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ALGORITHM FOR THE STUDY OF CHILDBIRTH WITH PRENATAL RUPTURE OF AMNIOTIC FLUID, AGAINST THE BACKGROUND OF LARYNGOTRACHEITIS

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Abstract. Prenatal outflow of amniotic fluid combination with infectious diseases is a serious problem of modern obstetrics against the background of laryngotracheitis. The article presents modern views on the etiology and pathogenesis of premature and antenatal rupture of amniotic fluid. The pathological, genetic and microbiological aspects of this pathology are considered. Further solutions to the problems associated with premature and antenatal rupture of amniotic fluid are outlined. The causes of prenatal outflow of amniotic fluid, despite numerous studies, are not completely established, although the leading factor in this complication is considered to be infection.

Keywords: full-term pregnancy, induction of labor, prenatal outflow of amniotic fluid.

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АЛГОРИТМ ВЕДЕНИЯ РОДОВ ПРИ ДОРОДОВОМ ИЗЛИТИИ ОКОЛОПЛОДНЫХ ВОД, НА ФОНЕ ЛАРИНГОТРАХЕИТА

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Аннотация. Дородовое и преждевременное излитие околоплодных вод, в сочетании с инфекционными заболеваниями, особенно ларинготрахеита, является серьезной проблемой современного акушерства. В статье представлены современные взгляды на этиологию и патогенез преждевременного дородового излития околоплодных вод. Рассмотрены патоморфологические, генетические и микробиологические аспекты данной патологии. Намечены дальнейшие пути решения проблем, связанных с преждевременными дородовым излитием околоплодных вод. Причины дородового и преждевременного излития околоплодных вод, несмотря на многочисленные исследования, окончательно не установлены, хотя ведущим фактором данного осложнения считают инфицирование.

Ключевые слова: доношенный срок, индукция родов, дородовое излитие околоплодных вод, преждевременное излитие околоплодных вод.

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INTRODUCTION

One of the most common pregnancy complications is premature and prenatal discharge of amniotic fluid. There is no single point of view regarding the cause of premature rupture of the membranes. In the literature, the role and nature of changes in the structure of the membranes during prenatal and premature discharge of amniotic fluid are still being discussed. There is an assumption that

the clinical options for premature discharge of water, as well as the features of the histological structure of the membranes, may determine differences in the degree of infection of the mother and child, against the background of laryngotracheitis.

The study of the histological structure of the membranes showed that they are a metabolically active tissue and consist of amniotic epithelium, basement membrane, connective tissue, chorion

and decidual membrane. Connective tissue is built from collagen types 1 and 3, which provide strength to the membranes. The basement membrane is located under the epithelium in the form of a narrow eosinophilic cell-free mass; the compact layer is represented by a homogeneous mass devoid of cells (indicating the strength of the amniotic membrane). The fibroblast layer is located in a dense network of collagen and reticular fibers and intercellular substance. The spongy layer of the amnion is connected through the connective tissue fibers and intercellular substance with a smooth chorion. Four layers are distinguished in the smooth chorion: cellular; reticular, containing fibroblasts, and a pseudobasal membrane formed by a trophoblast layer. The rupture of the membranes before the onset of labor is called the premature discharge of amniotic fluid (PIOV). Births complicated by premature discharge of amniotic fluid during full-term pregnancy are 15.1–19.6% and 5–35% during preterm delivery (up to 37 weeks of gestation) and have no tendency to decrease. Leading obstetrician-gynecologists note that this pathology contributes to the growth of complications in childbirth and in the postpartum period on the part of the mother, fetus and newborn. It should also be noted that PIOV tends to re-develop in subsequent births with a frequency of up to 20–32%. Factors leading to PIOV remain under discussion until now. Despite the constant attention of scientists to the PIOV problem, the etiology of this obstetric pathology remains not fully understood, there are no clear ideas about the possible mechanisms of rupture of the membranes. Ladfors L., Chernukha E. A., Savelyeva G.M., Arias F. consider that PIOV is a polyetiological pathology.

Prenatal amniotic fluid effusion (DIOE) is a serious problem of modern obstetrics. Amniotic fluid, or amniotic fluid, being a biologically active environment surrounding the fetus throughout pregnancy, perform a variety of functions, ensuring the normal functioning of the mother-placenta-fetus system, against the background of laryngotracheitis. According to, labor against the background of prenatal rupture of the membranes is often accompanied by anomalies of labor, hypotonic and atonic bleeding, and high rates of trauma to the soft tissues of the birth canal.

Despite numerous studies, the causes of prenatal amniotic fluid outflow have not been conclusively

established, although infection is considered the leading factor in this complication. Daneshmand et al., (2012) concluded that morpho-functional, physiological and biochemical changes in the genital tract during pregnancy lead to the fact that the vaginal microflora becomes more uniform, with a pronounced dominance of lactobacilli, which reduces the likelihood of contamination of the fetus conditionally pathogens during its passage through the birth canal. But childbirth leads to significant changes in the qualitative and quantitative composition of the vaginal microflora. Significantly increase the number of non-spore forming gram-negative strict anaerobes (mainly bacteroids), *Escherichia*, and levels of lactobacilli and bifidobacteria decrease. Violations of normal vaginal microflora contribute to the development of such an infectious complication as endometritis. One of the mechanisms for maintaining normal vaginal microflora is associated with the formation of lactobacilli during their metabolism of lactic acid and other organic acids that maintain a low pH of the vaginal environment. Acidification of various media during the growth of lactobacilli inhibits the proliferation of conditionally pathogenic microorganisms such as candida, peptostreptococci, bacteroids, *Gardnerella* and other bacteria secreted from the vagina of women with dysbiotic disorders. Gram-negative obligate-anaerobic bacteria, some of their species, have pathogenic properties: they contain lipopolysaccharide in the cell wall, which is an inducer of IL-8, the main cytokine that triggers the inflammatory process. They are capable of producing succinic acid, which inhibits the migration of polymorphonuclear neutrophils and their phagocytic ability. Therefore, this increases the possibility of infection of the fetus and mother.

Prenatal outflow of amniotic fluid and prolongation of the anhydrous interval often leads to complications of the birth act (fast and rapid delivery, weakness and discoordination of the contractile activity of the uterus), which aggravates the condition of the fetus and in some cases requires surgical delivery. The frequency of prenatal rupture of the membranes varies widely: from 5 to 19.8% of cases of full-term pregnancy. Delivery in this case does not always end favorably for the fetus and mother. Childbirth and the postpartum period can have: the risk of purulent-septic complications in

the mother, abnormalities of labor and intrauterine infection of the fetus. In addition, labor may be ineffective, which leads to an increase in the frequency of surgical interventions.

THE PURPOSE

Studying the aspects of labor management in prenatal amniotic fluid outflows, at the same time studying the role of infection, against the background of laryngotracheitis, to reduce obstetric and perinatal complications, and developing rational delivery management tactics in prenatal amniotic fluid discharge.

MATERIAL AND METHODS OF STUDY

To solve the tasks, a comprehensive examination of 72 pregnant women was carried out, the birth of which was complicated by DIA in the periods of 37-40 weeks of gestation, received by the Bukhara regional perinatal center for the period of 2017. Using the anamnestic, clinical, laboratory and instrumental data, we studied the course of pregnancy, childbirth, the postpartum period, the condition of the fetus and the newborn. The readiness of the birth canal was assessed using the Bishop scale. According to the National Standard for the Management of Patients with DIA, after 18 hours of anhydrous interval, antibacterial therapy was carried out to prevent purulent-septic complications in puerperas. The birth canal in the childbirth DIOV examined after 24 hours in the absence of labor in order to resolve the issue of the advisability of induction of labor. The nature of labor was controlled on the basis of partograms. Conducted: monitoring hemodynamic parameters, maintaining an observation sheet, measuring to-body every 4 hours, laboratory monitoring of leukocytes 1 time per day, general urine analysis, analysis of vaginal discharge. Ultrasound of the uterus and the fetus, cervicometry, monitoring of the rhythm and heart rate of the fetus and the general condition of the woman in labor were performed. Given the high sensitivity to ampicillin of the bacteria of the vagina and cervix, this antibacterial drug was used according to the protocol. The condition of the fetus was evaluated according to ultrasound and cardiotocography (CTG), and the condition of the newborn at birth, according to the Apgar scale. Fetal monitoring in childbirth was performed using

a Corometrics 170 apparatus.

RESULTS OF STUDY AND DISCUSSION

The average age of women observed was 26.5 years. In all women, pregnancy proceeded against the background of extragenital diseases, and in most cases a combination of several of them. Anemia of mild to moderate severity (72.2%), thyroid disease (33.3%) and varicose veins (25%) predominated. Every third woman (32%) suffered an infectious disease during this pregnancy mainly in the form of ARI, exacerbation of chronic sinusitis, cystitis, pyelonephritis. In 16.7% of pregnant women, ARI episodes were repeated many times during pregnancy. Among the transferred gynecological diseases, colpitis of various etiologies, which accounted for 43%, are most often diagnosed. 72.2% of women had a history of inflammatory diseases of the genital tract. This was mainly manifested in the form of yeast, trichomonas and banal colpitis, endometritis and adnexitis. 19.4% of women against the background of laryngotracheitis. According to previous analyzes of vaginal smears, 43% of women had grade 3 and 4 purity of vaginal smears.

In all women with prenatal amniotic fluid, a vaginal examination was performed to assess the maturity of the cervix according to the Bishop scale. Assessment was carried out according to 5 criteria. It was revealed that 61.1% of the pregnant women examined had disclosure, length, consistency, position of the cervix and the condition of the pre-existing part of the fetus with scores of up to 5, which was assessed as "immature neck". And in 38.9% of women, the birth canal was assessed as a "mature neck".

Accordingly, the tactics of further conduct was chosen according to the OPC protocol. In pregnant women with an immature neck, the induction of labor by Glandin E 2, 3 mg, 1 tablet intravaginally after the informed consent of the pregnant woman and relatives is proposed. A discussion was held about possible complications of labor excitement. During induction, fetal heartbeats and uterine activity were monitored. The birth canal is reevaluated after 8 hours to clarify the need for continued induction. In pregnant women with a "mature" cervix, delivery was carried out with expectant tactics until regular labor was played out, or a consultation of doctors resolved the issue of oxytocin stimulation. 58.3%

of pregnant women were delivered through the natural birth canal. Newborns born to mothers with DIAs were evaluated on an Apgar scale by an average of 6 points.

Thus, studies have shown that the majority of women in labor with prenatal rupture of the membranes, cervical preparedness was estimated at 5 points, which meant "unpreparedness" of the birth canal. Of this number, 58.3% of women in labor underwent childbirth after the informed consent of the woman in labor and her relatives. 22.2% of women in labor had relative or absolute contraindications to labor stimulation and birth control. The remaining 19.4% of women in labor refused delivery, who chose Caesarean section as a further tactic of delivery. A study of the postpartum period showed that 26.4% of women experienced complications such as a lohiometer and a hematometer, manifested in the form of uterine subinvolution, substantiated by clinical data and ultrasound studies. In 18.1% of women, secondary healing of soft birth canal wounds was observed. In 2.8% of women, the postpartum period was accompanied by signs of exacerbation of chronic inflammatory diseases of the genital tract.

CONCLUSION

Findings:

1. A long anhydrous period is a factor in increasing infection, which leads to an increase in obstetric and perinatal pathology.

2. A long anhydrous period increases the incidence of newborns and puerperas in the postpartum period.

3. A long anhydrous period increases the seeding of the birth canal of the general and conditionally pathogenic flora and leads to an increase in the imbalance of the vaginal ecosystem.

These data dictate the need for the use of antibacterial drugs in women in labor with DIA. The appointment of antibiotic therapy after 18 hours of anhydrous interval prevents the development of purulent-inflammatory processes in the body of the woman in labor and the fetus, causes colonization resistance and is not a contraindication to surgical delivery by cesarean section.

CONFLICT OF INTERESTS

The authors declare the absence of obvious and potential conflicts of interest related to the publication of this article.

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AVAILABILITY OF DATA AND MATERIALS

All data generated or analysed during this study are included in this published article.

AUTHORS' CONTRIBUTIONS

All authors contributed to the design and interpretation of the study and to further drafts. All authors read and approved the final manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

All applicable international, national, and/or institutional guidelines for the care and use of animals were followed.

CONSENT FOR PUBLICATION

Not applicable.

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КОНФЛИКТ ИНТЕРЕСОВ

Авторы заявляют, что данная работа, её тема, предмет и содержание не затрагивают конкурирующих интересов.

ИСТОЧНИКИ ФИНАНСИРОВАНИЯ

Авторы заявляют об отсутствии финансирования при проведении исследования.

ДОСТУПНОСТЬ ДАННЫХ И МАТЕРИАЛОВ

Все данные, полученные или проанализированные в ходе этого исследования, включены в настоящую опубликованную статью.

ВКЛАД ОТДЕЛЬНЫХ АВТОРОВ

Все авторы внесли свой вклад в подготовку исследования и толкование его результатов, а также в подготовку последующих редакций. Все авторы прочитали и одобрили итоговый вариант рукописи.

ЭТИЧЕСКОЕ ОДОБРЕНИЕ И СОГЛАСИЕ НА УЧАСТИЕ

Были соблюдены все применимые международные, национальные и/или институциональные руководящие принципы по уходу за животными и их использованию.

СОГЛАСИЕ НА ПУБЛИКАЦИЮ

Не применимо.

ПРИМЕЧАНИЕ ИЗДАТЕЛЯ

Журнал "Евразийский журнал оториноларингологии - хирургии головы и шеи" сохраняет нейтралитет в отношении юрисдикционных претензий по опубликованным картам и указаниям институциональной принадлежности.

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