

# Gift triplets and management problems – a case report

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## Summary

Pregnancies conceived through assisted reproduction can present considerable management problems to the obstetric and paediatric staff. Multiple pregnancies are common. The complication of prematurity increases the morbidity and mortality rates of the neonates.

*Key words:* Assisted reproduction; GIFT Triplets; complications.

## Introduction

In this case report, a triplet pregnancy conceived through gamete intrafallopian transfer (GIFT) had preterm rupture of membranes followed by chorio-amnionitis. Caesarean section was performed. This case is discussed to highlight some of the problems encountered.

## Case Report

A 33 year old Chinese primigravida with a six year history of primary infertility conceived a triplet pregnancy following gamete intrafallopian transfer (GIFT) at a government centre in October 1989. In May 1990, she was admitted as an unbooked case to the University Hospital at 29 weeks of gestation with painless pre-term rupture of membranes. Speculum examinations revealed clear liquor. The cervical os was closed. High vaginal swabs were taken for bacterial culture and sensitivity. A decision was made to delay the onset of labour with the tocolytic agent terbutaline as no ventilators were available. Intramuscular dexamethasone was given to enhance fetal lung maturity. However, 4 days following admission, the patient developed chorio-amnionitis with a pyrexia of 37.8°C and a purulent vaginal discharge was detected. High vaginal swabs were taken for culture and sensitivity. An emergency lower caesarean section was performed under ampicillin and metronidazole cover. The first triplet presented by the breech but the second and third triplets were in cephalic presentation. Oligohydramnios was noted in the first triplet. The liquor of the other 2 babies were clear. The 3 infants were male and weighed 1.18 kilograms, 1.45 kilograms and 1.43 kilograms and had Apgar scores of 8,8,8 and 8,9,9 at 1 and 5 minutes respectively. After delivery, the mother remained febrile for 2 days. Klebsiella was isolated from the vaginal swabs and gentamicin was commenced. The rest of the puerperium was uneventful. The triplets were nursed in the special care baby unit. Septic work-up were performed which included full blood counts, blood cultures, surface swabs and gastric aspirates for culture and sensitivity. Antibiotics comprising crystalline penicillin 200,000 iu/kg/day and gentamicin 5mg/kg/day were commenced. They were discontinued when the cultures were negative for organisms. Triplet 1 had no skeletal deformity nor was he in respiratory distress. Triplet 2 was intubated at 3

minutes because of poor respiratory effort and cyanosis. Hyaline membrane disease was detected on chest x'ray. Ventilatory support was given for a week with maximum inspiratory to end expiratory pressure at 24/4cm of water and a maximum  $\text{FiO}_2$  of 60%. Following extubation, additional oxygen with nasal prong continuous positive airway pressure (CPAP) was given for another 4 days. Further oxygen was delivered via a headbox and later through the incubator for another 4 weeks with clinical monitoring and blood gas analysis as guidance. Triplet 2 was noted to turn pale and become distressed whenever oxygen was discontinued. Triplet 3 developed respiratory distress soon after birth and was intubated and resuscitated. He required ventilatory support for one week with a maximum inspiratory to end expiratory pressure of 25/5cm of water and a maximum  $\text{FiO}_2$  of 70%. Chest x'ray showed a moderately severe hyaline membrane disease. On the eighth day of life, he was extubated. Following extubation, he received phototherapy for 2 to 3 days. Nasogastric tube feeding was introduced between 2 to 3 days of life and was well tolerated. Infant formula was used initially followed by pre-term formula till they weighed around 1.5 kilograms, where upon infant formula was again used. Upon hospital discharge, Triplet 1 weighed 1.8 kilograms after 5 weeks, Triplet 2, 2.8 kilograms after 9 weeks and Triplet 3, 2.1 kilograms after 7 weeks of special care. Routine cranial ultrasound scans, thyroid function tests and G6 PD screening were all normal. There were no biochemical evidences of metabolic bone disease of prematurity.

## Discussion

The scope of infertility management was widened in 1978 with the birth of the first baby conceived through in-vitro fertilization and embryo transfer (IVT-ET)<sup>1</sup>. Asch et al<sup>2</sup> reported a successful twin birth in 1985 using trans-laparoscopic gamete intrafallopian transfer (GIFT). Further assisted reproduction methods such as zygote intrafallopian transfer (ZIFT) and pronuclear stage tube transfer (PROST) have been devised. All these methods employ artificial induction to obtain superovulation and subsequent placement of multiple oocytes or embryo transfers to increase the chances of pregnancy. Multiple pregnancies are therefore common. In two recent Israeli series, the incidence of triplets was 1:1696 and 1:3412 with a third of each series resulting from the use of ovulation induction<sup>3,4</sup>.

The main problems of triplet pregnancies are maternal anaemia, pregnancy-induced hypertension, threatened abortion, antepartum and postpartum haemorrhage and pre-term labour. The perinatal mortality rate in triplets is five times that of singletons<sup>5</sup>, with higher perinatal losses among the second and third infants.

The incidence of pre-term labour in triplets is 80%. Cervical cerclage and tocolytic agents have been used prophylactically but bed rest and hospitalization carry the best results<sup>6</sup> to prevent pre-term labour. In the case presented, pre-term rupture of membranes occurred at 29 weeks of gestation followed by chorio-amnionitis as a result of prolonged membrane rupture. Urgent termination of pregnancy was desirable because of this. Caesarean section was also indicated for optimal survival of the triplets in view of their prematurity. The first triplet presenting by the breech has also been quoted as an indication for caesarean section<sup>7</sup>.

Triplet 1 had oligohydramnios. Although this is associated with pulmonary hypoplasia, skeletal deformity and neonatal infection<sup>8,9</sup>, it was absent in this case. Triplets 2 and 3 had hyaline membrane disease which did not affect triplet 1. Stress and steroid administration could have averted this complication although steroid usage could have encouraged the onset of chorio-amnionitis. Interestingly, the bacterial culture from the triplets were negative for organisms. Triplet 2 did not require high  $\text{FiO}_2$  and ventilatory pressure. However, his subsequent prolonged dependency on oxygen could be due to bronchopulmonary dysplasia secondary to oxygen toxicity and baro-trauma<sup>10</sup>.

Multiple pregnancies such as triplets can tax hospital facilities in order to cope with sudden multiple births. Programmes for assisted reproduction should take into account these factors in order to optimise care for these high-risk pregnancies. In addition to the availability of facilities, the importance of team work among gynaecologists, obstetricians and paediatricians together with the dedicated nursing staff is paramount to the successful management of high-risk multiple pregnancies.

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