

Triplet Gestation: Clinical Outcome of 14 Cases

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Abstract

Background/Objective: To determine maternal complications and fetal outcome of triplet gestations.

Method: Retrospective study of pregnant women with triplet gestation managed in 10 years.

Results: Fourteen women were managed with triplet gestation, of these, (71.4%) were booked for antenatal care and four (28.6%) were unbooked. The mean age of the women was 31.3 years. The age range was between twenty seven years and thirty nine years. The mean gestational age at diagnosis for the booked women was 18.6 weeks. Of the fourteen patients, ten (71.4%) had spontaneous conception, three (21.4%) followed ovulation induction and one (7.2%) resulted from invitro fertilization and embryo transfer. Two (14.3%) patients had cervical cerclage based on their past obstetric history and assessment of the cervix. Six (42.9%) patients were hospitalized and treated for preeclampsia 3 patients, spontaneous abortion 1 patient and cervical incompetence 2 patients. Eleven (78.6%) patients had preterm birth. The mean gestational age at delivery was 33.4 weeks. Of the thirteen deliveries, nine (69.2%) had caesarean section and four (30.8%) delivered per vaginam. A total of thirty nine babies were delivered, thirty four (87.2%) babies survived and five (12.8%) died. Perinatal mortality was 11.9% and the “take home” baby rate was 81%.

Conclusion: Antenatal care with initiation of specialized prenatal care and planned delivery in triplet gestation improves fetal outcome.

Key words: Triplet gestation, outcome, management

Résumé

Introduction/Objectif: Décider des complications maternelles et résultat foetal du gestation triplée.

Méthodes: Etude rétrospective de grossesses femmes avec gestation triplée traitées la 10 ans.

Résultats: Quatorze femmes traitées avec gestation triplée, parmi lesquelles 10, soit 71,4% ont été inscrites pour des soins anténataux et quatre soit 28,6% ne s'étaient pas inscrites. L'âge moyen des femmes étaient 31,3 ans. Tranche d'âge était entre vingt sept et trente neuf ans. Moyen d'âge gestationnaire pendant diagnostic pour des femmes inscrites était 18,6 semaines. Entre le quatorze patientes, dix (71,4%) avaient eu la conception spontanée, trois soit 21,4% ont suivi déclenchement ovulaire et une soit 7,2% est attribuable à la fertilisation invitro et transfert d'embryon. Deux soit 14,3% patients avaient eu un cerclage cervical à cause de leur dossier obstétrique du passé et évaluation de l'utérus. Six (42,9%) patients avaient eu accouchement préterme. Age moyen gestational pendant accouchement était 33,4 semaines. Parmi les treize accouchements, neuf soit 69,2% avaient eu la césarienne et quatre soit 30,48% ont accouché par vaginam. Un total de trente neuf bébés ont été accouchés, trente quatre soit 87,2% bébés survivent et cinq soit 12,8% morts. Mortalité périnatale était 11,9% et le taux de « take home » bébé était 81%.

Conclusion : Des soins anténataux avec initiation des soins prénataux spécialisés et accouchement bien organisé dans la gestation triplée améliore le résultat fetal.

Mot-clés: Gestation triplée, résultat, prise en charge

Introduction

Triplet gestation is the commonest of the higher order multiple pregnancies,¹ and is associated with increased frequency of foeto-maternal complication.² The prevalence rate has been on the increase because

of ovulation induction and other methods of assisted reproduction but the average gestational age at delivery has remained between 32 and 34 weeks.³⁻⁵ Prematurity accounts for the high perinatal morbidity and mortality associated with triplet's gestations, despite the significant improvements in perinatal

care and neonatal intensive care over the past decades. In order to improve the morbidity and mortality, multifoetal pregnancy reduction was introduced into obstetric practice with the aim of prolonging pregnancy by decreasing the number of fetuses in higher order multiple pregnancies. However its place in triplet gestation has been controversial in relation to outcome with conservative management.¹

Materials and Methods

We compiled data from medical records of fourteen women with triplet gestation that delivered between January 1996 and July 2005, to evaluate maternal complications and neonatal outcome. The term booked patients applies to those patients whose pregnancy were registered and managed in our hospital. At diagnosis of triplet gestation, patients were educated, emphasizing the peculiarity of their pregnancy and importance of bed rest.

The patients were also placed on prophylactic oral tocolysis with beta sympathomimetic agents, preferably salbutamol from twenty weeks of gestation. They were seen at 2 – 3 weekly intervals and ultrasound scan was done at four to eight weekly intervals to monitor fetal growth and assess biophysical profile. Cervical incompetence, anaemia, glucose intolerance and pre-eclampsia were looked out for during the pregnancy. Serial haemoglobin level was done and anaemia was defined as haemoglobin level <10g/dl.

Inpatient management was offered to those who developed medical and obstetric complications. Parenteral dexamethasone, 8mg twice daily for three days was given to patients who were likely to have preterm delivery before thirty four weeks gestation. Perinatologist was required for all deliveries.

Abortion in this study was defined as pregnancy not up to twenty eight completed weeks of gestation. Preterm delivery was defined as delivery before thirty seven completed weeks of gestation. Birth asphyxia was defined as Apgar score <7 at 5 minutes.

Results

Fourteen triplet gestations were delivered between June 1996 and July 2005. Ten booked for antenatal care in our hospital and four were unbooked. In this study, ten triplet gestations were spontaneous, one followed invitro fertilization with donor sperms and embryo transfer and three resulted from the use of clomiphene citrate for induction of ovulation. Two of the patients had past histories of multiple pregnancies and one of the patients was a twin herself. Mean age of the patients was 31.3 years with a range of twenty seven to thirty nine years. Of the fourteen patients, one was para 0, one was para 1, three were para 2, two were para 3 and six were para 4 and above.

In the subgroup of patients that were booked, the mean gestational age at which triplet's gestation was diagnosed was 18.6 weeks. Two patients had cervical cerclage at eighteen and twenty three weeks based on

their past obstetric history and assessment of the cervix. One of the patients that later had spontaneous abortion at twenty three weeks had parenteral tocolysis. There was no case of gestational diabetes mellitus, but three patients had pre-eclampsia. Anaemia in pregnancy was detected at one time or the other in eight patients. Hospitalization due to medical or obstetric indication(s) in the absence of inevitable delivery occurred in six patients due to pre-eclampsia in three patients, spontaneous abortion in one patient and cervical incompetence in two patients. Eight patients had preterm premature rupture of membranes and eleven patients had preterm delivery (Table 1).

The mean gestational age at delivery amongst the booked patients was 33.4 weeks, with a range of 31.2 weeks to 37.4 weeks. Perinatologist was present at six of the deliveries. In the cohort of booked patients, of the ten patients, six had planned abdominal delivery, three had planned vaginal delivery and one had abortion at twenty three weeks. In the cohort of unbooked patients, (four patients) they all presented in labour, three with intrapartum complications in labour that necessitated emergency caesarean section. The three complications were retained second and third triplets, cord prolapse and shoulder presentation with prolapsed upper limb. The remaining one unbooked patients came in second stage of labour, and she had successful vaginal delivery of the three fetuses.

The perinatal mortality recorded for the booked patients was one out of the twenty six babies, excluding the abortion at twenty three weeks, while four perinatal mortalities out of the twelve babies were recorded for the unbooked patients. The only perinatal mortality in the cohort of booked patients was as a result of complication of exchange blood transfusion for neonatal jaundice. The four perinatal mortalities recorded for the unbooked patients were due to stillborn in one baby and birth asphyxia in three babies (Table 2).

Excluding the case of abortion, the mean birth weight was 1.92Kg with a range of 1.15Kg to 2.9Kg, and all the mothers had at least a surviving child to take home. Respiratory distress syndrome occurred in thirteen of the forty two fetuses and all the live births were observed or managed in the neonatal intensive care unit. There was no detectable malformation noticed in the babies.

Table 1: Triplet gestation and maternal complications in 14 cases

Characteristics	No.	%
Cervical incompetence/cervical cerclage	2	14.3
Preterm contractions /parenteral tocolysis	1	7.1
Pre-eclampsia	3	21.4
Gestational diabetes mellitus	0	0
Anaemia	8	57.1
PPROM	8	57.1
Pre term delivery	11	78.2

PPROM: preterm premature rupture of membranes

Table 2: Triplet gestation and foetal outcome in 14 cases

Characteristics	No.	%
Abortion	3	7.1
Preterm births	33	78.6
Term births	6	14.3
Live births	38	90.5
Still birth	1	2.4
Respiratory distress syndrome	13	31.0
Birth asphyxia	7	16.7
Intraventricular haemorrhage	1	2.4
Perinatal mortality		
Booked	1	2.4
unbooked	4	9.5
Neonatal intensive care	38	90.5
Congenital malformation	-	0
“take home” babies rate	34	81.0

Discussion

Triplet pregnancies are not commonly encountered in the developing world like ours. This is due to limitations in the availability and accessibility of patients with infertility to assisted reproduction technology. In patients with higher order multiple pregnancies, induced conception is the commonest in developed countries while spontaneous conceptions still remains the commonest amongst the few cases of higher order multiple pregnancies we manage.

In triplet gestation, the obstetrician is faced with increased maternal and fetal risk when compared to singleton pregnancies.² The risk of pregnancy complications especially those relating to prematurity increases with three or more conceptuses.^{6,7} Perinatal outcome of multiple pregnancies has been found to be directly related to gestational age at birth and birth weight at delivery.² This has created debate with regards the best management protocol. All patients in this series had conservative management, which has been associated with good outcomes of triplets.⁸ The place of multifoetal pregnancy reduction (MFPR) in triplet gestation is complex, while some authors reported improved pregnancy outcome with reduction of triplet to twins,^{9,10} others did not find substantial difference in the outcome when compared to conservative or expectant management.¹ MFPR is not practiced in our setting.

Good antenatal care has been found to be superior in reducing prematurity and adverse pregnancy outcome even in singleton pregnancy.¹¹ The importance of early booking in the antenatal clinic can not be over emphasized. It exposes the patient to some preventive measures shown to reduce preterm deliveries in multiple pregnancies.^{12,13} About two-third of the patients in this study booked for antenatal care. Early diagnosis of triplet pregnancy allows for the initiation of a pattern of measures to prevent preterm birth and prematurity.¹⁴ The mean gestational age at diagnosis of triplet pregnancy in this study was 18.6 weeks. This is late compared to fifteen weeks reported by Pons.¹⁴ Where available, early diagnosis

also allows for discussion on MFPR with couples, because the recommended time for performing the procedure is between eleventh and thirteenth week of gestation.¹

Prophylactic cervical cerclage was not offered to any of the patient in this series, the two patients that had cerclage insertion, had it based on clinical indication. There are divergent views on the place of prophylactic cerclage in triplet gestations with regards to the foetal outcome. Some authors found it beneficial,^{12,15} others found no benefit to its use.^{14,16,17} However, Ramin¹⁸ found ultrasonographic assessment of cervical length to be a useful adjuvant in the management of triplet gestation. Not only does cervical length assessment by ultrasound scan provide evidence of cervical competence or lack of it, it also provides a unique tool to monitor patients at risk of preterm delivery. The pattern of midtrimester abortion recorded in this study was not typical of the abortion process in cervical incompetence.

Prophylactic oral tocolytic agent with beta sympathomimetic agents was used in this series as supported by other authors.¹³ Though the study by Newman¹⁹ showed that its use is non-beneficial in triplet pregnancies. It might be beneficial to our patients considering their difficulty in adhering to bed rest, in order to contribute their own quota to the maintenance and sustenance of the family. Furthermore, we have no facility like a tocodynamometer that the patient can use to monitor contractions at home by herself. Other authors have supported its use in triplet pregnancies.²⁰

Preventive hospitalization as recommended by Skrablin and other authors^{5,21} was not offered to patients in this series. They all had outpatient care. Hospitalization was based on obstetric or medical complication. Outpatient strict bed rest was recommended to our patients, in line with the view of some authors that reported decrease in prematurity and perinatal morbidity in women who observed strict bed rest.^{22,23} how compliant the patients were in observing strict bed rest is difficult to judge.

The rate of preterm gestation for triplet varies between 75% and 100%,¹⁴ which is similar to the rate from our series. In triplet pregnancy, early detection and prevention of preterm labor and premature rupture of membrane will help decrease the rate of preterm delivery. Monitoring of salivary estriol, cervical fetal fibronectin and serial ultrasonographic assessment of cervical length are potentials towards this direction of management.^{18,24,25} The mean gestational age at delivery in this study falls between 32 and 34 weeks as reported for triplets.^{4,5,26}

The mode of delivery is controversial but on the balance it favours abdominal delivery.^{20,27} However, other studies did not find difference in outcomes of planned vaginal delivery when compared to abdominal delivery.²⁸⁻³⁰ Three patients in this series had planned intrapartum ultrasound-aided vaginal delivery with positive results. Ultrasound was beneficial in monitoring the foetal heart rate(s) and foetal presentation(s) in the 1st and 2nd stages of labour.

From this study, booking status of the patients is an important determinant of perinatal mortality, due to complications arising from unplanned delivery. Although our range of perinatal mortality in the booked and unbooked patients falls between the quoted ranges of 0% to 21% in triplets,³¹ supervision of pregnancy and planned delivery in the unbooked patients would have lowered the perinatal mortality.

Respiratory distress syndrome (RDS) was the leading cause of fetal morbidity in this study, which was reported in other similar studies.^{14, 17, 18} Many authors recommended the use of corticosteroids in the prevention of RDS.^{5, 22} Though it was part of our management protocol, unbooked patients presenting in labour were not treated with corticosteroids.

In this series, serious maternal complications seem to occur infrequently. Glucose intolerance and gestational diabetes mellitus due to exaggerated anti-insulin environment in multiple pregnancy, was not recorded in this series. The perinatal outcome reported in this study could be better if all patients were booked. In triplet gestations managed conservatively, early booking for antenatal care and initiation of specialized prenatal programs with planned delivery, a better outcome could be achieved.

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