



Multiple Gestations: *Management of Pregnancy and Delivery*

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The antenatal management and outcome of 31 higher-order multiple gestations, 24 triplets, six quadruplets, and one set of quintuplets were analyzed. Bedrest was advised as soon as the diagnosis was made; hospitalization along with the administration of betamethasone and phenobarbital was begun during the second trimester. Caesarian section was performed on 13 women (42%). The overall mortality rate was 14.8%; excluding neonates less than 28 weeks of age, however, it became 7.5%. The primary cause of death was respiratory distress syndrome.

Key words: Triplets, Quadruplets, Quintuplets, Bedrest, Betamethasone, Phenobarbital

INTRODUCTION

The wide use of ovulation-inducing agents over the last two decades has been associated with an increased number of multifetal pregnancies and an increased awareness of the medical risks attendant to these maternities. The major clinical problem associated with multifetal pregnancy is prematurity and a high incidence of fetal loss. Many aspects of the management of multiple births remain debatable, especially as they concern the higher orders of multiple birth. Our experience with 31 multifetal gestations delivered at Columbia-Presbyterian Medical Center between 1965 and 1981 is reviewed in this study.

MATERIALS AND METHODS

Thirty-one sets of multifetal pregnancies were delivered by 31 women. The mothers had a mean age of 29 plus or minus 4 years. Six women conceived spontaneously, 6 after treatment with clomiphene, and the remaining 19 after ovulation induction with human menopausal gonadotropins (HMG). The infants were delivered as 24 sets of triplets, 6 sets of quadruplets, and 1 set of quintuplets (Table 1).

MANAGEMENT

A pelvic sonogram was routinely performed on all women treated with human menopausal gonadotropins/human chorionic gonadotropins (HCG) as soon as they reached the sixth or eighth week of gestation. Patients treated with clomiphene citrate were not routinely scanned with ultrasound unless the uterine size was larger than anticipated.

TABLE 1. Number of Triplets, Quadruplets, and Quintuplets in a Set of 31 Multiple Pregnancies

| Treatment before conception | No. of pregnancies | No. of fetuses | | |
|-----------------------------|--------------------|----------------|------|------|
| | | Three | Four | Five |
| None | 6 | 6 | 0 | 0 |
| Clomiphene citrate | 6 | 5 | 1 | 0 |
| HMG/HCG | 19 | 13 | 5 | 1 |
| Total | 31 | 24 | 6 | 1 |

HMG: human menopausal gonadotropin; HCG: human chorionic gonadotropin.

Bedrest was advised for all patients as soon as diagnosis of multiple gestation was made. Admission to the hospital was planned on the 29th or the 30th week. Betamethasone (12 mg) was administered daily for two consecutive days and then weekly, beginning at the 26th to 28th week, in order to accelerate fetal lung maturity [1]. Phenobarbital (30 mg tid) was initiated at the same time, based on evidence that this medication, given for at least two weeks prior to delivery, will decrease the concentration of neonatal serum bilirubin, probably by enhancing hepatic enzyme activity in the fetus and newborn [2].

Tocolytic agents were not given and servical circlage was not performed in any of the patients.

RESULTS

The mean gestational age at the time of delivery was 34.8 ± 4.2 weeks; when that figure was broken down for triplets, quadruplets, and quintuplets, the duration of pregnancies was 35.75 ± 2.9 , 31.08 ± 6.84 , and 34 weeks, respectively (Table 2). Mothers who were on bedrest, delivered at 35.1 ± 3.8 weeks, versus 34.3 ± 3 weeks for mothers not on bedrest. Only two sets of quadruplets were delivered before the 28th week of gestation.

Caesarian section (CS) was performed on 13 women (42%), while the remaining 18 delivered via the vaginal route. Sixty-nine percent of the women who underwent CS had a medical indication for the operation. The most common indication was premature rupture of membranes and poor labor in 38%, previous CS in 15%, and for contracted pelvis and abruptio placentae each in 8%, respectively. Table 3 shows the method of vaginal delivery of 18 sets (58%).

There were 50 male and 51 female infants in this group (M/F ratio of 0.98). The Adaptability, Partnership, Growth, Affection, and Resolve (APGAR) scores at the first and fifth minutes of the 101 newborn infants were analyzed. A statistically significant difference was noted only between the first and third infant on the one-minute APGAR score (7.3 ± 1.7 vs. 5.8 ± 2.3 , respectively; $P < 0.001$). Newborns delivered by CS had a better one-minute APGAR score than those delivered vaginally (7.1 ± 1.7 vs. 6 ± 2.1 , respectively; $P < 0.01$) (Table 4).

Further analysis of the one-minute APGAR scores revealed that the APGAR scores of third-born infants delivered by CS were significantly higher than the scores of infants delivered vaginally (6.8 ± 1.8 vs. 5.0 ± 2.3 , respectively; $P < 0.05$).

There were 15 neonatal deaths in this series. Eight of them represented two sets of quadruplets delivered at the 22nd and 25th week of gestation, respectively, with APGAR

TABLE 2. Gestational Age at Delivery for 31 Sets of Multifetal Pregnancies

| | No. of sets | Duration of pregnancy (wk) (Mean ± SD) |
|-------------|-------------|--|
| Triplets | 24 | 35.75 ± 2.9 |
| Quadruplets | 6 | 31.08 ± 6.84 |
| Quintuplets | 1 | 34 |
| Total | 31 | 34.8 ± 4.2 |

TABLE 3. Method of Delivery of 31 Sets of Multifetal Pregnancies

| | |
|----------------------------|------|
| Caesarian section | 42% |
| Vaginal delivery | 58% |
| Breech extraction | 30% |
| Spontaneous | 27% |
| Forceps | 19% |
| Assisted Breech extraction | 12% |
| Version and extraction | 12% |
| Total | 100% |

TABLE 4. APGAR Scores ± SD of 101 Neonates

| | 1st Min | 5th Min |
|-------------------|------------------------|-----------|
| 1st | 7.3 ± 1.7 ^a | 8.3 ± 1.4 |
| 2nd | 6.6 ± 0.8 | 8.4 ± 1.0 |
| 3rd | 5.8 ± 2.3 ^b | 8.2 ± 1.5 |
| Vaginal | 6 ± 2.1 ^b | 8.2 ± 1.6 |
| Caesarian section | 7.1 ± 1.7 ^b | 8.5 ± 0.7 |

APGAR: Adaptability, Partnership, Growth, Affection, and Resolve; SD: standard deviation; Min: minute.

^aP < 0.001.

^bP < 0.01.

scores of 0.0. The remaining seven neonatal deaths represent a mortality rate of 7.5%. The main cause of death in five out of seven neonates was respiratory distress syndrome.

One patient required total abdominal hysterectomy due to placenta accreta. No other serious postpartum complications were encountered.

DISCUSSION

The present report was comprised of 31 sets of multifetal pregnancies, 24 triplets, six quadruplets, and one set of quintuplets, with the lowest perinatal mortality reported in the literature. Although the better outcome cannot be attributed to any single factor, we believe that the protocol used for the management of these patients can serve as a guideline for further studies.

REFERENCES

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