

CASE REPORT

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Fetal reduction in multiple pregnancy and asynchronous delivery of the second twin

Reducción fetal en un embarazo múltiple y parto asincrónico del segundo gemelo

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ABSTRACT

Deferred delivery or asynchronous delivery is rare in multiple pregnancies. When the birth of the first twin occurs before 20-26 weeks, deferred delivery of the second twin is a therapeutic option that allows increasing the gestational age to achieve viability, pulmonary maturity and survival. A clinical case of deferred delivery of the second twin is presented, in which the first delivery was at 24+1/7 weeks and the second at 34+2/7, prolonging the pregnancy by 73 days and resulting in a preterm newborn of 2,150 g.

Key words: Pregnancy twin, Delivery, obstetric, Obstetric labor complications, Premature birth

RESUMEN

El parto diferido o parto asincrónico es poco frecuente en los embarazos múltiples. Cuando el nacimiento del primer gemelo ocurre antes de las 20 a 26 semanas, el parto diferido del segundo gemelo es una opción terapéutica que permite incrementar la edad gestacional para alcanzar la viabilidad, madurez pulmonar y la supervivencia. Se presenta un caso clínico de parto diferido del segundo gemelo, en el que el primer parto fue a las 24+1/7 semanas y el segundo a las 34+2/7 semanas de gestación, prolongando el embarazo por 73 días y teniendo como resultado un recién nacido pretérmino de 2,150 g.

Palabras clave. Embarazo gemelar, Parto obstétrico, Complicaciones del trabajo de parto, Nacimiento prematuro

INTRODUCCIÓN

Multiple pregnancies have a higher incidence in assisted reproduction treatments. When deciding on artificial insemination (AI), it is recommended to perform a mild ovarian stimulation that favors the development of one or two follicles. Likewise, in in vitro fertilization (IVF) or intracytoplasmic sperm injection (ICSI) the transfer of a single embryo is recommended to reduce the probability of multiple gestations⁽¹⁾ and maternal and perinatal morbidity and mortality⁽²⁾. These types of pregnancies usually have fetal complications associated with preterm delivery, intrauterine growth restriction, increased risk of chromosomal abnormalities, depending on the number of fetuses⁽³⁾.

The first case of delayed delivery (DD) was reported in 1880⁽⁴⁾. Today, it continues to be a challenge for obstetricians. The clinical criteria to be met by a DD are bi-chorionic diamniotic or monochorionic diamniotic twin gestation, birth of the first fetus by delivery, intact amniotic membranes of the retained fetus, absence of associated alterations such as placental abruption, placenta previa, chorioamnionitis, preeclampsia, congenital anomalies and, in addition, normal fetal well-being^(5,6).

We present the clinical case of a DD in a bi-chorionic diamniotic twin pregnancy, with the birth of the first fetus at 24+1/7 weeks of gestation and carrier of an aneuploidy, and the prolongation of the intrauterine life of the second fetus for 73 days until its birth at 34+2/7 weeks and with a birth weight of 2,150 g.



CLINICAL CASE

A 36-year-old female patient with infertility underwent assisted reproductive treatment by artificial insemination. During ovarian stimulation with gonadotrophin, she developed three follicles of 16-18 mm. The presence of two gestational sacs was observed in the uterine cavity at 6 weeks. On genetic ultrasound at 12+1/7 weeks, fetus A was located on the right maternal side and had a nuchal translucency of 3.9 mm, with high risk for aneuploidy. The nuchal translucency of fetus B, located on the left maternal side, measured 2.1 mm, normal. Due to the findings, maternal blood fetal DNA testing was requested and was positive for trisomy 21, without determining which fetus was affected with aneuploidy.

In a clinic in the United States of America, the patient underwent two amniocenteses at 20+3/7 weeks for genetic study by fluorescence in situ hybridization (FISH), the result of which was positive for trisomy 21 in fetus A (female) and normal in fetus B (male). Subsequently, and with informed consent, selective fetal reduction of the affected fetus was performed under ultrasound control with a 3.5 MHz transducer. With a 4-inch 20G needle and guidewire, 4 mL of 2 mEq/mL potassium chloride was injected into the fetal thorax, which presented asystole with no return of cardiac activity for one minute. The needle was withdrawn and the procedure was completed.

Approximately one month later, the pregnant woman attended the emergency department at 24+1/7 weeks for presenting painful uterine contractions, bleeding and loss of yellowish amniotic fluid vaginally. On gynecological examination, there was evidence of dilatation of the cervix to 3 cm and fetal parts could be seen through the cervix. The patient was informed that she was in preterm labor and the advantages of prolonging the gestation of the second twin until fetal maturation was reached. After giving her informed consent, asepsis with 1% chlorhexidine was performed in the delivery room, and a 257 g fetus was born with severe maceration. The umbilical cord was ligated with 1-0 silk threads as close to the placenta as possible. The second fetus remained in the uterine cavity.

The control abdominal obstetric ultrasound showed a fetus in breech presentation with normal well-being. By transvaginal ultrasound, the length of the cervix was 2.8 cm with dilatation of the internal cervical os, whose apex was in the cervical canal (Figure 1). Subsequent ultrasound examination showed cervical retraction, with a cervical length of 2.5 cm and the internal cervical os closed.

The patient remained hospitalized for monitoring of blood count, C-reactive protein (CRP), cultures, ultrasound, and treatment with intravenous antibiotics -cefazolin 2 g every 24 hours and clindamycin 60 mg every 12 hours-, which were suspended after 3 weeks following normalization of blood count and CRP. The highest value of leukocytes was $17.4 \times 10^9/L$ and CRP was 11.7 mg/L, which then became normal (Table 1).

When uterine contractions persisted, the tocolytic atosiban 7.5 mg/mL was administered for two cycles intravenously and nifedipine (Adalat) 10 mg every 8 hours orally was continued. Progesterone 200 mg 2 vaginal ovules were also prescribed until the end of pregnancy. For pulmonary maturation, betamethasone 12 mg intramuscularly was prescribed for two days at 24, 28 and 33 weeks.

FIGURE 1. TRANSVAGINAL ULTRASOUND AFTER DELAYED DELIVERY, AT 24 WEEKS OF GESTATION, WHERE CERVICAL WEDGE WAS EVIDENT WITH DILATION OF THE INTERNAL CERVICAL ORIFICE AND PROTRUSION OF THE MEMBRANES THROUGH THE EXTERNAL CERVICAL ORIFICE.



TABLE 1. WEEKLY AVERAGES OF C-REACTIVE PROTEIN AND LEUKOCYTES OBSERVED DURING THE LAST 10 WEEKS OF GESTATION.

	Weeks of gestation									
	24	25	26	27	28	29	30	31	32	33
C-reactive protein (mg/L)	8.9	6.9	6.9	6.6	6.1	5.0	7.9	7.0	5.6	6.0
Leucocyte count ($\times 10^9/L$)	15.9	15.1	10.9	12.8	12.3	12.9	11.8	11.9	12.9	14.0



For neurological protection, magnesium sulfate 4 g was administered intravenously. Ultrasound evaluations performed every 2 weeks showed biometry and fetal growth adequate for gestational age. The amniotic fluid index (AFI) and Doppler of the umbilical and middle cerebral arteries were normal (Figure 2). Assessment of fetal well-being by cardiotocography performed daily and then twice a week showed reactive tracings.

At 34+2/7 weeks of gestation, the fetus with normal pulmonary maturity and surgical risk, with prior informed consent, a cesarean section was scheduled, in which a premature male newborn was obtained, with Apgar 9/9 and weight of 2.150 g. The evolution of mother and baby was favorable, with no other complications and discharged on the third day.

DISCUSSION

In multiple gestations, prenatal genetic study is of great importance for the early diagnosis of aneuploidies and structural anomalies^(7,8). Likewise, the main objective of deferred delivery is to increase the gestational age of the second twin in order to increase its weight and, above all, pulmonary maturity, the most important predictor of neonatal survival. The gestational age at the time of birth of the first fetus is a determining factor in estimating the survival of the second fetus, the same which before 21 weeks equals 0%, between 21 and 24+6/7 weeks 17-33%, between 25 and 27+6/7 weeks 21-78% and after 28 weeks 100%⁽⁹⁾. Thus, DD is associated with better perinatal outcome if the birth of the first fetus is after 25 weeks. Similarly, one week of prolonged DD is associated with a birth weight gain of 115-147g^(10,11).

In the management of DD there are complications that may arise during and after the procedure, the most frequent being severe maternal morbidity in 39%, chorioamnionitis, sepsis, disseminated intravascular coagulation, placental detachment or retention in 31%, postpartum hysterectomy, among others⁽¹²⁾. Regarding cervical cerclage in patients with DD, there are controversies. Some authors indicate that it increases the risk of chorioamnionitis. However, when comparing DD groups with or without cerclage, no difference in infections has been found, and in patients with cerclage the interval between

FIGURE 2. FETAL DOPPLER ULTRASOUND OF THE UMBILICAL ARTERY AT 32 WEEKS. THE PULSATILITY INDEX (PI) WAS NORMAL.

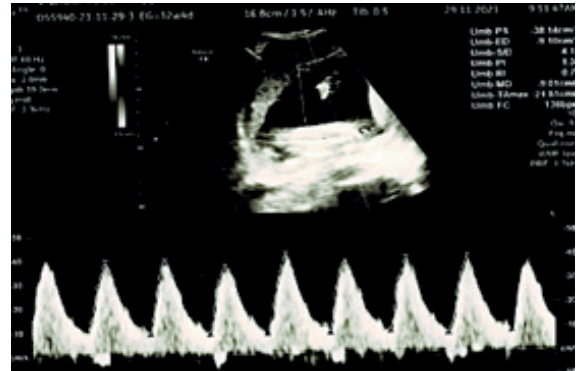
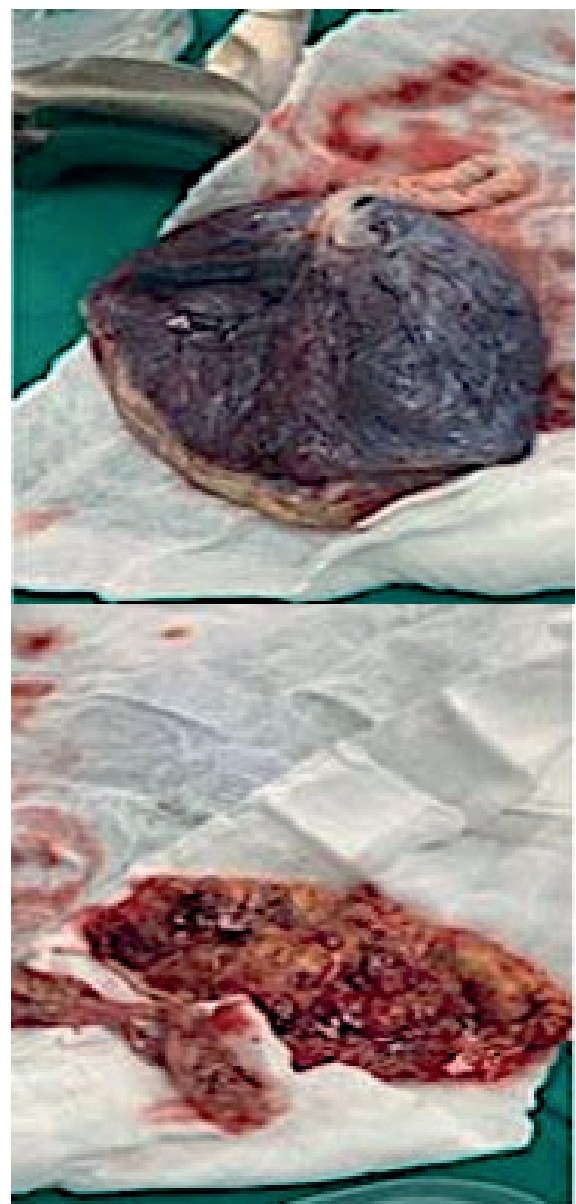


FIGURE 3. (A) PLACENTA WITH UMBILICAL CORD OF THE FETUS AT 34+2/7 WEEKS WEIGHING 450 G. (B) PLACENTA WITH SEVERE AUTOLYSIS AND WITHOUT UMBILICAL CORD OF THE FETUS AT 24+1/7 WEEKS WEIGHING 100 G.





deliveries increased⁽¹³⁾. In the present case, it was decided not to perform cervical cerclage because of the reduced dilatation and retraction of the cervix, as well as the high risk of developing chorioamnionitis due to three previous amniocentesis.

It is concluded that the low incidence of cases in which DD is performed should not be an obstacle to achieving the benefits of DD, both for the mother and the newborn. Likewise, the usefulness of prescribing tocolytics and/or antibiotics, procedures such as amniocentesis and cervical cerclage, outpatient or inpatient management should be evaluated in order to establish protocols and/or guidelines for optimal management of DD. The ideal is to avoid multiple pregnancy in AI with the development of one or two mature follicles, and in IVF and ICSI the transfer of a euploid embryo.

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