

Delayed interval delivery in twin pregnancy: A case report

We present a case of delayed interval delivery in twins

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Abstract

We report a case of diamniotic, dichorionic pregnancy presented at 24 weeks with premature rupture of the first amniotic sac. Seven days later, premature labour and delivery of the first twin took place, with unfortunate outcome. The second twin was left in utero. The management included combination of tocolytics, antibiotics and cervical cerclage. Caesarean section was performed 48 days later, at 32 weeks and we delivered a live male infant, successfully. *Hippokratia* 2007; 11, (1):44-46

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The implementation of assisted reproduction during the last ten years has increased the incidence of multiple pregnancies. The unavoidable birth of one premature neonate has led our efforts to the aim of delayed interval delivery for the other twin. In some cases one or more infants must be born due to intrauterine risks or stillbirth. According to the literature there is absence of unanimity about the best management for these pregnancies. The aim of this report is to add our experience to the currently limited literature regarding the best treatment of this serious obstetrical problem. It is important to find any parameters that can predict the length of the latency period, the risk for both mother and fetus, and the outcome of these pregnancies¹⁻⁵.

Case Report

A 23 year old nullipara woman was admitted to the hospital at the 24th week of a twin dichorionic, diamniotic pregnancy because of premature rupture of the membranes of the first amniotic sac. The ultrasound examination revealed severe oligohydramnios of the first fetus and breech presentation, whereas the second one had normal amniotic fluid index and cephalic presentation. Two independent placentae were also visualised ultrasonically.

The patient was treated with bed rest, antibiotics, tocolytics and corticosteroids. Seven days later, the first, female, infant was born, weighing 570 g, but, unfortunately, died eleven days later at the Neonatal Intensive Care Unit (NICU) because of severe lung prematurity. Successful attempt was made to ligate the umbilical cord, as high in the cervix as possible, in aseptic condition, and the placenta was left inside the uterus. After the exit of the first embryo the uterine contractions ceased and a McDonald cervical cerclage was placed.

Prophylactic tocolysis was administered with salbutamol 4 mg po three times per day. Antibiotics were given in order to prevent infection: amoxicillin and clavulanic acid 500+125 mg iv three times per day, metronidazole 500 mg iv three times per day and later ticarcillin and clavulanic acid 3.2 mg iv three times per day. Two second doses of 12 mg of betamethasone were also given intramuscularly and enoxaparin 40 mg sc once daily was added. During hospitalization an oral glucose intolerance test was performed and revealed the existence of gestational diabetes. After liaising with the diabetic team, insulin was administered.

Pregnancy was terminated by caesarean section 48 days later (32nd week) due to uterine contractions and rupture of membranes. A male infant was born weighing 1360 g, with Apgar scores of 4 and 7 at 1 min and 5 min, respectively. Two placentas were born, one of which was small, fibrous and calcified, with a narrow necrotic umbilical cord. The post operative recovery of the mother was uneventful. The neonate stayed in the hospital for 35 more days and was dismissed weighing 1860 g, in excellent condition.

Discussion

According to the literature, intentional delayed delivery of the second embryo in twin pregnancies is of very rare occurrence. The increasing use of assisted reproduction techniques during the last ten years has resulted in a parallel increase of its incidence⁶. There is absence of agreement regarding the best management of these pregnancies. Each case is a unique medical situation, that must be met with the best possible solution. The use of prolonged bed rest, cervical cerclage, tocolysis, antibiotics and corticosteroids compose complex, frequently debatable issues. It is not clear whether the

management described in this case report is the most adequate treatment and if all the possibilities mentioned above are really necessary to increase the rate of success.

Antenatal complications are common during multiple pregnancies and the number of the embryos influences both their frequency and the gestational age at which they appear. The main problem appears to be preterm labor and preterm prelabor rupture of the membranes, with one condition often leading to the other. A possible reason for the premature rupture of the membranes could be an ascending infection from the vagina or the cervix into the uterine cavity^{2,4}. This tends to occur more often when there is already some degree of cervical dilatation, as in cases of cervical incompetence or increased intra-uterine pressure. Both infection and rupture of the membranes can lead to uterine contractions and subsequent delivery³.

If cervical cerclage is decided, it is advised to be done in aseptic conditions, during the first two hours after the birth of the first fetus and of course when there is no evidence of infection. Both the expediency and the effectiveness of this action is a matter of dispute among obstetricians. To avoid ascending infection, the cord of the first born twin should be ligated, with an absorbable suture, as close to the cervix as possible, under aseptic conditions. Cervical cerclage has been used with a reasonable success rate, even in widely dilated cervixes. It is recommended that women should stay in bed, for the rest of their pregnancy, although there are rare reports where patients were permitted to leave hospital under medical supervision^{6,7}. Suppression of premature contractions can be achieved with tocolytics like β -mimetics, magnesium sulfate, oxytocin-receptors inhibitor or non-steroid anti-inflammatory drugs. Tocolysis may be used precautionary after first twin's birth, or only later during uterus contractions, but never in the presence of a well established chorioamnionitis⁴.

After premature rupture of the membranes, the suspicion of an infection could be raised on the basis of a rise of the temperature, of the white blood cell count and of the C-Reactive Protein (CRP). CRP is considered as a good prognostic index for incipient chorioamnionitis^{1,2,6}. In cases of high CRP tocolysis cannot achieve pregnancy's prolongation. Both fever and hemorrhage puzzle our decision about the use of tocolysis. Administration of indomethacin could impede the diagnosis of chorioamnionitis. Antibiotics like penicillins or cephalosporins must be provided immediately after the birth of the first child. There is no unanimity about their administration. The scheme most frequently used is intravenous administration for the first three days and then oral for seven more days. In our case it is remarkable that the remaining placenta and umbilical cord of the expelled twin did not seem to initiate an intra-uterine infection. Corticosteroids can be administered, in the absence of chorioamnionitis, beneficially¹.

In reviewing the literature the aim was to summarize

the overall experience of the management and outcome of the retained fetus, in cases of twin pregnancies, after delivery of the first. In most cases the outcome of the second twin was favourable, in contrast to the bad outcome of the first twin. Survival of the first born was clearly linked to its gestational age and birth-weight. The survival of the second born was dependent upon a number of factors, including the delivery interval between the first and second twin and the presence of obstetric problems appearing during the latency period; the longer the interval, the greater was the chance for surviving. Likewise, the absence of significant obstetric problems in the latency period also improved survival. In cases where the membranes of the second twin remained intact with no evidence of ongoing labor or other obstetric risk factors, a conservative approach could be adopted^{5,8}.

Modern management procedures including tocolytics, corticosteroids, antibiotics and cervical cerclage would appear to be important in the overall success of treatment in a retained twin. Although both tocolytics and cerclage appear to prolong the mean delivery interval, no statistically significant difference was found³. There are no clear indications for the use of prophylactic cervical cerclage and it doesn't appear to improve the survival of the second twin. The use of antibiotics is widely practiced, but only after isolation of a specific pathogen in cervicovaginal secretions. Vaginal examinations should be avoided; however the length and dilatation of the cervix should be followed ultrasonographically. In this analysis there was no evidence that retention of placenta caused disseminated intravascular coagulation. Monitoring should be carried out and limited to a weekly full blood count, prothrombin time and fibrin degradation product (FDP). Even a large placental mass can be retained in the uterus and produce no demonstrable clinical symptoms³.

Attempts for delayed interval delivery should be made when the first neonate is born before the 24th week of gestation, aiming the prolongation of second twin's delivery until the 28th -32nd week^{1,2,8,9}. Continuation of the pregnancy after the 32nd week is not recommended, due to the high risk of sequels for the mother and the fetus, disproportionately to the expected benefits. In our case we applied the aforementioned surgical and pharmaceutical treatment with successful outcome, although more studies are required for better documentation.

Delayed interval pregnancy appears to be safe for the mother and salvative for the fetuses; nevertheless both parents and doctors must realize that success cannot be neither predicted, nor easily achieved.

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