VIEWPOINT

Delivery Methods in Multifetal Pregnancies

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Introduction

The frequency of the multifetal pregnancies is significantly increased as a result of the assisted reproduction techniques.[1,2] With ovulation induction, twin births frequency multiplies 10 times approximately.[2] The twin pregnancies form 1% of overall pregnancies while perinatal mortality rate is about 10%.[3]

The type of the delivery method is one of the most problematic issues in multifetal pregnancies. There are numerous controversies within the multifetal pregnancies for the delivery method. Most recent and comprehensive studies are will be enumerated in following section.

Planned Cesarean

The fact that whether all twin pregnancies which are delivered by cesarean decrease the perinatal mortality is a controversial subject. There exists some particular proof that the babies delivered by cesarean weight 1000 g and below and that is advantageous for Apgar scores perinatal mortality.[4] As a result of a large scale meta-analysis on this subject, it is found that planned cesarean increases Apgar score only in fifth minute for breech presentation of the first fetus, however, there isn't any difference between planned cesarean and normal confinement in perinatal mortality and morbidity.[5] Consequently, except the excessive preterm twin cases, delivering all twin pregnancies doesn't seem significant.

In twin pregnancies, the possibility that the fetus is delivered in vertex-vertex corresponds to 62%, 38% vertex-nonvertex, and 20% non vertex-nonvertex.[5] In particular, if the first fetus is delivered in reverse presentation the delivery method is controversial. During a well-controlled study, the situations where the fetus is 1500 g and below, the breech delivey increases the neonatal mortality at 9.5 times.[6] However, the breech delivery above 1500 g. (Apgar scores and neonatal mortality) seems as safe.[7] In another multicentered study, when fetus in breech presentation is below 1500 g, Apgar score in fifth minute is reported low (p=0.008, OR 2.4, 95% CI 1.2-4.7). Within the same study, if the fetus is above 1500 g., there is no change in Apgar score for the vaginal confinement (p=0.76, OR 1.1, 95% CI 0.6-2.1) and reported that vaginal confinement could be made in these pregnants.[7]

American College of Obstetricians and Gynecologists (ACOGg) brings out that the cesarean should be preferred if twin presentation isn't vertex independent from the weight of the fetus.8 In a meta-analysis that confirms this idea, it was found that Apgar Score risk was increased at 50 % in fifth minute of abortion, (OR 0.47, 95 %, CI 0.26-0.88) and 1/3 when the first fetus is in breech presentation (OR 0.33, %95 CI 0.17-0.65).[9]

In consequence, for twin pregnancies, if the first fetus is in breech presentation and below 1500

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g. the cesarean, is safer. In these studies, when the first fetus is in breech presentation, for Apgar Score and neonatal mortality, vaginal and cesarean confinements give similar results. Besides, in well-controlled studies and meta-analysis, Apgar scores in cesarean are better in fifth minute. Therefore, in twin pregnancies the first fetus is in breech presentation, the cesarean is safer regardless of the weight.

Presentation of the Second Fetus

Another issue is related with the delivery methods that second fetus is nonvertex. According to another study, the presentation and fetal position of the second fetus don't have any difference for perinatal results except Apgar score in first minute.[10] Breech presentation of the second fetus may not be a cesarean indication itself. However, in the cases left to the normal parturitions, there is a 10% "urgent cesarean for second fetus" rate.[11] The breech presentation of the second fetus multiplies 4 times the urgent cesarean rate.

There are various publications that show that the second fetus has more risks, because of the delivery complications.[12] In twins, the emergency cesarean is found associated with uterine rupture and infectious morbidity.[13] In a recent and comprehensive study, it is showed that the vertex-breech twins delivered by cesarean method have a neonatal mortality rate comparable with vertex-vertex twins delivered by vaginal presentation.[14] Yet, in the same study, interrelated with the previous findings, highest neonatal mortality rate is in vertex-breech presentations and it was observed in vaginal-emergency cesarean group (2.7/1000 gestation). In another study supporting the same findings, it is observed that neonatal mortality and morbidity in which were delivered by vaginal method or the first fetus vaginal and second by cesarean, are found higher than that both fetus are delivered by cesarean.[15] In another study, it is compared delivering second fetus by cesarean in nonvertex position and both fetus by vaginal method. Apgar scores were higher in cesarean group and neonatal mortality was lower. Within the extent of the study, vaginal delivery is stated as dangerous for those type of twin pregnancies.[16] However, in a study by Winn et al, it is reported that there is no difference in neonatal mortality and birth trauma while second fetus is in nonvertex, to implement cesarean to both fetus, vaginal delivery for the first fetus and cesarean to the second fetus and vaginal method for both fetus.[5] Within this study, vaginal delivery is in particular specified as safe for 1500 g and above.

In consequence, for twin pregnancies that the second fetus is nonvertex, left to the normal delivery, the need for emergency cesarean is and important issue. Even though no significant risk was assessed in retroactive studies, the "vertex–breech" presentations should be planned by taking into account the other factors as well as the patient. For these controversial situations, the weight of the fetus and the unfitness between the weights should be also considered.

In consequence, for twin pregnancies, if the first fetus is in breech presentation and below 1500 g. the cesarean, is safer. In these studies, when the first fetus is in breech presentation, for Apgar Score and neonatal mortality, vaginal and cesarean confinements give similar results. Besides, in well-controlled studies and meta-analysis, Apgar scores in cesarean are better in fifth minute. Therefore, in twin pregnancies the first fetus is in breech presentation, the cesarean is safer regardless of the weight.

Weight Difference between the Fetuses

Another controversial issue for the twin pregnancies is that whether the birth weight differences matters in delivery method. In a recent study, it is found that the vaginal birth increases the neonatal mortality when the difference in fetus weights exceeds 40%.[17] It was stated that the increase in risk started at 20% and becomes significant at 40%. Generally, the risk of the difference between the fetus weights brings out the fetal mortality and smaller fetus has more perinatal mortality risk. For perinatal results, 30% and more is assessed as clinically significant.[18] In another study the twins below 1500 g limit were observed and for both cesarean and vaginal deliveries, the fetus with lower weight bears more risk in respiratory distress syndrome, and chronic respiratory system syndrome.[19] Cesarean method seems more logic if the difference between birth weights of the twins is more than 20-30%. But there isn't any proof supporting this approach.

Delivery in Vertex-Vertex Presentations

Another issue is whether normal confinement in vertex-vertex presentations is always reliable. Vertex-vertex presentations may leave for normal delivery method. However, this isn't always safest solution. In another study that examines the representation and delivery method in term twins, in case where emergency cesarean is needed for second fetus in vertex-vertex representation (vaginal – cesarean delivery) highest neonatal mortality (3.8/1000 live birth) has been observed.[14] Further problems that the fetus cannot be engaged, delaying the birth may become a problem in vertex-vertex presentations. In vertex-vertex presentations in which no weight difference could be detected, there is a need for studies related to evaluate the necessity for cesarean in pre natal period.

Triplet Pregnancies

Except the twin fetal pregnancies, triplet and other multiple pregnancies are subject to a discussion on delivery method. In preliminary study, in case where first triplet is vertex, the fetus is delivered by vaginal method, and one-third of all triplets in the study (n= 23) are delivered (8 triplets) were delivered by vaginal parturition. There is no difference in neonatal morbidity and mortality between vaginal and cesarean.[20] In contrary to this, another triplet pregnancy study showed that delivering overall three fetus by cesarean diminishes the neonatal mortality.1 For triplet pregnancies, cesarean will continue its validity as suggested delivery method until the reliability of normal birth proves itself in larger scale studies.

In multiple pregnancies, while the number of fetus multiplies, the mortality and morbidity for both mother and the fetus. In a comprehensive study, 44605 pregnancy cases were assessed and 1.3% twin, 0,1% triplet frequency was estimated. The most frequent perinatal complication, early parturition occurred in triplets 2 times comparing to the twins. Maternal mortality is estimated 35.8/100.000 for twins and 99/100.000 for triplets. Perinatal mortality is augmenting 2 times in triplets (115/1000 to 223/1000).[21] In multiple pregnancies, perinatal and neonatal mortality are observed for the fetus that have 1500 and lower fetal weight and earlier than 27 months.[22] As fetal and maternal prognosis worsen and increase premature risk while the number of the fetus multiplies, studies aiming to reduce the iatrogenic multiple pregnancies, gain importance.

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