Retrospective Analysis of Multiple Pregnancies

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Abstract

Objective: To evalute the multiple pregnancies who had delivered in our clinics retrospectively.

Methods: Two hundred eighty three multiple pregnancies delivered were evaluated retrospectively between January 1999 and December 2004 at Obstetrics Department. The demographic characteristics, maternal age, parity, chorionicity, gestational weeks at delivery, presentation modes of fetuses, delivery modes, neonatal weight, fetal anomaly rate, cesarean rates and indications, perinatal morbidity and mortality rates were evaluated .Statatistical analysis were evaluated with SPSS 10.0 S program.

Results: 7674 deliveries occured in our clinic. 261 (3.4%) twin pregnancy and, 22 (0.29%) triplet pregnancy were found. Dichorionicity was 69.3% and monochorionicity was 30.7% in twin pregnancies. Cesarean section rate was 62.1% in twin and 68.2% in triplet pregnancies. Preterm labour was 23% and preeclampsia was 15.7% in twin pregnancies. Preterm labour was 30%, preeclampsia was 8% in triplet pregnancies. Fetal anomaly rate was 3.6%.

Conclusion: The prevalence of multiple pregnancies has increased because of ovulation induction and assisted reproductive technologies. Professionals should prevent multiple pregnancies due to increased maternal and fetal mortality and morbidity.

Keywords: Multiple pregnancy, chorionicity.

Çoğul gebeliklerin retrospektif analizi

Amaç: Kliniğimizde doğumu gerçekleşen çoğul gebelik olgularının retrospektif analizini yapmaktır.

Yöntem: Kliniğimizde Ocak 1999 ile Aralık 2004 yılları arasında doğumu gerçekleşen toplam 283 çoğul gebelik olgusu retrospektif olarak incelendi. Olguların yaşı, paritesi ve koryonisite durumları, doğum anındaki gebelik haftaları, fetusların prezantasyon şekilleri, doğum şekilleri, doğum ağırlıkları belirlendi. Olgularda konjenital anomali oranı, sezaryen endikasyonları, perinatal morbidite ve mortalite oranları incelendi. İstatistiksel değerlendirme SSPS 10.0 S paket programı ile yapıldı.

Bulgular: Kliniğimizde 7674 doğum gerçekleşmiştir. Tüm doğumlar içerisinden 261 (%3.4) ikiz ve 22 (%0.29) üçüz çoğul gebelik olgusu saptandı. Çoğul gebeliklerin 261'ini (%92.2) ikiz gebeliklerin oluşturduğu saptandı. İkiz olgularının%69.3'ü dikoryonik,%30.7'sinin monokoryonik olduğu saptandı. İkiz gebeliklerin%62.1'si ve üçüz gebeliklerin%68.2'si sezaryen ile doğum yapmıştır. İkiz gebeliklerin%23'ünde erken doğum eylemi,%15.7'sinde preeklampsi üçüz gebeliklerde ise%30'unda erken doğum eylemi,%8'inde preeklampsi saptandı. Konjenital anomali oranı%3.6 olarak saptandı.

Sonuç: Son yıllarda yardımcı üreme tekniklerinin yaygınlaşması ile birlikte artan çoğul gebelikler beraberinde maternal ve fetal morbidite ve mortaliteye neden olmaktadır. Bu nedenle yardımcı üreme teknikleri ile uğraşan profesyoneller çoğul gebelikleri engellemelidirler.

Anahtar Sözcükler: Çoğul gebelik, koryonisite.

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Introduction

There has been a significant increase in the incidence of multifetal pregnancies with widespread usage of ovulation induction assisted reproductive techniques and rate of multifetal pregnancies reached to 3% in recent years.[1] Followings and management of these pregnancies become important because multifetal pregnancies are related to increased maternal and perinatal morbidity and mortality.[2] Most frequent causes of high perinatal morbidity and mortality in multifetal pregnancies are difficult labour caused by presentation abnormalities, respiratory distress syndrome caused by low birth weight and prematurity.[3] Widespread usage of electronic fetal monitorization, obstetrical ultrasonography and improvement of neonatal units ensured progresses in reducing of neonatal morbidity.[4,5]

Aim of this study is to make retrospective analysis of multifetal pregnancies delivered in our clinic.

Methods

A sum of 283 (3.69%) multifetal pregnancy cases including 261 twin (3.4%) and 22 triple (0.29%) births among a total of 7674 births occurred in our clinic from January 1999 to December 2004 were investigated retrospectively. Ages, parity and chorionicity, pregnancy weeks at the moment of delivery, presentation form of fetus, delivery moods, birth weights, congenital anomaly rate, indication of cesarean section, perinatal morbidity and mortality rates of the cases were examined. It is stated that chorionicity of cases is determined by examination with prepartum ultrasonography and examination of placenta macroscopically after birth. Being more than 15% weight difference among fetuses is described as discordance. SSPS 10.0 S package program is used for statistical evaluation.

Results

261 (92.2%) of multifetal pregnancies were twin. It is found average ages of cases as 28.54 (16-47), gravidas 3.30, parities 2.00. 187 (66.07%) of multifetal pregnancy cases were multipares. It is determined that 10.25% of multifetal pregnancy cases were constituted of pregnants conceived by ovulation induction because of infertility or in vitro fertilization and embryo transfer (IVF-ET). Ratios of twin and triple pregnancies are found as 261 (3.4%) and 22 (0.29%) consecutively among total deliveries in our clinic.

Average pregnancy weeks at the moment of delivery is determined as 33±0.2 weeks in twin and 32±0.7 weeks in triple pregnancies. It is determined that in 85.9% of twin cases birth occurred before 37. week and most frequently between 33-36 weeks and in 90.90% of triple pregnancies gave birth before 37 week and most frequently between 33-36 weeks.

It is determined that 69.3% of twin cases were dichorionic, 30.7% were mono chorionic. It is determined that presentation of twin pregnancies at birth was 38% vertex-vertex, 26.8% vertex-nonvertex, 14.9% nonvertex-vertex, 20.3% nonvertex-nonvertex (Table 1).

Table 1. Presentation forms of twin pregnancies at delivery.

Presentation	n	%
Vertex-vertex	99	38.0
Vertex-nonvertex	70	26.8
Nonvertex-vertex	39	14.9
Nonvertex-nonvertex	53	20.3
Total	**261**	**100.0**

According to the mood of delivery 62.1% of twin pregnancies were given birth by cesarean section and 37.9% by vaginally. The most frequent cesarean section indication of twin pregnancies were buttock presentation of before coming fetus (27.8%) and transvers presentation (16%). It is determined that 68.2% of triple pregnancies were given birth by cesarean section and 31.8% by vaginally. It is determined that 45.5% of triple pregnancies were the pregnancies resulted from infertility treatment. The most frequent cesarean section indication of triple pregnancies was also elective (Table 2).

It is determined that average weight of first newborn was 2065±02 g and second newborn was 1972±64 g in twin pregnancies; 1660±45 g, 1648±64 g, 1643±63 g consecutively in triple pregnancies. Furthermore, 63.3% premature birth and 10.6% stillbirth is determined in multifetal pregnancies (Table 3).

Table 2. Cesarean section indications in twin pregnancies.

Indications	n	%
Breech presentation	45	27.8
Transvers presentation	26	16.0
Elective	24	14.8
Repeated cesarean sectio	22	13.6
Fetal distress	15	9.2
Entanglement of umbilical cord	7	4.3
Arrest of labour	6	3.7
Foodling breech presentation	5	3.1
Placenta previa	3	1.9
Arm prolapse	3	1.9
Advanced maternal age	3	1.9
Face presentation	1	0.6
Detachment	1	0.6
Conjoined twin	1	0.6

Table 3. Fetal problems determined in multifetal pregnancies.

Fetal problems	n	%
Premature birth	119	63.3
Stillbirth	20	10.6
Intrauterine dead fetus	6	3.2
Twin-to-twin transfusion syndrome	6	3.2
Intrauterine development retardness	17	9.1
Congenital anomaly	20	10.6

It is determined preterm delivery in 23%, premature membrane rupture in 8.8%, placenta insertion anomaly in 1.9%, preeclampsia in 15.7%, HELLP syndrome in 1.9%, intrauterine fetal death in 2.3%, polyhydramniosis in 3.4%, gestational diabetes in 0.8% and heart disease in 0.8% of the twin pregnancies. It is determined preterm delivery in 30%, preeclampsia in 8%, eclampsia in 1%, early membrane rupture in 11% of triple pregnancies (Table 4).

Congenital anomaly rate is determined as 3.6% (n=21). Among these congenital anomalies; 28.6% hydrops (n=6), 23.8% neural system anomaly (n=5), 23.8% genitourinary tract anomaly (n=5), 14.2% extremity anomaly (n=3), 4.8% teratoma (n=1), 4.8% conjoined twins (n=1) were determined.

It is determined that discordance ratio was 25% in twin pregnancies and 54% in triple pregnancies. Perinatal mortality rate is determined as 23% (9.2% in twins, 24% in triples) in multifetal pregnancies and 12.6% of them were intrauterine mort fetal.

Table 4. Obstetrical problems in multifetal pregnancies.

Obstetrical problems	n	%
Preterm birth	69	41.1
Premature membrane rupture	24	14.3
Polyhydramniosis	10	6.0
Preeclampsia	41	24.4
Eclampsia	5	2.9
HELLP syndrome	5	2.9
Placental detachment	3	1.8
Gestational diabetes	3	1.8
Heart disease	2	1.2
Placenta previa	4	2.4
Postpartum atonic bleeding	1	0.6
Postpartum pulmonary embolism	1	0.6

Discussion

Multifetal pregnancy rates showed an increase parallel to the widespread usage of assisted reproductive techniques in recent years. In western communities multifetal pregnancies constitutes 3% of pregnancies.[6] It is understood that ratios are approaching these values also in our country.[7-8] It is found that twin rates reached to 25-30%, triple rates to 5% and pregnancies with more fetus are to 0.5-1%.[9] In our study, it is determined twin pregnancy rate was 3.4%, triple pregnancy was 0.24% and 10.25% of multifetal pregnancies were treatment pregnancies.

As fetus number increases pregnancy period gets shorter. Approximately half of twins deliveries at 36th week or earlier. Average birth week of triple pregnancies was 33.5 week and 90% of them delivers before 37th week, 24% before 32nd and 8% before 28th week.[10] In our study, it is determined 85.9% of twin cases are given birth before 37th pregnancy week. It is determined also 90.9% of triple cases are given birth before 37th and 45.5% before 32nd week. Most of our cases did not take antenatal care and admitted to hospital in late stage of birth. Because of these reasons and also with presence of cases requiring delivery induction like preeclampsia, eclampsia and HELLP syndrome in high proportion, it caused our ratios got higher.

Vertex-vertex presentation is most seen in twins.[11] Usual approach in vertex-vertex presentation cases is birth via normal vaginal tract and cesarean section indications are like in single pregnancies.[12] In our cases vertex-vertex presentation

rate is determined as 58.6% and also it is determined 50.5% of them is given birth via normal vaginal tract and 49.5% of them with cesarean section. It is specified that birth with cesarean section is safer in nonvertex-vertex, nonvertex-nonvertex presentation cases. It is known that fetal mortality is high in locked twin cases.[13] It is determined that before coming fetus was nonvertex in 35.2% of our cases and 93.5% of these cases were given birth by cesarean section. It is preferred birth has to be performed with cesarean section in nonvertex presentation of before coming fetus in multifetal pregnancies in our clinic. Cesarean section rate is reported as 16-44% in twins.14 In our study, cesarean section ratio of twin cases was 62.1% and it is higher than literature. It grows out of because of our high ratio of nonvertex presentation of before coming fetus, our high ratio of complicated pregnants and preference of elective cesarean section in treatment pregnancies.

In the study of Buyru et al4, they found perinatal mortality rate in newborn given birth by cesarean section lower than given birth via vaginal tract and emphasized that presentation form does not effect mortality directly. In our study, it is determined that in 8 cases (5%) of births by cesarean section and in 17 cases (17.2%), babies with 0-0 Apgar score were given birth. It is determined 60.2% of 118 cases that mortality seen in one week early perinatal period is given birth by vaginal tract and 39.8% by cesarean section. We assessed the higher fetal mortality rate in group given birth by vaginal tract to intrauterine dead fetuses, fetuses with congenital anomalies and immature fetuses are given birth mostly by vaginal tract.

Perinatal mortality is found 4 times higher in twin pregnancies compared to single pregnancies[15] but, there are also studies suggesting there is no difference. Kilpatrick and his friends found the perinatal mortality rates in single pregnancies as 0.25% and in twin pregnancies as 0.11% which has a gestation age above 30 weeks.[16] In our study, perinatal mortality in multifetal pregnancies is determined as 0.16%. Average birth weights of babies constituting perinatal mortality was 1085 grams in twins, 1031 grams in triples; average pregnancy weeks was 28 weeks in twins, 27 weeks in triples. There is statistical significancy between perinatal mortality with pregnancy week and low birth weight ($p<0.001$).

Major malformations occur in 2% and minor malformations occur in 4% of twins.[17] In our study, congenital anomaly ratio is determined as 3.6% and it is compatible with the literature. Furthermore, it is not different from our clinic's general congenital anomaly ratio of 3.06%.[18] Incidence of transfusion syndrome from twin to twin is not definite but, one fourth of monochorionic twins shows some characteristics of that syndrome.[19] Twin to twin transfusion syndrome is determined in six of our cases and perinatal mortality is determined in these cases except two fetuses. Tan and his friends[20] reported the conjoined twin ratio as 1/60.000. In our study, conjoined twin is determined in one of our case (1/7674) and both of fetuses that delivered by cesarean section became ex at postoperative 36th hour.

Discordance among birth weights in triple pregnancies is three times higher than in twin pregnancies and is a criteria of worst prognose.[21] In our study, discordance among birth weights of fetuses is determined 25% in twins and 54% in triples.

In multifetal pregnancies; it is seen an increase in obstetric complications such as premature birth, early membrane rupture, pregnancy anemia, pregnancy toxicosis, congenital anomalies, abortus, antepartum, intrapartum and postpartum bleedings.[22] The most frequently seen obstetric problems in our cases are determined as preterm birth 41.1%, early membrane rupture 14.3%, pregnancy toxicosis (preeclampsia, eclampsia, HELLP) 30.2% and other complications 14.4%. Coonrad et al[23] reported that preeclampsia is seen four times higher in twin pregnancies compared to single pregnancies. Mastrobatista et al[24] reported that severe preeclampsia is seen as 23% in triple pregnancies and 5% in twin pregnancies. In our study, preeclampsia ratio is determined 15.7% in twin pregnancies as it is determined 9.09% in triple pregnancies.

Increasing in the multifetal pregnancies, as a result of becoming of assisted reproductive techniques widespread, is causing preterm birth, prematurity, early membrane rupture, low birth weight, intrauterine development retardation and

fetal anomalies and also increase in number of individuals with anomalies in further life. Considerable financial sources are spent for newborn care as a consequent of multifetal pregnancies. We consider that preferring single pregnancies instead of multifetal pregnancies will be an appropriate choice to reduce the maternal and fetal morbidity and mortality caused by multifetal pregnancies and also to prevent the financial losses.

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