# Obstetric and perinatal sequelae of labor in women with breech presentation

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A – research concept and design; B – collection and/or assembly of data; C – data analysis and interpretation; D – writing the article; E – critical revision of the article; F – final approval of the article

**The aim of the study** is to characterise the somatic and obstetric and gynaecological anamnesis, as well as to assess the features of pregnancy, childbirth and newborns' condition in women with breech presentation.

**Materials and methods**. The medical documents of 2980 patients with breech presentation in the period from 2022 to 2024 by materials of the Municipal Non-Commercial Enterprise "Zaporizhzhia Regional Clinical Children's Hospital" of the Zaporizhzhia Regional Council were analysed. The study group included 65 histories of pregnancy and childbirth (primary accounting documentation form No. 096/o) and 68 newborn medical records (primary accounting documentation form No. 097/o). The used research methods were data from: obstetric, gynaecological, and somatic history; management of pregnancy, childbirth, initial assessment of newborns; results of newborn observation during their stay in the department of the hospital.

**Results**. When analysing medical records, breech presentation was diagnosed in 65 pregnant women (2.2 %). In 60 women with breech presentation, the delivery ended in a caesarean section (92.3 %), and in 5 (7.7 %) women with breech presentation, the delivery went through the natural birth canal. In the case of breech presentation, which accounted for 73.3 %, all pregnant women were delivered by caesarean section (88.6 % as planned, 11.4 % as urgent due to fetal distress). Other indications for caesarean section included: breech presentation of the first fetus in multiple pregnancy, uterine scar after caesarean section, pelvic ring deformity, HIV infection with a high viral load and premature detachment of a normally located placenta.

**Conclusions.** When analysing the anamnesis of women with breech presentation, the vast majority of extragenital pathology (76.9 %) was cardiovascular and endocrine diseases. An analysis of the course of gestation in women with breech presentation revealed that 40 % had such pregnancy complications as hypertensive disorders, pre- and post-eclampsia, anaemia, fetal distress, and premature rupture of membranes. Complications of the perinatal period accounted for 30.9 % (neonatal jaundice, congenital infections and parasitic diseases, neonatal encephalopathy, prematurity, etc.).

**Keywords**: pregnancy, breech presentation, fetus, newborn, cesarean section.

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## Акушерські та перинантальні наслідки розродження у жінок із тазовим передлежанням плода

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**Мета роботи –** дати характеристику соматичного та акушерсько-гінекологічного анамнезу, а також оцінити особливості перебігу вагітності, пологів і стану новонароджених у жінок із тазовим передлежанням плода.

**Матеріали і методи**. Проаналізували медичну документацію 2980 пацієнток із тазовим передлежанням плода в період з 2022 до 2024 року за матеріалами КНП «Запорізька обласна клінічна дитяча лікарня» ЗОР. Група дослідження включала 65 історій вагітності та пологів (форма первинної облікової документації № 096/о) та 68 медичних карт новонародженого (форма первинної облікової документації № 097/о). Під час дослідження проаналізували відомості акушерського, гінекологічного, соматичного анамнезу, дані щодо ведення вагітності, пологів, результати первинного оцінювання стану новонароджених, а також результати спостереження за новонародженими під час перебування у відділенні.

**Результати.** Під час аналізу медичної документації виявлено, що тазове передлежання діагностовано в 65 (2,2 %) вагітних. У 60 жінок із тазовим передлежанням пологи завершилися кесаревим розтином (92,3 % випадків), у 5 (7,7 %) жінок при сідничному передлежанні пологи відбулися через природні пологові шляхи. При ножних передлежаннях, які становили 73,3 %, всі вагітні розроджені шляхом кесаревого розтину (88,6 % випадків – планово, 11,4 % – ургентно внаслідок дистресу плода). З-поміж ін-

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ших показань до кесаревого розтину: ножне передлежання першого плода при багатоплідній вагітності, рубець на матці після кесаревого розтину, деформація тазового кільця, ВІЛ-інфекція з високим вірусним навантаженням та передчасне відшарування нормально розташованої плаценти.

**Висновки.** Під час аналізу даних анамнезу жінок з тазовим передлежанням виявлено, що з-поміж екстрагенітальної патології (76,9 %) переважну більшість становили захворювання серцево-судинної та ендокринної систем. У результаті аналізу перебігу гестації в жінок із тазовим передлежанням встановили, що 40 % мали такі ускладнення вагітності, як гіпертензивні розлади, багатоводдя та маловоддя, анемію, дистрес плода, передчасний розрив плодових оболонок. Ускладнення перинатального періоду становили 30,9 % (неонатальна жовтяниця, вроджені інфекції та паразитарні хвороби, неонатальна енцефалопатія, недоношеність тощо).

**Ключові слова:** вагітність, тазове передлежання, внутрішньоутробний плід, новонароджений, кесарів розтин.

**Актуальні питання фармацевтичної і медичної науки та практики. 2025. Т. 18, № 1(47). С. 40-44**

Most obstetricians consider breech births to be pathological. Up to 5 % of all babies are born in the breech position (BP), but the method of delivery remains controversial [1,2,3,4,5,6,7].

Prematurity, multiple pregnancy, aneuploidy, congenital anomalies, Mueller's anomalies (saddle uterus, bicornuate uterus, double uterus), uterine leiomyoma, pelvic tumour, placenta previa, congenital anomalies of the fetus (neural tube defects, hydrocephalus or anencephaly of the fetus), neuromuscular diseases, head and pelvic disproportion, prematurity, low birth weight, oligohydramnios, short umbilical cord, history of caesarean section (CS) or BP, gestational diabetes are the factors that most often contribute to BP [8,9].

Vaginal delivery in the breech presentation, compared with the cephalic presentation, is associated with a greater risk of complications for the baby due to factors such as umbilical cord prolapse and brachial plexus injury. For example, the prevalence of BP was negatively correlated with gestational age, with a decrease from 23.5 % at 24–27 weeks to 2.5 % at term [10].

BP in preterm birth is associated with an obstetric risk factor compared to cephalic presentation. These risks decrease linearly with gestational age [10]. For example, in Germany, the incidence of fetal BP is about 9 % between 33 and 36 weeks of gestation, 18 % between 28 and 32 weeks, and approximately 30 % before 28 weeks of gestation [11].

In addition, BP in preterm and full-term pregnancy is associated with obstetric risk factors for adverse neonatal outcomes, such as oligohydramnios, fetal growth retardation, and congenital anomalies [12].

Two large population-based studies found that the incidence of morbidity and mortality in newborns after 37 + 0 weeks of gestation with BP was higher after attempted vaginal delivery than after surgical delivery [13,14,15].

Obstetric tactics for the management of labour with BP in term pregnancy are not uniform, and it is still a controversial issue whether a CS or vaginal delivery should be recommended. The likelihood of a CS is positively correlated with birth weight in a planned vaginal delivery, but there is no evidence on the threshold for an expected birth weight. However, patients should be informed about the increased likelihood of CS during labour when attempting a vaginal birth with a BP to make an informed joint decision about labour management [16]. This is also influenced by the lack of evidence-based guidelines and conflicting publications on the subject [16,17,18].

The only way to reduce CS is to attempt an external cephalic version (ECV), a procedure that involves turning the fetus from a breech to a head position, thereby reducing the incidence of CS. ECV may reduce the incidence of CS in this population of women with BP and therefore reduce the incidence of this presentation during labour. Studies have shown that the use of ECV reduces the incidence of CS by approximately two-thirds in full-term pregnancies with BP. ECV is considered a safe and cost-effective method [19]. ECV is a procedure that involves external rotation of the fetus through the mother's abdomen from the breech to the head position [6]. According to the literature, the success rate of ECV is 71.7 %, and the rate of vaginal delivery is 80.6 % [5,20]. Women with breech fetus have a lower ECV attempt rate and an increased likelihood of CS at 38 weeks' gestation [1]. Increased use of ECV may be an important approach to reducing the high incidence of CS [21]. Currently, both the Royal College of Obstetricians and Gynaecologists (RCOG) and the American College of Obstetricians and Gynaecologists (ACOG) recommend that all women with uncomplicated singleton BP should be offered ECV. It is known to be a relatively simple and safe manoeuvre that effectively reduces the risk of BP at term [22,23].

Indications for caesarean section include breech presentation (after an unsuccessful attempt at external rotation at 36 weeks, in the presence of contraindications to external rotation at the insistence of a pregnant woman, transverse fetal position, as well as breech presentation or malposition of the first fetus in multiple pregnancy [24]. Effective screening for BP at 36–37 weeks of gestation, considering obstetric history, pelvic shape, maternal condition, type of BP, and fetal parameters, will help to determine the indications for a CS in a balanced manner [17]. The number of planned CS is increasing worldwide and has become a global problem [16,19]. However, planned CS compared to vaginal delivery of full-term infants with BP can reduce perinatal mortality and short-term morbidity in children, while there is no obvious difference in maternal or child morbidity in the long term [7,25]. Recent studies have shown that, provided certain criteria are met and clinicians are experienced and qualified, vaginal labor in breech presentation can be a safe delivery option for both mother and baby. At the same time, the percentage of caesarean section for breech presentation, according to various sources, ranges from 69 % to 100 %.

## Aim

The aim of the study is to characterise the somatic and obstetric and gynaecological anamnesis, as well as to assess the features of pregnancy, childbirth and newborns' condition in women with breech presentation.

## Materials and methods

The study analysed 2980 deliveries at the Municipal Non-Commercial Enterprise "Zaporizhzhia Regional Clinical Children's Hospital" of the Zaporizhzhia Regional Council. During this period, 65 women delivered in the breech presentation, and the overall frequency of breech births was 2.2 %. The obstetric, gynaecological, and somatic history of all patients was studied. Pregnancy management, delivery, initial assessment of newborns and medical care were carried out in accordance with the current Orders of the Ministry of Health of Ukraine [24,26,27].

The average age of women is 31.00 ± 0.98 years. Housewives made up 46.2 %, employees – 4.6 %, and workers – 47.7 %.

The study meets the modern requirements of moral and ethical standards regarding the ICH/GCP rules, the Helsinki Declaration (1964), the Council of Europe Conference on Human Rights and Biomedicine, as well as the current provisions of the legislative acts of Ukraine.

The variational and statistical processing of the results was carried out using the software Statistica for Windows 13 (StatSoft Inc., No. JPZ804I382130ARCN10-J).

## Results

The analysis revealed that 76.9 % of women had extragenital pathology *(Table 1)*. The vast majority of women were diagnosed with diseases of the cardiovascular and endocrine systems.

The incidence of gynaecological pathology in women of the study group was 26.2 % and in every third case (35.3 %) it was combined *(Table 2)*.

Complicated pregnancy occurred in 26 (40.0 %) women. The complications included moderate pre-eclampsia in 6 pregnant women (9.2 %), gestational hypertension (9.2 %), polyhydramnios (35.4 %), oligohydramnios (16.9 %), fetal distress during pregnancy and circulatory disorders (23.0 %), premature rupture of membranes (15.4 %), anaemia during pregnancy (10.8 %).

Among the study group, there were 37 (56.9 %) primiparous and 49 (75.4 %) multiparous women. There were 53 (81.5 %) interm deliveries and 12 (18.5 %) preterm deliveries. 60 women with breech presentation delivered by caesarean section (92.3 %), and 5 (7.7 %) women with breech presentation delivered through the natural birth canal.

Footling presentation was observed in 44 (73.3 %) cases, which were delivered by planned caesarean section (67.7 %) and 5 (7.8 %) – in an emergency procedure due to fetal distress.

Other indications included: breech presentation of the first fetus in multiple pregnancy, uterine scar after caesarean

**Table 1.** Structure and frequency of extragenital pathology in pregnant women with breech presentation

| Disease | Abs. | % |
|---|---|---|
| Varicose veins | 10 | 15.4 |
| Mitral valve prolapse | 3 | 4.6 |
| Chronic arterial hypertension | 4 | 6.1 |
| Atrial septal defect | 1 | 1.5 |
| Thrombophilia | 1 | 1.5 |
| Type I diabetes mellitus | 3 | 4.6 |
| Obesity | 5 | 7.7 |
| Chronic pyelonephritis | 6 | 9.2 |
| Pathology of the thyroid gland | 9 | 13.8 |
| Pathology of the eyes and retina | 7 | 10.8 |
| Somatoform dysfunction | 17 | 26.1 |
| Liquor hypertension syndrome | 1 | 1.5 |
| Chronic gastroduodenitis | 2 | 3.0 |
| Diseases of the spine | 8 | 12.3 |
| Bronchial asthma | 1 | 1.5 |
| Epilepsy | 1 | 1.5 |

**Table 2.** Structure and frequency of gynaecological pathology in pregnant women with breech presentation

| Disease | Abs. | % |
|---|---|---|
| Malformations of the uterus | 2 | 3.0 |
| Infertility | 3 | 4.6 |
| Pathology of the cervix | 5 | 7.7 |
| Uterine leiomyoma | 8 | 12.3 |
| Dyshormonal diseases of the mammary glands | 2 | 3.0 |
| In vitro fertilisation | 6 | 9.2 |

**Table 3.** Indications and frequency of caesarean section

| Complications | Abs. | % |
|---|---|---|
| Footling presentation | 44 | 73.3 |
| Fetal distress | 6 | 10 |
| Footling presentation of the first fetus in multiple pregnancy | 3 | 5 |
| Scar on the uterus after caesarean section | 5 | 6.7 |
| Deformation of the pelvic ring | 1 | 1.7 |
| HIV infection with a high viral load | 1 | 1.7 |
| Detachment of a normally located placenta with bleeding | 1 | 1.7 |

**Table 4.** Perinatal complications in the group of examined children

| Disease | Abs. | % |
|---|---|---|
| Congenital infection and parasitic diseases | 11 | 16.2 |
| Neonatal encephalopathy | 4 | 5.9 |
| Neonatal jaundice | 20 | 29.4 |
| Neonatal jaundice in combination with congenital infection | 6 | 8.8 |
| Neonatal jaundice in combination with anaemia and haemotransfusion | 1 | 1.5 |
| Open oval window | 6 | 8.8 |
| Toxic erythema | 3 | 4.4 |
| Ankyloglossia | 2 | 2.9 |
| Fracture of the humerus | 1 | 1.5 |
| RDS | 10 | 14.7 |
| Granuloma of the left cheek | 1 | 1.5 |
| Hirschsprung's disease | 1 | 1.5 |
| Fetal growth retardation | 2 | 2.9 |
| Atelectasis of lungs | 2 | 2.9 |
| Conjunctivitis | 2 | 2.9 |
| Prematurity | 14 | 20.6 |

section, pelvic ring deformity, HIV infection with a high viral load and detachment of a normally located placenta with bleeding. Indications for CS surgery are presented in *Table 3*.

The condition of the newborns was found to be alive in all 68 babies (3 twins) born by vaginal and abdominal delivery. There were 30 boys and 38 girls among the 68 newborns. 56 were born full-term, which was 82.4 %, and 12 (17.6 %) were born prematurely.

The Apgar score at birth at the first minute was 8.01 ± 0.40 points, at the fifth minute 8.60 ± 0.30 points.

Based on anthropometric studies, it was found that the average weight of children was 3024.6 ± 169.2 g, height 50.5 ± 1.0 cm, head circumference 33.9 ± 0.6 cm, chest circumference 32.2 ± 0.7 cm. The frequency of perinatal pathology, which is presented in *Table 4*, was 30.9 %.

The most common pathology was jaundice (39.7 %), which manifested on the 3–5th day, namely in 20 (29.4 %) and in 6 (8.8 %) newborns in combination with congenital infection and 1 (1.5 %) with anaemia and haemotransfusion among the morbidity of newborns.

All full-term infants were in a joint stay, preterm infants were in the second stage of neonatal care after the intensive care stage.

## Discussion

The study found that the frequency of breech births was 2.2 %. The vast majority of women with breech presentation were delivered by caesarean section (92.3 %), and 7.7 % of women with breech presentation delivered through natural birth canal.

Analysing the anamnesis data, it was found that 76.9 % of women with breech presentation had extragenital pathology. Most women were diagnosed with diseases of the cardiovascular and endocrine systems. The incidence of gynaecological pathology in women of the study group was 26.2 % and in every third case (35.3 %) was of a combined nature.

The analysis of the course of gestation in women with breech presentation revealed that 40 % had complications, namely hypertensive disorders during pregnancy, poly- and oligohydramnios, anaemia during pregnancy, fetal distress, premature rupture of membranes.

Characterising peculiarities of the perinatal period, it was found that the incidence of complications of its course was 30.9 %. It should be noted the presence of neonatal jaundice, congenital infections and parasitic diseases, neonatal encephalopathy, prematurity, etc. among the complications.

## Conclusions

1. When analysing the anamnesis of women with breech presentation, the vast majority of extragenital pathology (76.9 %) was cardiovascular and endocrine diseases. An analysis of the course of gestation in women with breech presentation revealed that 40 % had such pregnancy complications as hypertensive disorders, pre- and post-eclampsia, anaemia, fetal distress, and premature rupture of membranes.

2. Complications of the perinatal period accounted for 30.9 % (neonatal jaundice, congenital infections and parasitic diseases, neonatal encephalopathy, prematurity, etc.).

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