MODERN OBSTETRIC APPROACHES IN COMPLICATED LABOR CASES

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Abstract: *This article explores modern obstetric approaches to managing complicated labor. It analyzes early diagnostic techniques, current technologies, and clinical strategies aimed at improving maternal and fetal outcomes. Special attention is given to minimally invasive interventions, emergency cesarean sections, and resuscitation protocols in high-risk situations.*

Key words: *complicated labor, modern obstetrics, cesarean section, diagnosis, resuscitation*

QIYIN TUG‘RUQ HOLATLARIDA ZAMONAVIY AKUSHERLIK YONDASHUVLARI

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Annotatsiya: *Ushbu maqolada qiyin tug‘ruq holatlarida qo‘llanilayotgan zamonaviy akusherlik yondashuvlari tahlil qilinadi. Tug‘ruq jarayonidagi murakkab holatlarning erta aniqlanishi, diagnostik texnologiyalar va amaliy yondashuvlar samaradorligi muhokama qilinadi. Shuningdek, ona va bola xavfsizligini ta’minlashga qaratilgan minimal invaziv usullar, tezkor sezaryen operatsiyalari, va yuqori xavfli holatlarda reanimatsion choralar ko‘rib chiqiladi.*

Kalit so‘zlar: *qiyin tug‘ruq, zamonaviy akusherlik, sezaryen, diagnostika, reanimatsiya*

СОВРЕМЕННЫЕ АКУШЕРСКИЕ ПОДХОДЫ ПРИ ОСЛОЖНЕННЫХ РОДАХ

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Аннотация: *В данной статье рассматриваются современные акушерские подходы при осложнённых родах. Анализируются методы ранней диагностики, современные технологии и клинические стратегии, направленные на повышение безопасности матери и плода. Особое внимание уделяется минимально инвазивным вмешательствам, экстренным кесаревым сечениям и мерам реанимации при высоком риске.*

Ключевые слова: *осложнённые роды, современные акушерские методы, кесарево сечение, диагностика, реанимация*

Overview of Obstetric Complications.

Labor and delivery are physiological processes that, in most cases, proceed without incident. However, complications can arise that pose significant risks to both maternal and fetal health. These complications can be categorized into two main types: obstructed labor and dysfunctional labor. Obstructed labor occurs when the fetus is unable to pass through the birth canal due to mechanical factors, such as cephalopelvic disproportion or malpresentation. Dysfunctional labor, on the other hand, is characterized by ineffective uterine contractions that fail to result in progressive cervical dilation and fetal descent.

The World Health Organization (WHO) estimates that approximately 15% of all pregnant women will develop a potentially life-threatening complication during childbirth, underscoring the necessity for skilled care and timely interventions.

Historical Context.

Historically, the management of complicated labor was rudimentary, with limited understanding of the underlying pathophysiology. The advent of modern obstetrics in the 19th and 20th centuries brought about significant advancements, including the introduction of aseptic techniques, the development of surgical interventions such as cesarean sections, and the establishment of standardized protocols for labor management. These innovations have substantially reduced maternal and neonatal morbidity and mortality rates.

Advancements in Obstetric Care.

In recent decades, obstetric care has seen remarkable advancements, particularly in the management of complicated labor. Key developments include:

Enhanced Diagnostic Tools: The use of ultrasonography and magnetic resonance imaging (MRI) has improved the ability to assess fetal position, placental location, and uterine anomalies, facilitating better decision-making during labor.

Pharmacological Interventions: The introduction of uterotonic agents, such as oxytocin, has revolutionized the management of labor by enabling

the augmentation of uterine contractions, thereby reducing the duration of labor and the risk of cesarean delivery.

Minimally Invasive Techniques: Procedures like vacuum extraction and forceps delivery have become more refined, allowing for the safe and effective resolution of certain labor complications without resorting to cesarean section.

Patient-Centered Care: There is a growing emphasis on shared decision-making, informed consent, and the consideration of patient preferences, leading to more personalized and satisfactory birth experiences.

Importance of Skilled Care.

The management of complicated labor requires a multidisciplinary approach involving obstetricians, anesthesiologists, neonatologists, and nursing staff. Skilled care is paramount in identifying complications early, implementing appropriate interventions, and providing supportive care to the mother and neonate. The availability of well-equipped facilities and trained personnel is crucial in ensuring positive outcomes.

Global Perspectives.

While high-income countries have made significant strides in reducing maternal and neonatal mortality through advanced obstetric care, low- and middle-income countries continue to face challenges. Factors such as limited access to skilled care, inadequate infrastructure, and cultural barriers contribute to higher rates of complications and adverse outcomes in these regions. Addressing these disparities requires global efforts to improve healthcare access, education, and resources.

Objectives of the Study.

This study aims to:

1.Review the current evidence on the management of complicated labor cases.

2.Analyze the effectiveness of modern obstetric interventions in improving maternal and fetal outcomes.

3.Identify challenges and barriers to optimal care in different healthcare settings.

4.Provide recommendations for best practices in the management of complicated labor.

Structure of the Paper.

Following this introduction, the paper will delve into the pathophysiology of common labor complications, including obstructed and dysfunctional labor. It will then examine current management strategies, highlighting evidence-based practices and emerging technologies. The discussion will also address the challenges faced in various healthcare settings and propose solutions to overcome these obstacles. Finally, the paper will conclude with a summary of findings and recommendations for future research and practice.

Offering nulliparous women receiving epidural analgesia a rest period at 10 cm dilatation before pushing is based on the theory that a rest period allows the fetus to passively rotate and descend while conserving the woman's energy for pushing efforts. This practice is called delayed pushing, laboring down, or passive descent. The second stage of labor has two phases: 1) the passive descent of the fetus through the maternal pelvis and 2) the active phase of maternal pushing. Studies that suggest an increased risk of adverse maternal and neonatal outcomes with increasing second-stage duration generally do not account for the duration of these passive and active phases.

Two meta-analyses of RCTs compared maternal and neonatal outcomes in women assigned to immediate versus delayed pushing have been published. Both studies found that delaying pushing for 1–2 hours extended the duration of the second stage by a mean of approximately 1 hour and was associated with approximately 20 minutes less active maternal pushing efforts. Although both reports noted a significantly increased spontaneous delivery rate, this difference was no longer significant when the analysis was restricted to high quality RCTs (RR, 1.07; 95% CI, 0.98–1.16) 55. However, a recent large retrospective analysis found that delaying pushing by 60 minutes or more was associated with modest increases in cesarean delivery (adjusted odds ratio [AOR], 1.86; 95% CI, 1.63–2.12) and operative vaginal delivery (AOR, 1.26; 95% CI, 1.14–1.40), postpartum hemorrhage (AOR, 1.43; 95% CI, 1.05–1.95), and transfusion (AOR, 1.51; 95% CI, 1.04–2.17), but no increase in adverse neonatal outcomes. The study design does not determine causation and was not able to account for important confounders such as the indications for delayed pushing or fetal station at the onset of the second stage of labor that were addressed by the more recent randomized trial.

A recent 2018 multicenter RCT of more than 2,400 nulliparous women receiving epidural analgesia, assigned participants to begin pushing at the start of the second stage of labor or to delay pushing for 60 minutes unless the urge or health care provider recommendation to push occurred sooner. The trial was stopped before the intended recruitment was complete because of concern for excess morbidity in the delayed pushing. No differences in rates of spontaneous vaginal births were noted even after consideration of fetal station and head position. Women assigned to push at the start of the second stage had lower rates of chorioamnionitis (RR, 0.7; 95% CI, 0.6–0.9) and postpartum hemorrhage (RR, 0.6; 95% CI, 0.3–0.9), and had neonates with lower risk of acidemia (overall risk 0.8% versus 1.2%, RR, 0.7; 95% CI, 0.6–0.9) 57. Collectively, and particularly in light of recent high-quality study findings, data support pushing at the start of the second stage of labor for nulliparous women receiving neuraxial analgesia. Delayed pushing has not been shown to significantly improve the likelihood of vaginal birth and risks of delayed pushing, including infection, hemorrhage, and neonatal acidemia, should be

shared with nulliparous women receiving neuraxial analgesia who consider such an approach.

Family-Centered Cesarean Birth.

Although the delivery goal for many low-risk women is vaginal birth, delivery by cesarean is sometimes the result, whether for obstetric indications or by maternal request. Recent attention has focused on the description and implementation of techniques in the operating room to promote increased involvement of the family in the procedure itself. One 2008 study, described the "natural cesarean". Various institutional protocols have adopted some or all of the principles, which include preparation of the operating room itself with low lighting and minimal extraneous noise, positioning women to best allow access to the neonate after delivery (eg, not securing the upper extremities to arm boards, placing pulse oximetry probes on nondominant hands, or on toes rather than fingers), allowing women and their partners to view the birth (by lowering the drapes or using drapes with specially-designed viewing windows), slowed delivery of the neonate through the hysterotomy to allow autoresuscitation, delayed umbilical cord clamping, and early skin-to-skin contact 58 59. A large body of evidence to support efficacy of these techniques, whether each on its own or in combination, is lacking, though the merits of delayed umbilical cord clamping and early skin-to-skin contact have been extensively reviewed elsewhere. One randomized trial of a number of family-centered cesarean birth interventions demonstrated greater parental satisfaction in the intervention group; skin-to-skin care was achieved in 72% of women assigned to the intervention, and the intervention was associated with higher breastfeeding rates than in the traditional cesarean group 60.

In one U.S. academic medical center, the family-centered cesarean birth was introduced in 2013 and the efforts studied. Skin-to-skin care in the operating room increased from 13% to 39% of cases, with exclusive breastfeeding rates among neonates born by cesarean similarly increasing from 35% to 64%. An increase in neonatal hypothermia associated with skin-to-skin care, a theoretic concern given the ambient temperatures in operating rooms, was not noted. In a cohort study that compared women who gave birth by cesarean delivery after the introduction of family-centered cesarean delivery with historical controls, unplanned nursery admission, but not respiratory morbidity or hypothermia, increased (unplanned admission in 21% in the period of study compared with 7% of historical controls).

Absent better-quality evidence of benefit or harms of these interventions, birthing units should carefully consider adding family-centric interventions (such as lowered or clear drapes at cesarean delivery) that are otherwise not already considered routine care and that can be safely offered, given available environmental resources and staffing models. These family-centric interventions should be provided in recognition of the value of inclusion in the birthing process for many women and their families, irrespective of delivery mode.

Conclusion.

Many common obstetric practices are of limited or uncertain benefit for low-risk women in spontaneous labor. In addition, some women may seek to reduce medical interventions during labor and delivery. Satisfaction with one's birth experience also is related to personal expectations, support from caregivers, quality of the patient–caregiver relationship, and the patient's involvement in decision making 61. Therefore, obstetrician–gynecologists and other obstetric care providers should be familiar with and consider using low-interventional approaches, when appropriate, for the intrapartum management of low-risk women in spontaneous labor.

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