes intact

(C) vertex at +3 station, cervix completely dilated, membranes ruptured
(D) transverse lie, +3 station, cervix completely dilated, membranes ruptured
(E) vertex at +3 station, cervix +8 cm dilated, membranes ruptured

4. Anticipating success, an obstetrician has made a concerted attempt to deliver a patient using forceps. The attempt fails. How is the procedure termed?
(A) an incomplete delivery
(B) a trial of forceps
(C) malapplication of forceps
(D) failed forceps
(E) high forceps

5. You are delivering a woman (gravida 3, para 2) with two previous successful vaginal births. The woman has been in labor for 12 hours with a 10-hour first stage. The second stage of labor has lasted approximately 1 hour 14 minutes. The baby is doing well without any evidence of distress and of an appropriate size (approximately 3000 g). The mother has had an epidural and is tired from pushing, and you decide to apply forceps. After pelvic examination, forceps are applied to the presenting part of a term pregnancy, but the lock does not properly articulate even with gentle maneuvering. What should you do?
(A) rotate the forceps
(B) apply enough pressure to lock the forceps
(C) exert traction
(D) reapply the forceps
(E) remove the forceps and perform cesarean delivery

Answer key

1.	A
2.	A
3.	C
4.	D
5.	D

Case 1

Ms M, a 28-year-old woman, booked for antenatal care in her first pregnancy. Her pregnancy was uncomplicated. Her membranes ruptured spontaneously at 40 weeks and 4 days. The liquor was clear and her vital signs were normal. She was advised that she could wait for 24 hours to allow spontaneous labour to establish if all was well. Regular contractions started after 4 hours and she presented to the labour ward later that night. On abdominal examination she was assessed to have an average size fetus with one-fifth of the head palpable, confirming engagement. On admission

she had strong regular painful contractions at a rate of 3–4 in 10 minutes. The cervix was soft, central, effaced and 5 cm dilated, with the vertex 2 cm above the ischial spines. She was transferred to a labour room in spontaneous labour for ongoing monitoring. She was monitored with intermittent auscultation of the fetal heart rate at 15 minute intervals and her vital signs were checked every 4 hours. She had vaginal examinations at 4-hourly intervals. The contractions spaced out to 2 in every 10 minutes and 8 hours after admission she was found to be 5 cm dilated.

Questions:

What is the diagnosis and what are the management options?

Answer:

This is arrest of labour in the first stage, most likely due to inefficient uterine contractions. The membranes have ruptured spontaneously and therefore the next option is to commence a Syntocinon™ infusion to augment labour. In this case, Ms M progressed to full dilatation 4 hours after commencing Oxytocin and progressed to a normal vaginal delivery.

Case 2

Ms A, a 36-year-old nulliparous woman, went into spontaneous labour at 41 weeks' gestation. She had no relevant past medical history and findings on examination were unremarkable; the symphseal fundal height was appropriate for the gestational age. Delay in the first stage of labour led to artificial rupture of the membranes (clear liquor drained) and subsequent use of an oxytocin infusion. When the vaginal examination was repeated, the cervix was fully dilated, with the fetal head at the level of the ischial spines and in a right occipito-transverse position. There was marked caput and moulding. Clear liquor continued to drain and there was a normal, reactive fetal heart rate pattern. The midwife waited 1 hour for passive descent and then commenced active pushing. After 20 minutes there was little sign of progress and there were variable decelerations on the CTG.

Questions:

A. Were the safety criteria for an operative vaginal delivery met?

B. How should the delivery be effected?

Simpsons forceps were applied. The forceps were positioned and 'locked'. Traction was applied with a contraction and with maternal pushing. There was minimal descent of the fetal head. Following traction with another contraction, there was no descent of the fetal head.

Questions:

C. What is the appropriate management plan?

D. What complications should be anticipated after delivery?

Answers:

A. The findings on abdominal and vaginal examination are crucial to any consideration of this question. On examination, 0/5th of the fetal head was palpable, the position remained occipito-transverse at the level of the ischial spines with caput and moulding. The pelvic dimensions were average. The prerequisites for a forceps/ventouse delivery were met, but the delivery was classified as midpelvic requiring rotation and was therefore more complex with a higher risk of failure. The appropriate management plan was for transfer to theatre for either a trial of rotational OVD or a caesarean section.

B. On the assumption that the delivery was to be performed by an appropriately trained and experienced obstetrician, and that informed consent was obtained, the prerequisites for an operative vaginal delivery were met. Use of either manual rotation and direct traction forceps or rotational forceps, or rotational ventouse would be reasonable. Although the ventouse is associated with less perineal trauma, the obstetrician opted to use manual rotation and forceps as the presence of caput and moulding indicated that the ventouse was more likely to fail.

C. There has been a failed trial of an OVD, with no descent of the fetal head. Delivery must be by caesarean section. The fetal head should be disimpacted manually prior to caesarian section. A lower segment caesarean section was performed, through a Pfannenstiel incision. Although there was difficulty delivering a deeply impacted fetal head, there was no significant extension of the uterine incision. The neonatal birthweight was 4.35 kg. Closure of the uterus and abdomen was unremarkable.

D. There was a significant risk of PPH due to uterine atony. In addition to prophylactic antibiotic and anticoagulant therapy (to reduce the likelihood of infective and thrombotic complications), a bolus dose of oxytocin at delivery was followed by an intravenous infusion of oxytocin over 4 hours. No postoperative complications ensued and Ms A was discharged home, with her baby, 4 days after the caesarean section. She was given a hospital follow-up appointment to discuss the events of the labour and delivery and the implications for the future.

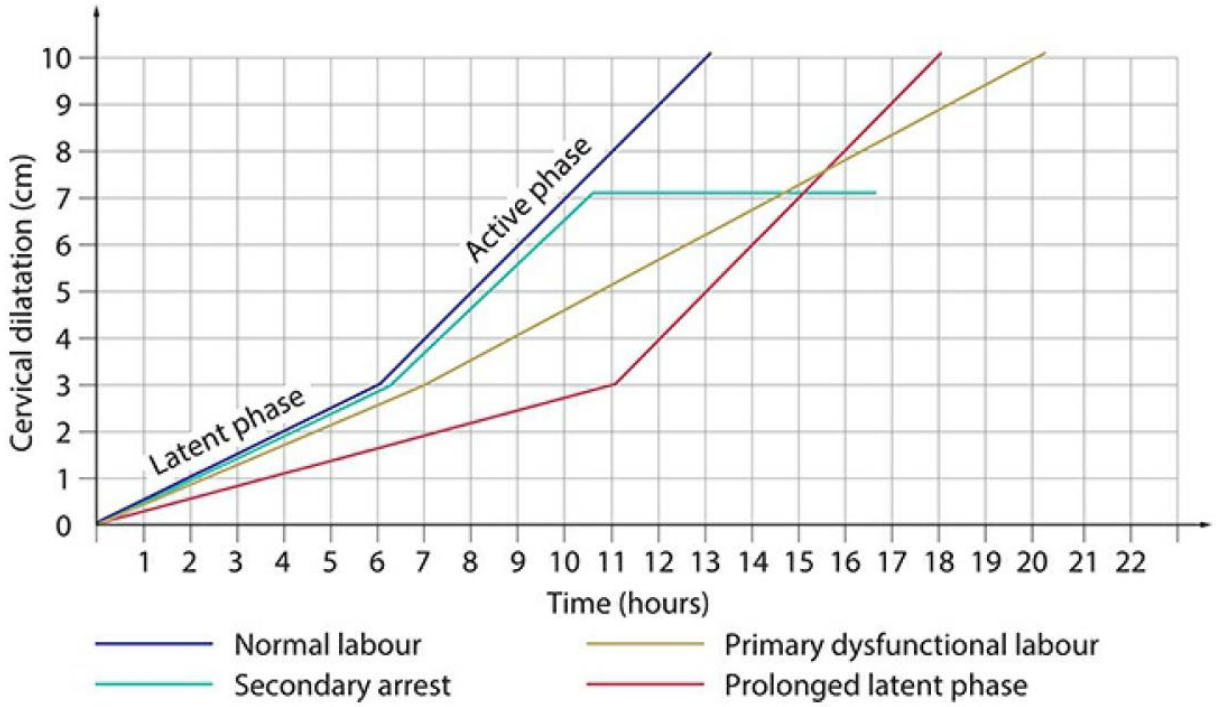
3.2. Educational materials, recommendations (instructions) for performing tasks

ABNORMAL LABOR

Labour becomes abnormal when there is poor progress (as evidenced by a delay in cervical dilatation or descent of the presenting part) and/or the fetus shows signs of compromise. Also, if there is a fetal malpresentation, a multiple pregnancy, a uterine scar or if labour has been induced, labour cannot be considered normal. Progress in labour is dependent on the ‘3 Ps’ as described previously (powers, passages, passenger). Abnormalities in one or more of these factors can slow the normal progress of labour. Plotting the findings of serial vaginal examinations on the partogram will help to highlight poor progress during the first and second stages of labour.

Patterns of abnormal progress in labour

The use of a partogram to plot the progress of labour improves the detection of poor progress. Three patterns of abnormal labour are commonly described.



Prolonged latent phase occurs when the latent phase is longer than the arbitrary time limits discussed previously. It is more common in primiparous women and probably results from a delay in the chemical processes that occur within the cervix that soften it and allow effacement. Prolonged latent phase can be extremely frustrating and tiring for the woman. However, intervention in the form of artificial rupture of membranes (ARM) or oxytocin infusion will increase the likelihood of poor progress later in the labour and the need for caesarean birth. It is best managed away from the labour suite with simple analgesics, mobilization and reassurance. The partogram should not be commenced until the latent phase of labour is complete.

'Primary arrest' is the term used to describe poor progress in the active first stage of labour (<2 cm cervical dilatation/4 hours) and is also more common in primiparous women. It is most commonly caused by inefficient uterine contractions, but can also result from cephalopelvic disproportion (CPD), malposition and malpresentation of the fetus.

'Secondary arrest' occurs when progress in the active first stage is initially good but then slows or stops altogether, typically after 7 cm dilatation. Although inefficient uterine contractions may be the cause, fetal malposition, malpresentation and CPD feature more commonly than in primary arrest.

'Arrest in the second stage of labour' (not to be confused with 'secondary arrest') occurs when delivery is not imminent after the usual interval of pushing in the

second stage of labour. This may be due to inefficient uterine activity, malposition, malpresentation, CPD or a resistant perineum. In some cases it may be due to maternal exhaustion, fear or pain.

Management of abnormal labour

Poor progress in the first stage of labour has been defined as cervical dilatation of less than 2 cm in 4 hours, usually associated with failure of descent and rotation of the fetal head. It may relate to the powers, the passages or the passenger.

Dysfunctional uterine activity ('powers')

This is the most common cause of poor progress in labour. It is more common in primigravidae and in older women and is characterized by weak, irregular and infrequent contractions.

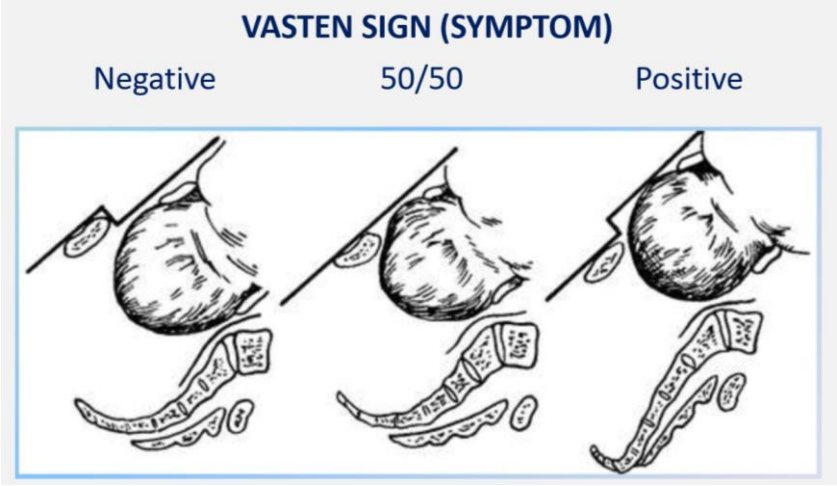
Cephalopelvic disproportion ('passages' and 'passenger')

CPD implies anatomical disproportion between the fetal head and maternal pelvis.

Findings suggestive of CPD:

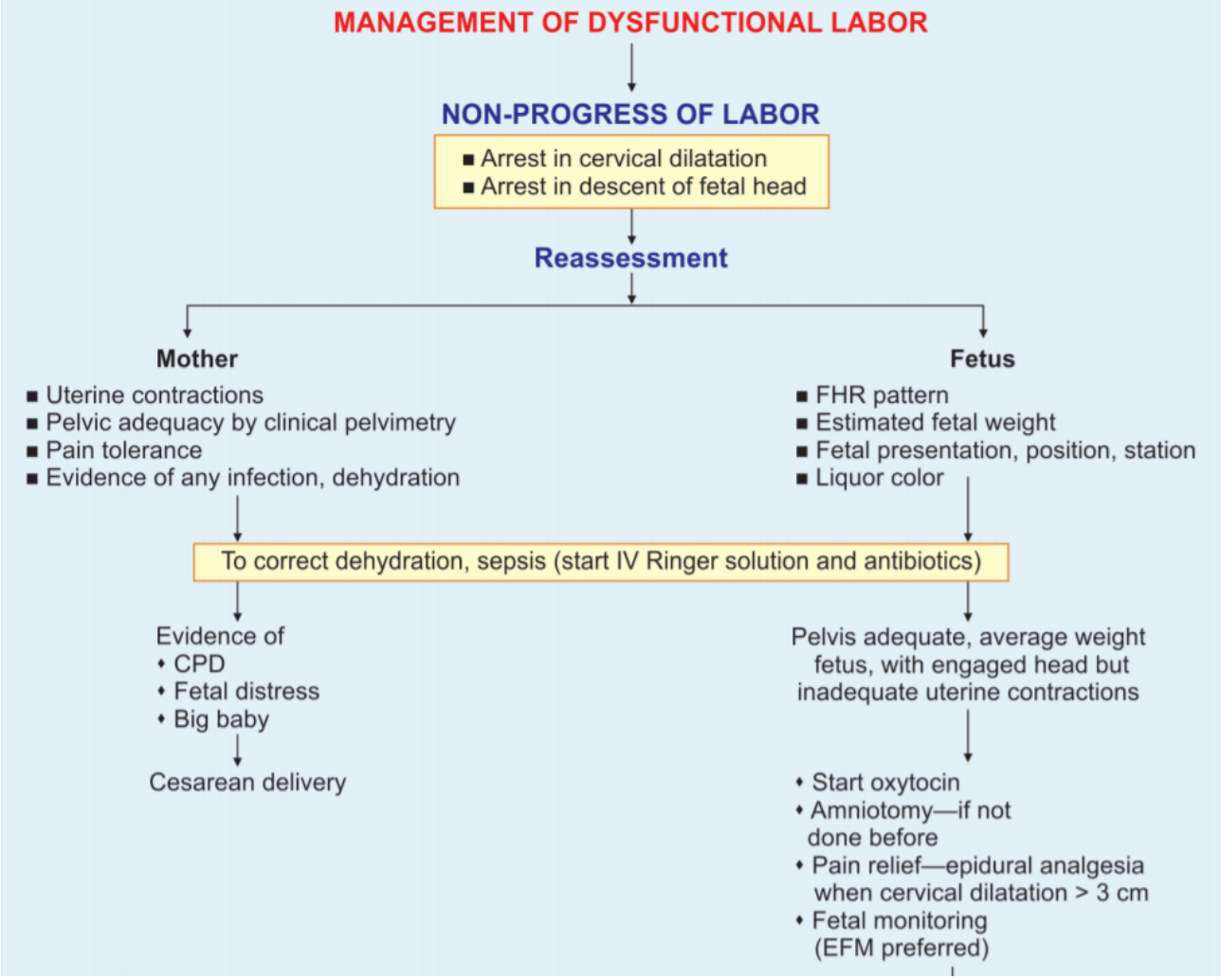
- Fetal head is not engaged.
- Progress is slow or arrests despite efficient uterine contractions.
- Vaginal examination shows severe moulding and caput formation.
- Head is poorly applied to the cervix.
- Haematuria.
- Pathological contraction ring.

- Positive Vasten's symptom.



Abnormalities of the birth canal (‘passages’)

The bony pelvis may cause delay in the progress of labour as discussed above (CPD). Abnormalities of the uterus and cervix can also delay labour. Unsuspected fibroids in the lower uterine segment can prevent descent of the fetal head. Delay can also be caused by ‘cervical dystocia’, a term used to describe a non-compliant cervix that effaces but fails to dilate because of severe scarring or rigidity, usually as a result of previous cervical surgery such as a cone biopsy. Caesarean section may be necessary.



Poor progress in the second stage of labour

Birth of the baby is expected to take place within 3 hours of the start of the active second stage (pushing) in nulliparous women and 2 hours in parous women. Delay is diagnosed if delivery is not imminent after 2 hours of pushing in a nulliparous labour and 1 hour for a parous woman. The causes of second stage delay can again be classified as abnormalities of the powers, the passages and the passenger. Secondary dysfunctional uterine activity (‘powers’) is a common cause of second stage delay, and may be exacerbated by epidural analgesia.

Management options for delay in the second stage of labour:

– Continued pushing with encouragement.
– Regular reviews of progress and fetal wellbeing.
– Oxytocin to augment contractions.
– Episiotomy for a resistant perineum.
– Instrumental vaginal birth (forceps or ventouse/vacuum).
– Caesarean section.

PERINEAL REPAIR

Of women who have a vaginal delivery, 85% will have some degree of perineal trauma and 60–70% will require suturing. The first important step following birth of the baby and delivery of the placenta is to examine the woman carefully to classify the perineal tear. Perineal tears should be classified as first, second, third or fourth degree, and when in doubt the operator should classify according to a higher rather than lower grade.

Grading of perineal tears

First degree	Injury to perineal skin only
Second degree	Injury to perineum involving muscles but not anal sphincter
Third degree	Injury to perineum involving the anal sphincter complex
IIIa	<50% of EAS torn
IIIb	>50% of EAS torn
IIIc	Both the EAS and IAS torn
Fourth degree	Fourth-degree lacerations involve the perineal fascia and muscles, both the EAS and the IAS, and the rectal mucosa

EAS: external anal sphincter; IAS: internal anal sphincter.

Episiotomy

An episiotomy is a surgical incision of the perineum performed during the second stage of labour to enlarge the vulval outlet and assist vaginal birth. A routine episiotomy was not protective of more severe perineal tears (OASI). In the UK, rates now approximate the World Health Organization (WHO) recommendation of 10% of spontaneous vaginal deliveries. However, there remains considerable international variation (rates are 50% in the USA and 99% in Eastern Europe).

Complications

Short-term complications of perineal trauma or episiotomy include pain, infection and haemorrhage. Long-term effects include dyspareunia, incontinence of urine and incontinence of flatus or faeces. The risks are highest with OASI, especially if an anal sphincter injury has been missed. These morbidities can have a profound impact on women's health, relationships and self-esteem.

KEY LEARNING POINTS

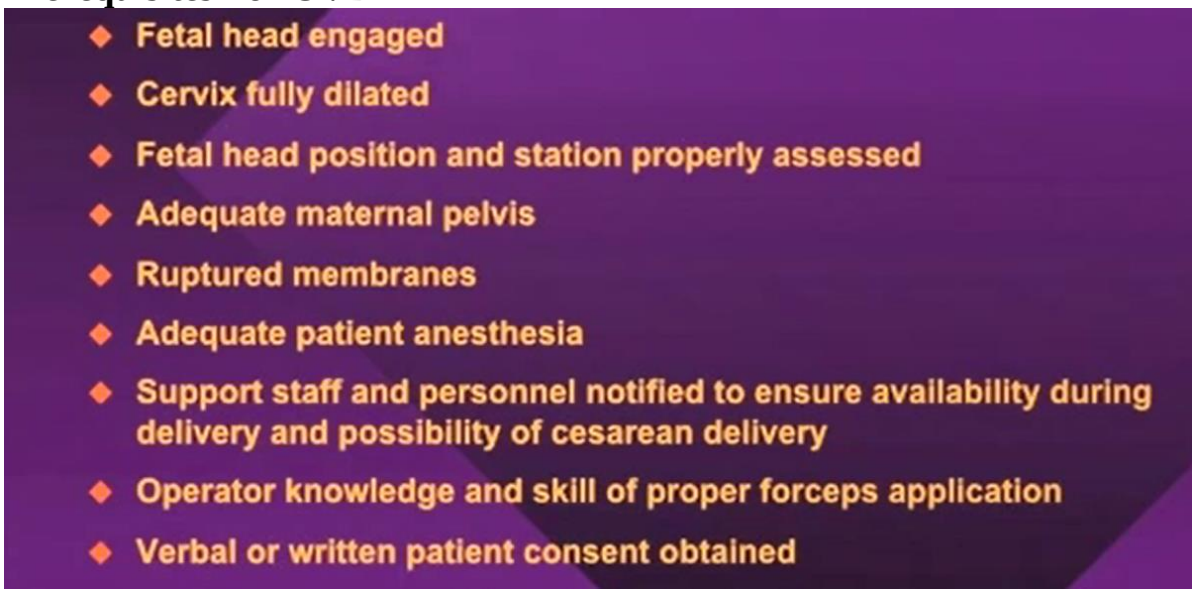
- First- or second-degree tearing and uncomplicated episiotomy can be repaired under epidural or local anaesthesia in a labour room by an obstetrician.
- Assessment of the anal sphincter complex is essential in all cases to ensure that a third- or fourth-degree tear has not been missed.

- Third- or fourth-degree tears require regional anaesthesia and are usually repaired in an operating theatre by an obstetrician with good lighting and an assistant.
- Either ‘end-to-end’ or overlap repair of the anal sphincter muscle with a long-acting suture material is acceptable.
- Aftercare is important for all women who tear, but women with OASI should receive antibiotics, stool softeners and follow-up specialist review including physiotherapy.
- Women who experience significant pelvic floor symptoms following OASI should be offered an elective caesarean section in a future pregnancy.

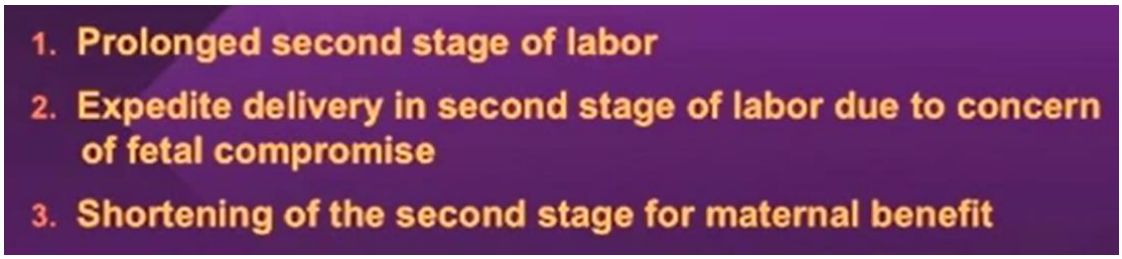
OPERATIVE VAGINAL DELIVERY

Operative vaginal delivery (OVD) refers to a vaginal birth with the use of any type of forceps or vacuum extractor (ventouse). The terms instrumental delivery, assisted vaginal delivery and OVD are used interchangeably.

Prerequisites For OVD



Indications for OVD



Classification of OVD

Outlet	Fetal scalp visible without separating the labia* Fetal skull has reached the pelvic floor Sagittal suture is in the antero-posterior diameter or right or left occiput anterior or posterior position (rotation does not exceed 45°) Fetal head is at or on the perineum
Low	Leading point of the skull (not caput) is at station plus 2 cm or more but not on the pelvic floor Two subdivisions: (a) rotation of 45° or less; (b) rotation more than 45°
Mid	Fetal head is no more than 1/5 palpable per abdomen, usually 0/5 Leading point of the skull is above station plus 2 cm but not above the ischial spines (station 0 to +1) Two subdivisions: (a) rotation of 45° or less; (b) rotation of more than 45°
High	Not appropriate, therefore not included in classification (station –1 or above)
Adapted from RCOG 2011, ACOG 2000.	

Ventouse/vacuum extractor cups. **(A)** Metal ventouse cup; **(B)** silicone rubber cup; **(C)** OmniCup™.


Application of forceps.

KEY LEARNING POINTS

– OVD should be classified according to the position and station of the presenting part.

– Clinical assessment and confirmation that the safety criteria have been met are prerequisites for OVD.

– Vacuum or forceps may be suitable depending on the clinical circumstances and operator's preference.

– OVDs with a higher chance of failure should be conducted in an operating theatre.

– Contingency planning is an essential part of any OVD.

– Anticipation and early management of maternal and neonatal complications is essential.

CAESAREAN SECTION

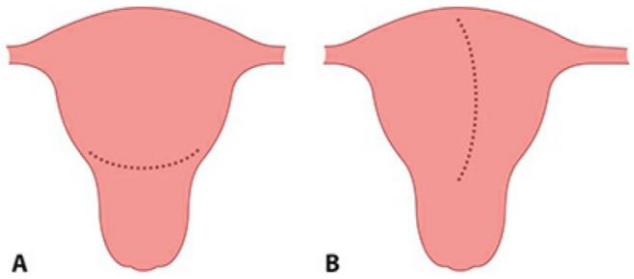
A caesarean section is a surgical procedure in which incisions are made through a woman's abdomen (laparotomy) and uterus (hysterotomy) to deliver one or more babies.

Classification system for emergency caesarean section

Category 1: Immediate threat to life of woman or fetus
Category 2: No immediate threat to life of woman or fetus
Category 3: Requires early delivery
Category 4: At a time to suit the woman and maternity services

The four major indications accounting for greater than 70% of operations are:

- Previous caesarean section.
- Malpresentation (mainly breech).
- Failure to progress in labour.
- Suspected fetal compromise in labour.
- Other indications, such as multiple pregnancy, placental abruption, placenta praevia, fetal disease and maternal disease, are less common.



Uterine incisions for caesarean section. **(A)** Transverse lower segment incision; **(B)** classical caesarean section incision.

KEY LEARNING POINTS

– Caesarean section should be recommended only when the benefits outweigh the risks.
– Informed written consent is required.
– Lower uterine segment caesarean section under regional anaesthesia is optimal.
– Common maternal complications include haemorrhage, infection and pain.
– Common neonatal complications include respiratory morbidity.
– Up to 70% of women who labour subsequently achieve a VBAC.

– The risks and benefits of ERCS versus VBAC require counselling on several occasions.
– All adverse outcomes of attempted OVD and caesarean section require a clinical incident form and review.

3.3. Requirements for the results of work.

– To take a medical history (general and specific, such as menstrual, obstetrics) and record information in a standardized proforma,
– to perform general examination, assess the health status of the mother, calculate gestational age,
– to perform abdominal inspection and asses abdominal enlargement, pregnancy marks-linea nigra, striae, surgical scars (midline or suprapubic),
– to perform abdominal palpation, calculate estimated fetal weight, identify fetal lie, presentation, position, growth pattern, volume of liquor and also any abnormality, detect whether the presenting part is engaged or not,
– to perform auscultation of fetal heart sounds,
– to assess pattern of uterine activity,
– to asses results of clinical general and obstetrical examinations, lab tests,
– to make diagnosis and develop a plan of management of labor,
– to understand the contributors to abnormal labour and its management,
– to be aware of the social, psychological and governance elements of labour and delivery,
– to understand the appropriate management of perineal tears and episiotomy,
– to understand the indications, contraindications, procedures of instrumental delivery with ventouse or forceps,
– to identify the prerequisites for operative vaginal delivery, select a method of management appropriate to the clinical circumstances in every case, be aware of possible complications that may arise,
– to understand the indications, procedure, complications and consequences of caesarean section, appreciate that both primary and repeat cesarean delivery are strong risk factors for cesarean hysterectomy.

3.4. Control materials for the final stage of the class: tasks, tests, etc.

Tests

1. There are many relative contraindications to the use of vacuum extraction for delivery if all else is appropriate. What would be an acceptable scenario for application of a vacuum extractor?
(A) nonvertex presentation
(B) fetal coagulopathies
(C) cervix is 9 cm dilation with fetal distress in labor

(D) fetal prematurity <35 weeks
(E) fetal scalp electrode

2. You are counseling a couple in your clinic who desire VBAC (vaginal birth after cesarean section). Her baby is in a vertex presentation, appropriate size for 37 weeks, and her previous low transverse procedure was for breech presentation. In providing informed consent, in which of the following ways do you explain the risk of uterine rupture?
(A) less than 1%
(B) between 2% and 5%
(C) 15–20%
(D) dependent on the length of her labor
(E) dependent on the location and proximity of the scar site to the placental implantation

3. Internal version and extraction at term is indicated in which of the following?
(A) face presentation mentum posterior
(B) shoulder presentation in early labor
(C) persistent brow
(D) the second twin
(E) transverse lie

4. A patient sustained a laceration of the perineum during delivery. It involved the muscles of the perineal body but not the anal sphincter. Such a laceration would be classified as which of the following?
(A) first degree
(B) second degree
(C) third degree
(D) fourth degree
(E) fifth degree

5. A term infant is delivered as a double-footling breech. It is noted to have an Apgar of 3 at one minute and later to be irritable and restless. The infant's muscles are rigid, and the anterior fontanel bulges. The patient develops progressive bradycardia. The most likely diagnosis is
(A) brain stem injury
(B) infection
(C) congenital abnormality
(D) placental insufficiency
(E) intracranial hemorrhage

6. On examination in the nursery, a newborn is found to have paralysis of one arm with the forearm extended and rotated inward next to the trunk. This is called
(A) Klumpke's paralysis
(B) lues stricture
(C) Erb's palsy
(D) a fracture of the clavicle
(E) a comminuted fracture of the humerus

7. Traumatic brain hemorrhage would be found in the greatest frequency associated with which of the following circumstances?
(A) vacuum extraction at the pelvic outlet
(B) difficult mid-forceps deliveries
(C) elective cesarean section
(D) neonatal coagulopathy
(E) spontaneous vertex deliveries

8. A 32-year-old woman (gravida 3, para 1, abortus 1) at term is admitted in labor with an initial cervical examination of 6-cm dilatation, complete effacement, and the vertex at –1 station. Estimated fetal weight is 3200 g, and her first pregnancy resulted in an uncomplicated vaginal delivery of a 3000 g infant. After 2 hours, there is no cervical change. An intrauterine pressure catheter is placed. This shows three contractions in a 10-minute period, each with a strength of 40 mm Hg. What is this abnormality of labor termed?
(A) prolonged latent phase
(B) active-phase arrest
(C) failure of descent
(D) arrest of latent phase
(E) protraction of descent

9. A 22-year-old woman (gravida 1, para 0) at term is admitted in labor with an initial cervical examination of 7-cm dilatation, complete effacement, and the vertex at –1 station. Estimated fetal weight is 3200 g. After 2 hours, there is no cervical change. An intrauterine pressure catheter is placed. This shows 100 Montevideo units. What is the best course of action at this time?
(A) wait 2 more hours and repeat the cervical examination
(B) start oxytocin augmentation
(C) perform a cesarean section
(D) discharge the patient, instructing her to return when contractions become stronger
(E) therapeutic rest with analgesia and short-acting anti-anxiety medication

10. A patient is experiencing an arrest of decent. During the evaluation one can feel that it is a vertex presentation with the sagittal suture transverse or oblique but closer to the symphysis than the promontory. What is this specific condition called?
(A) posterior asynclitism
(B) internal rotation
(C) anterior asynclitism
(D) extension
(E) restitution

Answer key

1.	E	6.	C
2.	A	7.	B
3.	D	8.	B
4.	B	9.	B
5.	E	10.	A

Case 1

A 38-year-old woman, G7P6, presents to triage at 40 weeks of gestation by last menstrual period because of painful contractions. She denies bleeding or leakage of amniotic fluid. All six of her previous pregnancies resulted in term vaginal deliveries. Vital signs are normal, height is 5 ft 4 in and weight is 190 lb (86 kg). Her fundal height is 47 cm, fetal heart tones are detected at 160 beats per minute and presentation cannot be ascertained on abdominal examination. Cervical examination reveals a bulging bag of water, dilation of 6 cm, complete effacement, and no presenting part in the pelvis. A bedside ultrasound is performed which indicates excessive amniotic fluid and a cephalic presentation. During the ultrasound examination the patient's membranes rupture spontaneously followed by vaginal passage of copious amounts of amniotic fluid and a prolapsed umbilical cord. An emergency cesarean delivery under general anesthesia results in the birth of a 4500 g male infant. After the placenta is removed, the uterus is flaccid and bleeding is brisk. There is no response to massage, bimanual uterine compression, and a variety of uterotonic agents. Blood loss is estimated at 2000 cc and bilateral uterine artery ligation produces no improvement. Blood pressure is now 80/40 mm Hg, pulse is 120 per minute, and typespecific blood has been requested.

Questions:

1. What is the most likely diagnosis?
2. What is your next step?
3. What are the complications of the next step?

Answers:

1. Most likely diagnosis: Uterine atony refractory to conservative management.
2. Next step: Proceed with cesarean hysterectomy.
3. Potential complications: Urinary tract injury, high likelihood of transfusion, loss of fertility, admission to intensive care, death.

Case 2

A 23-year-old woman, G1P0, at 33 weeks' gestation is undergoing induction of labor for severe preeclampsia. She has a functioning epidural catheter in place and has been pushing for 20 minutes. The fetal heart rate (FHR) tracing has been normal (category I) throughout the labor but you are called to the bedside for a prolonged deceleration to 60 beats per minute (bpm) lasting 3 minutes. You perform a sterile vaginal examination that rules out a prolapsed umbilical cord, and confirms complete dilation of the cervix with the fetal head at +2 station. Now at 7 minutes the FHR remains in the 60s.

Questions:

1. What is the most likely diagnosis?
2. What is your next step?
3. What complications are associated with your method of management?

Answers:

1. Most likely diagnosis: Prolonged deceleration of the FHR in the second stage of labor.
2. Next step: Forceps-assisted delivery.
3. Complications: Maternal complications include hemorrhage from genital tract lacerations and possible damage to the anal sphincter with future risk of feces incontinence. Newborn complications include birth trauma and hypoxia.

4. SUMMING UP

Assessment of the ongoing learning activity at the practical class:

1. Assessment of the theoretical knowledge on the theme:
   - methods: individual survey on the theme, participation of the students in the discussion of problem situations; assessment of performance of tests on the theme;
   - the maximum score – 5, the minimum score – 3, the unsatisfactory score – 2.
2. Assessment of practical skills on the theme:
   - methods: assessment of the solution of situational tasks (including calculation) on the theme;
   - the maximum score – 5, the minimum score – 3, the unsatisfactory score – 2.

Assessment of the individual task:

1. Assessment of the quality of the performance of the individual task:
   – the maximum score – 5, the minimum score – 3, the unsatisfactory score – 2.
2. Assessment of the presentation and defense of an individual task, participation in the assessment of the business plan of the competitors and its critical analysis:
   – the maximum score – 5, the minimum score – 3, the unsatisfactory score – 2.

The score for one practical class is the arithmetic average of all components and can only have an integer value (5, 4, 3, 2), which is rounded statistically.

Criteria for ongoing assessment at the practical class:

5	The student is fluent in the material, takes an active part in the discussion and solution of situational clinical problems, confidently demonstrates practical skills during the examination of a pregnant and interpretation of clinical, laboratory and instrumental studies, expresses his opinion on the topic, demonstrates clinical thinking.
4	The student is well versed in the material, participates in the discussion and solution of situational clinical problems, demonstrates practical skills during the examination of a pregnant and interpretation of clinical, laboratory and instrumental studies with some errors, expresses his opinion on the topic, demonstrates clinical thinking.
3	The student isn't well versed in material, insecurely participates in the discussion and solution of a situational clinical problem, demonstrates practical skills during the examination of a pregnant and interpretation of clinical, laboratory and instrumental studies with significant errors.
2	The student isn't versed in material at all, does not participate in the discussion and solution of the situational clinical problem, does not demonstrate practical skills during the examination of a pregnant and the interpretation of clinical, laboratory and instrumental studies.

RECOMMENDED LITERATURE

Basic:

1. Gladchuk I.Z. Obstetrics: student`s book / Gladchuk I.Z., Ancheva I.A. . – Vinnitsia: Nova Knyha, 2021. – 288 p.
2. Obstetrics and Gynecology: in 2 volumes. Volume 1. Obstetrics: textbook / V.I. Gryshchenko, M.O. Shcherbina, B.M. Ventskivskyi et al. (2nd edition). – «Medicina», 2018. – 392 p.
3. Hiralal Konar DC Dutta's Textbook of Obstetrics (9th Ed.) / Hiralal Konar (Ed.). – Jp Medical Ltd, 2018. – 700 p.
4. F. Gary Cunningham Williams Obstetrics (26th Edition) / F. Gary Cunningham, Kenneth Leveno, Jodi Dashe, Barbara Hoffman, Catherine Spong, Brian Casey. – McGraw Hill / Medical, 2022. – 1328 p.

5. Jeremy Oats, Suzanne Abraham Llewellyn-Jones Fundamentals of Obstetrics and Gynaecology (10th Ed) / Jeremy Oats, Suzanne Abraham. – Elsevier, 2016. – 384 p.

Additional:

1. The PROMPT-CIPP Editorial Team. (2019). PROMPT-CIPP Course Participant's Handbook: Care of the Critically Ill Pregnant or Postpartum Woman (Critical Car Prompt Practical Obstetric Multi-professional Training). – Cambridge University Press; 1st edition, 2019. – 136 p.
2. L. A. Magee The FIGO Textbook of Pregnancy Hypertension. An evidence-based guide to monitoring, prevention and management. / L. A. Magee, P. Dadelszen, W. Stones, M. Mathai (Eds). – The Global Library of Women's Medicine, 2016. – 456 p.
3. Edwin Chandraharan Handbook of CTG Interpretation: From Patterns to Physiology / Edwin Chandraharan. – Cambridge University Press; 1st edition, 2017. – 256 p.
4. Louise C. Kenny, Jenny E. Myers Obstetrics by Ten Teachers (20th ed) / Louise C. Kenny, Jenny E. Myers. – CRC Press, 2017. – 342 p.
5. J. Studd Current Progress in Obstetrics and Gynaecology. Vol 4. / J. Studd, Seang Lin Tan, F. Chervenak. – TreeLife Media (A Div of Kothari Medical), 2017. – 419 p.
6. J. Studd Current Progress in Obstetrics and Gynaecology. Vol 5. / J. Studd, Seang Lin Tan, F. Chervenak. – TreeLife Media (A Div of Kothari Medical), 2019. – 403 p.
7. J. Studd Current Progress in Obstetrics and Gynaecology. Vol 6. / J. Studd, Seang Lin Tan, F. Chervenak. – TreeLife Media (A Div of Kothari Medical), 2022. – 309 p.
8. Mark Landon Obstetrics: Normal and Problem Pregnancies, 8th Edition / Mark Landon, Henry Galan, Eric Jauniaux, Deborah Driscoll, Vincenzo Berghella, William Grobman, et al. – Elsevier, 2021. – 1280 pp.
9. Mark B. Landon Gabbe's Obstetrics Essentials: Normal & Problem Pregnancies, 1st Edition / Mark B. Landon, Deborah A. Driscoll, Eric R. M. Jauniaux, Henry L. Galan, William A. Grobman, Vincenzo Berghella. – Elsevier, 2019. – 496 pp.
10. Ian M. Symonds, Sabaratnam Arulkumaran Essential Obstetrics and Gynaecology, 6th Edition / Ian M. Symonds, Sabaratnam Arulkumaran. – Elsevier, 2020. – 480 pp.
11. Myra J. Wick Mayo Clinic Guide to a Healthy Pregnancy, 2nd Edition / Myra J. Wick. – Mayo Clinic Press, 2018. – 520 p.

INTERNET SOURCES:

- https://www.cochrane.org/
- https://www.ebcog.org/
- https://www.acog.org/
- https://www.uptodate.com
- https://online.lexi.com/
- https://www.ncbi.nlm.nih.gov/
- https://pubmed.ncbi.nlm.nih.gov/
- https://www.thelancet.com/
- https://www.rcog.org.uk/
- https://www.npwh.org/