

Delayed Delivery of the Two Remaining Fetuses of Triplet Pregnancy: Case Report

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ABSTRACT

The incidence of multiple gestations increased after introduction of assisted reproduction techniques. Traditionally; in twin and/or triplet pregnancies; if one baby delivered preterm, this situation managed by delivery of the second and/or the third fetuses. This case report represents the suggested conservative management during the delayed delivery of the two remaining fetuses of triplet pregnancy, its outcome, and benefits.

The studied woman is 35-years old, G3 P2, triplet pregnancy after intra-cytoplasmic sperm injection trial, presented with preterm premature rupture of membranes of the first fetus at 20+2 weeks` gestation, who delivered as fresh still birth. The couple informed, and agreed for the conservative management of the two remaining fetuses. After delivery of the first fetus; the umbilical cord ligated as high as possible in the cervix. She received systemic antibiotics for one week, with follow up of; infections, and consumptive coagulopathy parameters, and wellbeing of the fetuses through the conservative treatment. She received betamethasone to accelerate the lung maturity, and Mg-Sulphate for fetal neuro-protection at 24 weeks. The conservative management discontinued, and she delivered by cesarean section at 25 weeks+1 after attack of ante-partum hemorrhage. The delivered neonates admitted to neonatal intensive care unit on ventilator support, surfactant therapy, and antibiotics. 80 days after neonatal intensive care unit admission; the neonates discharged from the neonatal intensive care unit with corrected age of 36 weeks+, on complete oral feeding, and room air.

The first fetus delivered at 20 weeks+2, fresh still birth (410 g), while the second, and third fetuses delivered at 25 weeks+1 (34 days of the conservative management), 780, and 840 g; respectively. Both fetuses survived, discharged from the neonatal intensive care unit after 80 days, at 2.2, and 2.3 kg weight; respectively.

The birth weight, and the survival rate of both fetuses increased after the conservative management. The suggested conservative management of the delayed delivery may be associated with reduced neonatal mortalities without any maternal complications.

Keywords: Delayed delivery, Triplet, Two fetuses

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Introduction

The incidence of multiple gestations increased after the introduction of assisted reproductive techniques (ARTs) (1).

Preterm labor (PTL), and preterm premature rupture of membranes (PPROM) are the commonest complications of multiple gestations. The perinatal mortality increased with the PTL, and PPROM, because of prematurity, and low birth weight (LBW) (2).

The risk of PTL in twin pregnancies is about 4%, 8%, 16% before the 30th, 32th, and 34th weeks` gestation; respectively (3), and the relative proportion of PTL complicated by pre-labor rupture of membranes (PROM) increased with gestational plurality 13.2% singletons, 16.8% twins, 20.0% triplets, 19.6% quadruplets, and 100% for higher-order multiples (4).

Recently; there are reported cases of delayed delivery of

the second twin for days, and even weeks (delayed-interval delivery), with good outcome in the majority of the cases, without general consensus or single protocol for the management of such cases (5). This case report represents the suggested conservative management during the delayed delivery of the second and/or third fetuses of triplet pregnancy, its outcome, and benefits. Necessary informed consents were obtained from patients to present this case report.

Case Report

The patient was 35-years old, G3 P2 (previous two CS), referred to Ahmadi hospital with positive pregnancy test after successful intra-cytoplasmic sperm injection (ICSI) trial due to male factor infertility (Oligo-asthenoteratospermia).

The first ante-natal ultrasound scan was performed 2 weeks after β -hCG positivity; showed 3 intact intrauterine gestational sacs, and managed by cervical cerclage at 13 weeks' according to the departmental protocol. The patient presented with preterm premature rupture of membranes (PPROM) at 20+2 gestational weeks with prolapsed non-pulsating cord of the first fetus. The cervical cerclage removed immediately after the admission and the first fetus delivered spontaneously one hour after the PPRM as 410 gr fresh still birth (FSB).

The couple informed about, possible risks, and benefits of the conservative management of the second, and third fetuses, before signing the informed consent.

After delivery of the first fetus; the umbilical cord ligated as high as possible in the cervix under complete aseptic conditions, and the placenta left inside the uterus, followed by vaginal washes with 0.5% chlorhexidine (bacteriostatic). Systemic IV antibiotics given in form of IV Clarithromycin with ampicillin for 2 days, followed by oral amoxicillin for 5 days. Throughout the conservative management, the mother hospitalized for detection of; infections (daily fever chart, vaginal, and urine cultures, White blood cells count, C-reactive protein, Pro-calcitonin weekly), consumptive coagulopathy (platelet count, prothrombin, bleeding, and clotting times weekly), and wellbeing of the second, and third fetuses.

Betamethasone was given to accelerate lung maturity, and Mg Sulphate for neuro-protection of the second, and third fetuses at 24 gestational weeks.

Outcome measures; the gestational age, the fetal weight at delivery of the second, and third fetuses, the neonatal outcome, and the maternal complications.

The conservative management discontinued when the patient developed sudden ante-partum hemorrhage, and delivered by cesarean section at 25+1 weeks, at the 34th day of the conservative management (4 weeks+6). The fetal weight of the second fetus, and third fetuses at delivery were 780, and 840 grams; respectively, with APGAR score of 5, 6, and 7 at

1, 5 and 10 minutes; respectively. The delivered neonates admitted to neonatal intensive care unit (NICU) because of respiratory distress, and prematurity on ventilator support (CMV for 3 days then CPAP), received surfactant 10 minutes after delivery, and blood gas examination performed every 6 hours. They received IV antibiotics according to the culture, and sensitivity taken as part of the neonatal sepsis screening protocol.

Two days after NICU admission; echo-cardiography showed normal findings for premature babies (small PFO 3-4 mm), and the cranial ultrasound showed no intracranial hemorrhage.

34 days after NICU admission; the corrected age of the neonates were 30 weeks; their weight were 1.20, and 1.25 Kg, on full oral feeding, on room air alternating with nasal CPAP.

80 days after NICU admission; the corrected age of the studied neonates was 36 weeks+, their weights were 2.2 and 2.3 Kg, on complete oral feeding, room air, and discharged from the NICU, for follow up in the outpatient department (OPD). Six months after discharge from the NICU; the corrected age of the neonates was 3 months, with normal growth parameters, appropriate motor, and sensory development for their ages.

The first fetus delivered at 20 weeks+2 as a 410 g FSB, while the second, and third fetuses delivered at 25 weeks+1 (34 days (4 weeks+6) of the conservative management), with fetal weights of 780, and 840 g; respectively. The second, and third fetuses survived, discharged from the NICU after 80 days, their weight at discharge was 2.2, and 2.3 kg; respectively, with normal growth parameters, appropriate motor, and sensory development for their ages. No morbidities recorded for the studied woman during the conservative management or during the perioperative periods.

Discussion

Delayed second twin delivery is more common nowadays, because of the increased multiple pregnancy rate after the introduction of the ART, and IVF (6). Traditionally; in twin and/or triplet pregnancies; if one baby delivered preterm, this situation managed by delivery of the second and/or the third fetuses. This case report represents the suggested conservative management during the delayed delivery of the second, and third fetuses of triplet pregnancy, its outcome, possible risks, and benefits.

After delivery of the first fetus at 20 weeks+2 as a 410 g FSB, the couple informed about the possible risks of keeping the live fetuses in the hostile intrauterine environment (recurrent PTL, infection from the retained placenta, postpartum hemorrhage, and consumptive coagulopathy) (6).

After the conservative management, the second, and third fetuses delivered at 25 weeks+1 (34 days (4 weeks+6) of con-

servative management), with fetal weight 780, and 840 g; respectively. The second, and third fetuses survived and discharged from the NICU after 80 days with weights of 2.2, and 2.3 kg; respectively, with normal growth parameters, appropriate motor, and sensory development for their ages. No morbidities recorded for the studied woman during the conservative management or during the perioperative periods.

Rosbergen et al, concluded that the delayed delivery of the second and/or third infant has a positive effect on short-term outcome (7).

Fayed et al, concluded that the delayed delivery in multiple pregnancies is beneficial, and successful for the second twin if managed in tertiary centers (8).

Arabin and van Eyck, recorded that the delayed-interval delivery in twin pregnancies, the first twin delivery before 25 weeks had a %50 survival (9/18), while the survival rate beyond 25 weeks was %65 (13/20) and survival rate was %95 (19/20) in corresponding second twin ($p=0.03$). While in triplet pregnancies; when the first born was <25 weeks, 2 of 14 remaining triplets survived, and when the first born beyond 25 weeks, 4 of 10 remaining triplets survived (9).

Arabin and van Eyck concluded that the delayed birth of the second twin associated with better perinatal results if the birth of the first twin happens between 20 and 29 gestational weeks (9).

The suggested conservative management during the delayed delivery consists of; ligation of the umbilical cord as high as possible in the cervix under complete aseptic conditions, and the placenta left inside the uterus, followed by combined systemic antibiotics in the form of IV Clarithromycin 1 g/day with IV ampicillin 8 g/day for the first 2 days, then oral amoxicillin 750 mg/day for the next 5 days (total 7 days) (5, 9). Hospitalization of the patient with regular follow up for infections, consumptive coagulopathy parameters, and wellbeing of the second, and third fetuses.

Fetal wellbeing of the second and third fetuses evaluated via fetal movements count, fetal heart rate (FHR) record daily, and trans-abdominal ultrasound weekly to detect amniotic fluid volume, fetal growth, and umbilical artery Doppler. No tocolysis given for the mother through the conservative management and/or after delivery of the first fetus (9).

Tocolysis can be used, if the uterine contractions developed after 24 weeks gestation after exclusion of chorioamnionitis, and continued for 48 hours in combination with betamethasone to accelerate the fetal lung maturation, and Mg Sulphate for neuroprotection (8,10).

The use of tocolysis is not indicated before 24 weeks, because the type II pneumocytes are not completely formed to release surfactant.

Antibiotics were given to the patient for one week (IV for

2 days, followed by oral antibiotics for 5 days), while, Roman et al, recommend the constant use of culture-directed antibiotics until the second twin delivery (10).

The studied case referred to Ahmadi hospital with positive pregnancy test after successful ICSI trial, and when the first ultrasound scan revealed 3 intrauterine gestational sacs, the cervical cerclage was performed at 13 weeks` according to the departmental protocol. The studied lady presented at 20+2 weeks with PPROM with a prolapsed non-pulsating cord of the first fetus. The cervical cerclage removed immediately after the admission, followed by delivery of the first fetus spontaneously one hour after the PPROM as fresh still birth (FSB) 410 g.

The most controversial issue during the conservative management of the delayed delivery is the cervical cerclage whether it's necessary or not?

In this case report; no cervical cerclage performed during the conservative management of the delayed delivery, because of the risk of infection associated with the cervical cerclage.

Although, Zhang et al, suggest that the use of cervical cerclage during the delayed delivery leads to prolongation of the delivery interval (11).

Arabin and van Eyck, suggest that the use of cervical cerclage in delayed delivery associated with risks of infection, and PPROM (9,12).

In addition; Fayed et al, and Reinhard et al, concluded that the use of cerclage during the delayed delivery did not improve the second twin survival and/or the maternal complications (8,13).

The aspects of hospitalization of the studied patient during the delayed delivery was not sufficiently discussed in previous studies; some authors presented discharge of the patient immediately after cervical cerclage (14), and others preferred strict hospitalization until the delayed second twin delivery (12).

In this presentation; the patient hospitalized during the whole conservative management for strict maternal, and fetal monitoring.

Currently; there is no single protocol proved to be superior to others during the conservative management of the delayed delivery. No single study proved that the delayed delivery associated with risk of infection of the second, and third fetuses because of the hypothetical connection between the uterine cavity, and the vagina. Established, and validated protocol for the management of the delayed delivery of the second and/or third fetuses needed, especially with the increasing incidence of multiple pregnancies, and PTL after the introduction of ART techniques.

The birth weight, and the survival rate of the second, and third fetuses increased after the conservative management.

The suggested conservative management of the delayed delivery may be associated with reduced neonatal mortalities without any maternal complications if done in a tertiary hospital with the well-equipped neonatal center.

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