

Research Article

Triple Gestations in Two University Teaching Hospitals in Yaounde, Cameroon

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Abstract The frequency of triplet pregnancies is increasing due to medically assisted reproduction. This retrospective study, carried out in 2 university hospitals in Yaounde (Cameroon) over a 6-year period, was done to evaluate the complications that occurred during triple pregnancies as well as the mode of delivery of triplets. A total of 43 cases were analyzed. The most common complications that occurred during pregnancy were preterm delivery and pre-eclampsia. Twenty seven women (62.8%) delivered vaginally and 16 (37.2%) were delivered by caesarean section with the most common indications being mal presentation and cord prolapse of the 1st triplet. In patients who have proper antepartum monitoring, it is possible to pre-select cases for trial of vaginal delivery because vaginal delivery is possible and carries no significant risk for the fetuses.

Keywords triplet gestations; pre-eclampsia; premature delivery; vaginal delivery; caesarean section

1 Introduction

Multiple pregnancies are associated with increased risks of intrauterine growth retardation, pre-eclampsia, eclampsia, preterm delivery and intra partum complications [7]. These risks are greater for triplet pregnancies than twin or singleton pregnancies [10]. Triplet pregnancies are uncommon, thus studies on the subject are few, but with medically assisted reproduction, the incidence of triplets is increasing worldwide, hence the need for in-depth knowledge on the subject. The aim of this study was to analyze the triple gestations delivered in 2 teaching hospitals in order to identify the most common complications that occurred during these pregnancies as well as the impact of the route of delivery on survival of the babies.

2 Patients and methods

This descriptive and retrospective study was conducted using data from the 1st January 2002 to the 31st December 2007 in the maternities of the University Teaching Hospital of Yaounde and the Central Hospital of Yaounde (Cameroon). Medical records of all triplet deliveries were analyzed. For each case, the data collected included maternal variables such as the age and parity. The evolution of the pregnancy under study was scrutinized to determine maternal complications which may have occurred. Other pregnancy covariates analyzed were gestational age (confirmed by an ultrasound scan done before the 20th week of gestation) and presentation of the fetuses. Variables concerning the delivery were the mode of delivery and the delivery interval between foetuses. Foetal anthropometry variables studied were foetal and placental weights, the Apgar score of the newborn babies. The wellbeing of the neonate one week after delivery was also noted. Data were collected using a standardized and tested questionnaire. Our minimum sample size of 39 women was calculated assuming that the prevalence of triplet pregnancies is 0.1% in the University Teaching Hospital of Yaounde, the degree of precision of our study is 0.05 and the confidence interval is 0.01. This informed the decision to recruit cases in 2 university hospitals in Yaounde up to a 6-year period for the sample size to be attained. Delivery registers were carefully analyzed to have the total number of deliveries and the data collected were subsequently analyzed using SPSS 12.0.

3 Results

This study examined a total of 43 triplet pregnancies out of 32,411 deliveries, giving an incidence of 0.13% or 1 triplet out of 754 deliveries. The ages of our patients

| Gestational age (weeks) | Number of cases | % |
|-------------------------|-----------------|------|
| 29 | 1 | 2.3 |
| 30 | 0 | 0.0 |
| 31 | 1 | 2.3 |
| 32 | 3 | 6.9 |
| 33 | 7 | 16.2 |
| 34 | 5 | 11.6 |
| 35 | 11 | 25.6 |
| 36 | 8 | 18.6 |
| 37 | 5 | 11.6 |
| 38 | 2 | 4.6 |
| Total | 43 | 100 |

Table 1: Distribution of patients according to gestational age.

| Indications | Number | % |
|--|--------|------|
| Malpresentation of 1st triplet (Breech presentation: 4, Transverse presentation: 3) | 7 | 43.8 |
| Cord prolapse of the 1st triplet | 4 | 25.0 |
| Scarred uterus | 3 | 18.8 |
| Placenta praevia | 1 | 6.2 |
| Severe pre-eclampsia | 1 | 6.2 |
| Total | 16 | 100 |

Table 2: Indications of caesarean sections.

ranged from 20 to 34 with a mean of 28.4 ± 4.5 years (mean \pm standard deviation). The mean parity before delivery was 1.7 ± 1.0 and ranged from 0 to 4.

The gestational ages at delivery ranged from 29 to 38 weeks with a mean of 34.6 ± 1.9 weeks (Table 1). Complications that occurred during these pregnancies included 36 cases (83.7%) of premature labor, 4 cases (9.3%) of pre-eclampsia and 1 case (2.3%) of ante partum haemorrhage due to placenta praevia.

At time of delivery, the presentation of the first foetus was cephalic in 34 cases (79.0%), breech in 6 cases (14.0%) and transverse in 3 cases (7%) while that of the 2nd foetus was cephalic in 37 cases (86.0%) and breech in 6 cases (14.0%) and that of the 3rd foetus was cephalic in 40 cases (93.0%) and breech in 3 cases (7.0%).

Regarding the mode of delivery, 27 women (62.8%) delivered vaginally against 16 (37.2%) who were delivered by caesarean section. The common indications of caesarean section were malpresentation and cord prolapse of the 1st triplet (Table 2). Among those who delivered vaginally, 6 cases (22.2%) had episiotomies.

The mean foetal weight was 1814 ± 476 g for the first triplet and ranged from 1050 g to 3008 g, 1728 ± 398 g for the 2nd triplet with a range between 965 g and 2500 g. This weight for the 3rd triplet was 1783 ± 438 g with a range of 707–2520 g. The mean foetal weight for the 3 foetuses was 1775 ± 437 g.

| | Mean Apgar score at 1st minute \pm standard deviation (range) | Mean Apgar score at 5th minute \pm standard deviation (range) |
|-------------|---|---|
| 1st triplet | 7.7 ± 1.4 (2–10) | 9.1 ± 1.7 (0–10) |
| 2nd triplet | 7.1 ± 1.2 (3–9) | 8.5 ± 1.5 (0–10) |
| 3rd triplet | 7.2 ± 1.6 (0–9) | 8.5 ± 1.7 (0–10) |
| Mean | 7.3 ± 1.4 (0–10) | 8.7 ± 1.6 (0–10) |

Table 3: Mean Apgar score of newborns.

Concerning the Apgar score at the 1st minute, it ranged from 0 to 10 for all triplets with a mean of 7.3 ± 1.4 while that of 5th minute ranged from 0 to 10 for all triplets with a mean of 8.7 ± 1.6 (Table 3).

Among the babies delivered vaginally, the delivery interval between the 1st and the 2nd triplets ranged from 3 to 13 minutes with a mean of 7.2 ± 3.8 minutes. The delivery intervals between the 2nd and the 3rd triplets ranged from 4 to 14 minutes with a mean of 6.7 ± 3.6 minutes.

The weights of the 3 placentas ranged from 800 g to 1702 g with a mean of 1050 ± 187 g. Five foetuses (38.7%) died within one week of delivery. No maternal death was recorded.

4 Discussion

The incidence of multiple deliveries has increased in the last decades because of the frequent use of assisted reproductive technology as a treatment of infertility. The incidence of triplet deliveries in our study (0.13%) is higher than the 0.06% observed in a study by Egić et al. in Belgrade (Serbia) [5] and 0.09% observed in another study by Al-Suleiman in Saudi Arabia [2]. In our clinics, we do not have the necessary equipment to perform in vitro fertilization, but we frequently use ovulation inducing drugs to treat some cases of infertility. The increased incidence of these deliveries may be due to the fact that some cases are referred from smaller hospitals since our hospitals are reference centers for high risk pregnancies like triplet gestations.

The mean patient age in our study (26.4 years) was similar to the 27.2 observed for women carrying twin pregnancies, so also was the mean parity (1.7) which was similar to the 1.8 observed in these women by Nkwabong et al. in Cameroon [8]. The commonest complications that occurred during pregnancies were preterm delivery and pre-eclampsia.

The mean gestational age at delivery in our study (34.6 weeks) was greater than that noticed in other studies which varied between 31.7 and 32.9 weeks [2, 7, 10]. This could be due to the frequent hospital admissions of our patients in cases of threatened premature deliveries as well as the frequent recommendation of bed rest from 24 weeks gestation and the use of prophylactic tocolytic drugs. Bed

rest starting from the 20th to the 26th week reduces the incidence of pre-eclampsia, of premature delivery and is associated with increased placental perfusion and birth weight [1].

In our study, 62.8% of triplets were delivered vaginally. Vintzileos et al. in USA [9] and Al-Suleiman et al. in Saudi Arabia [2] in their series delivered only 5% of triplets vaginally. Although caesarian section improves foetal survival, it carries a certain risk of maternal morbidity and mortality. Furthermore, it has a cost that is not always affordable to women in developing countries. Alran et al. in France [4] did a trial of labor in 78 women with triplet gestations and observed successful vaginal deliveries in 71% of these cases. Caesarean section is the route of choice for delivery of triplets for some authors [2,9], but Alama et al. [3] established a protocol for planned vaginal delivery of triplets. The prerequisites are a cephalic presentation of the 1st triplet, electronic monitoring of the 3 fetuses, the delivery should be conducted by an experienced obstetrician, and a neonatologist should be present. He observed a 88% rate of successful vaginal deliveries.

In our series, we decided to try vaginal deliveries because of the frequent occurrence of cephalic presentation of the 1st foetus, the gestational age usually at 33 weeks or above and because some women were multiparous and had a soft and rapidly dilating cervix. After the delivery of the 1st triplet, the 2nd and 3rd can be easier to deliver because they are frequently in cephalic presentation, they are usually smaller than the 1st and the cervix is already fully dilated. Nevertheless, the obstetrician must be experienced in breech delivery and in internal podalic version because the presentation of the 2nd and 3rd triplets could be breech or transverse. When the gestational age is 32 weeks or less, caesarean section seems to be the preferred mode of delivery to avoid foetal trauma [7]. All deliveries in our study were conducted by an obstetrician. Only 6 cases (22.2%) of vaginal deliveries had episiotomies.

The mean foetal weight of 1775 g in our study was higher than that of 1664 g, 1596 g, and 1552 g noticed respectively in Hungary by Hruby et al. [7], in Jordan by Ziadeh [10], and in Saudi Arabia by Al-Suleiman et al. [2]. This is due to the fact that the mean gestational age among our patients was higher than those observed in these studies. The mean foetal weight in our study was the highest for the 1st triplet (1814 g) and the lowest for the 2nd (1728 g).

The mean Apgar score at the 5th minute was 8.7 and was close to the score of 9.2 observed by other authors in Hungary [7].

The incidence of early neonatal death in our series was 5/129 (38.7/1,000) and was a bit different to that of 27.4‰, 45‰ and 48‰ observed respectively in Hungary, Serbia, and France [4,5,7]. The increased gestational age in

our study in comparison to that observed in those studies might have improved the neonatal survival in our study. The fact that their neonatal units are well equipped to take care of premature babies might also have improved the neonatal survival in their studies. However, our rate of early neonatal death was lower than that noticed in Saudi Arabia [2]. The higher rate of neonatal death in that study might have been due to the fact that their mean foetal birth weight was only 1552 g while it was 1775 g in our study. Risk factors in cases of premature delivery in Cameroon are birth weight < 1500 g, gestational age < 33 weeks, maternal age > 35 years, breech delivery [6]. The incidence of neonatal death among triplets depends on many factors such as gestational age, birth weight, mode of delivery, complications during pregnancy or delivery and neonatal resuscitation.

5 Conclusion

This study has shown that the most common complications that occurred during triplet pregnancies were preterm delivery and pre-eclampsia. Concerning the mode of delivery, vaginal delivery of triplets was possible when the 1st foetus was engaged in a cephalic presentation and it carried no significant risk for the fetuses especially when the gestational age was above 32 weeks and when there were no contraindications to vaginal delivery. In well equipped centers, trial of vaginal delivery can be carried out when the 1st triplet engages in cephalic presentation and when the gestational age is above 32 weeks, unless there are contraindications. For resource-constrained countries, every effort should be made to prevent premature labor and prolong the gestational period to improve fetal survival rates. Furthermore, women carrying triple pregnancies should be closely monitored and a careful pre-selection for vaginal trial of labor should be carried out to reduce caesarean deliveries rate.

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