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Perinatal Management of Twin Pregnancy

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Abstract. Of 104 cases, 38 (ie, 36.53%) experienced premature delivery (controls: 4.32%). In instances of threatened premature delivery, 28 cases (26.92%) underwent ligation of the cervix. EPH gestosis occurred in 62 cases - a high incidence rate of 59.61% (controls: 12.9%). Forty-nine cases (47.11%) were complicated by anemia (controls: 8.36%). There were 57 cases of SFD infants, again a high 27.40% incidence rate (controls: 5.94%). Apgar scores of 7 or less at 1 minute after birth indicated that of the 208 neonates, the second-born twin only in 20 cases (9.61%); both infants in 14 cases (6.73%); and, the first-born only in 3 cases (1.44%), developed asphyxia neonatorum. Given the high incidence of premature and immature infants in cases of twins, caution should be employed against threatened premature delivery from around the 28th week of gestation onwards. Ligation of the cervix with ritodrine administration should be performed following admission to hospital, and EPH gestosis, anemia and IUGR should be carefully monitored.

Key words: Twin pregnancy, EPH gestosis, IUGR, Premature and immature infants, Threatened premature delivery

INTRODUCTION

Perinatal mortality in twins is higher than it is in singletons. In this study, we have examined the perinatal management of twin pregnancies through a review of 104 twin deliveries performed at our hospital over the past 17 years.

MATERIALS AND METHODS

The study was on 104 twin pregnancies from the 23rd gestational week cared for at our hospital between May 1975 and December 1991. Singleton pregnancy data was em-

ployed as control, using the results from eight universities as described by M. Suzuki [8]. This is considered to be the most authoritative data available for institutions in Japan.

The following factors were investigated: threatened abortion or threatened premature delivery, ligation of the cervix, EPH gestosis, anemia, gestational week at delivery, presentation at delivery, interval between extraction of the first- and second-born, body weights (incidence of SFD), asphyxia neonatorum, one minute Apgar scores (below 7), and perinatal death rates.

RESULTS

Of the 104 cases, 38 (36.53%) experienced premature delivery (controls: 4.32%). The Figure shows the situation at delivery in terms of the relationship between gestational week and fetal presentation. Treatment of threatened premature delivery in 27 cases (approx 25.96%) included ligation of the cervix, bed rest and administration of β -stimulants. Fourteen of these however, still resulted in premature deliveries (Table 1).

EPH gestosis occurred in 62 cases. This is a high incidence rate (59.61%) compared to controls (12.9%). By type, there were 16 cases of e, 8 of ep, 7 of E and 6 of eph, meaning that EPH gestosis was mainly edema. Forty-nine cases (47.11%) were complicated by anemia (controls: 8.36%), which meant that about half the cases of twin pregnancy were treated with chalybeate.

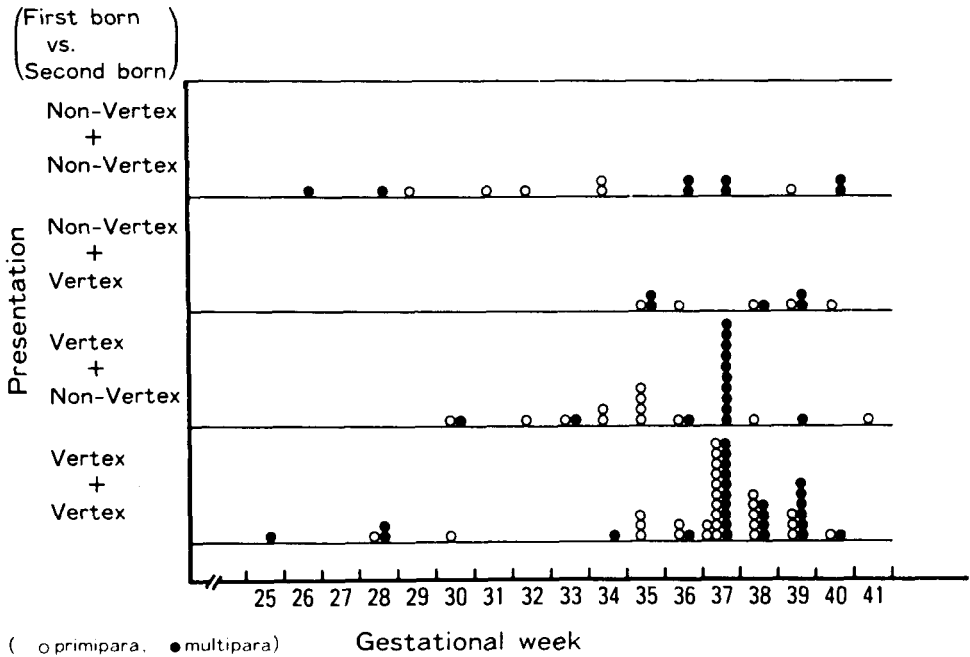


Figure - Gestational week and delivery presentation

Table 1 - Clinical results of twin and singleton pregnancies

	Twin pregnancies (n = 104)	Singleton* pregnancies (n = 11,777)
Threatened premature deliveries	27 (25.96%)	1216 (10.32%)
Premature deliveries	38 (36.53%)	510 (4.33%)
EPH gestosis	62 (59.61%)	1525 (12.94%)
Anemia	49 (47.11%)	985 (8.36%)

* Controls: Prenatal Care Study (Suzuki) Group

As shown in the Figure, the 104 twin pairs were classified into four groups according to presentation and birth order, eg. vertex + vertex, vertex + non-vertex, non-vertex + vertex, and non-vertex + non-vertex presentation. These groups separately represented 54 (51.92%), 26 (25.0%), 10 (9.61%) and 14 (13.46%) respectively.

Delivery intervals between the first- and second-born were: 5 min or less in 46 cases (45.23%); from 5 to 10 min in 37 cases (35.57%); from 10 to 15 min in 6 cases (5.76%); from 15 to 20 min in 8 cases (7.69%); and 20 min or more in 7 cases (6.73%).

Table 2 - SFD and Apgar score

	Twins (n = 208)	Singletons* (n = 11,621)
SFD	57 (27.40%)	691 (5.94%)
1 min Apgar Score (below 7)	37 (17.78%)	860 (7.40%)
{ first born only	3 (1.44%)	
{ both	14 (6.73%)	
{ second born only	20 (9.61%)	

* Controls: Prenatal Care Study (Suzuki) group

SFD incidence rates are shown in Table 2. There were 57 cases of SFD infants-again a high incidence rate (27.4%) when compared to controls (5.94%). Although most of the cases of severely immature babies were delivered by the 29th week, four were delivered after the 30th week of pregnancy.

Apgar scores of 7 or less recorded 1 min. after birth, indicated that in 20 cases (9.61%) the second born only; in 14 cases (6.73%) both; and, in 3 cases (1.44%) the first born only, developed asphyxia neonatorum. Delivery intervals for the second born with asphyxia were less than 5 min in 12 cases, 5 to 10 min in 3 cases, 15 to 20 min in 2 cases and 20 min or more in 3 cases.

DISCUSSION

In the early stages of pregnancy ultrasonic findings (eg. 1 gestational sack: 1 chorionic twin pregnancy; 2 gestational sacks: 2 chorionic twin pregnancy) and those regarding twin-to-twin transfusion syndrome (eg. hydramnion, oligoamnion) are important because both are closely related to the prognosis of twin pregnancies. Women given ovulation-inducing agents (particularly HMG-HCG therapy) show a high ratio of multiple pregnancies [1,9]. For this reason, ultrasonic diagnostics should be conducted at an early stage of pregnancy in these cases.

Caution should be taken to prevent threatened premature delivery from gestational week 28 onwards. If the fundus of the uterus grows more than 30 cm, or if opening or effacement of the cervix or contraction of the uterine corpus is noted, hospitalization and treatment are desirable. Bedrest, ritodrine hydrochloride, and a β_2 stimulation are recommended. Our therapeutic results suggest that ligation of the cervix should be expressly conducted.

Because a high incidence of EPH gestosis appears to be associated with twin pregnancies, rest and dietary restrictions (eg. salt and caloric intakes) should be recommended. Also, as iron deficiency anemia was noted in 47.11% of the cases studied, preparatory treatment for delivery should be completed.

It is likely that twin pregnancies will be associated with IUGR [3,5]. Growth from gestational week 30 onward, in particular, is reported to be poor. Treatment on admission, taking into account the possibility of threatened premature delivery, appears to be the safest.

When entering the later stages of twin pregnancy, fetal controls should include NST. A delivery monitor which enables simultaneous recording of both twins is recommended. In placental function testing, attention should be paid to high urinary estriol levels and HPL observation. In regards to pulmonary dysmaturity syndrome, because twin pregnancies frequently result in premature deliveries and immature infants, it is important to predict the occurrence of respiratory distress syndrome (RDS). In instances of amniorrhesis or when amniocentesis is to be performed, shake tests should be conducted and betamethasone administered as a means of promoting pulmonary maturity.

In summary, in the management of the delivery of twins, particular attention should be paid to the following points:

- a) Wait for the onset of spontaneous labor pains. If tocolysis is not possible, the point of bag rupture is the proper time for delivery.
- b) Employ CTG.
- c) Secure the mother's blood vessel.
- d) Have at least two obstetricians (one experienced and highly skilled), a neonatology specialist and an anesthesiologist in attendance.
- e) Following the delivery of the first twin, confirm by internal examination the presentation of the second and check for prolapse of the umbilical cord. CTG monitoring should be utilized in observing the second twin's situation.
- f) The second infant should be delivered as early as possible after the first in order to prevent impairment of placental circulation. It has been stated that the delivery inter-

val should not be more than 30 min [6]. It should be borne in mind that the second born is likely to have a poor prognosis due to environmental changes in the uterine cavity. These changes are thought to include: umbilical cord factors such as, umbilical descent and prolapse; placental factors such as, early separation and blood stream reduction, and further uterine contraction failure.

Atonic bleeding frequently occurs in twin pregnancies, therefore uterine contractions after delivery should be monitored with caution.

As regards the use of anesthesia during births, Crawford [4] demonstrated that deterioration of umbilical cord blood gas in the second born can be lessened by administration of epidural anesthesia. It has also been reported [2] that a high success rate may be achieved through the use of anesthesia for external version. However, this aspect has yet to be studied in depth.

CONCLUSION

Since the incidence of premature and immature infants is high in the case of twins caution should be exercised to avoid threatened premature delivery from around the 28th week of gestation. Where indicated, ligation of the cervix with ritodrine administration should be performed following admission to the hospital, and EPH gestosis, anemia and IUGR should be monitored carefully.

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