

Successful Interval Delivery With Emergency Cerclage Suture in the Postmenopausal Woman at Age of 57: A Case Report

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Abstract

Pregnancy in women with advanced maternal age following ovum donation is associated with significant maternal and fetal complications which lead to increased risks of prematurity and lower birth weight. A 57-year-old postmenopausal, nulliparous woman with dichorionic pregnancy who had conceived with ovum donation, presented with preterm labor at 26 weeks and 5 days of gestation. Following rupture of the membrane of the protruding sac and delivery of the first twin, an emergency cerclage with tocolytics, antibiotics and corticosteroid therapy was initiated in order to improve the perinatal outcome of the second twin. The cerclage suture was removed after 4 days due to increasing serum C-reactive protein levels and maternal moderate respiratory distress. Both of the neonates survived following hospitalization for 6 weeks in the neonatal intensive care unit. The management described in this case report suggest that delayed interval delivery may be safe for the mother and salvative for the fetus; but both parents and doctors must be realized about its benefits and risks.

Keywords: Delayed-interval delivery; Multiple pregnancies; Cerclage; Prematurity.

Introduction

The wide implementation of assisted reproductive technology increased the frequency of multiple gestations and the prevalence of gestations in older women [1, 2]. Pregnancy

in women with advanced maternal age following ovum donation, especially in case of multifetal gestation, is associated with significant maternal and fetal complications which lead to increased risks of prematurity and lower birth weight [3]. Most of the reported attempts to delay delivery occurred among multiple gestations in which the first twin delivered between 18 and 30 weeks of gestation; the fetuses were diamniotic and the gestational sacs of the remaining fetus / fetuses remained intact after the first delivery; and there was an absence of fetal distress, placental abruption, intra-amniotic infection, or a maternal indication for delivery [4]. Information on delayed interval delivery has been available only from sporadic case reports and some retrospective trials most of which show improved outcome for the second fetus.

We report a case of delayed delivery of an in vitro-fertilized (IVF) twin pregnancy with ovum donation in a postmenopausal woman.

Case Report

A 57-year old nulliparous postmenopausal woman, gravida 3, abortus 2, para 0, who was conceived with intra-cytoplasmic sperm injection (ICSI) of three donated ova presented with an increased systemic blood pressure of 160/100 mm Hg, with two separate readings taken at least 4 hours apart, at 26 weeks 5 days of gestation according to the day of embryo transfer. The ultrasound examination revealed a diamniotic twin pregnancy of around 26 weeks of gestation without any growth discordance and two placenta located separately. Complete blood count, serum electrolyte, blood urea nitrogen (BUN), creatinine, liver enzyme and bilirubin levels were all within the normal ranges except for urine dipstick test which resulted in +1 proteinuria. The patient was hospitalized for blood pressure monitorization and 24-hour urinary collection which later revealed a mild proteinuria of 506 mg/dL. Following conception, the patient had been on empirical therapy with acetylsalicylic acid 100 mg/day, nadroparine calcium (0.3 mL/day, 2,850 IU anti-Xa) and per oral micronized progesterone 100 mg, three times a day. Her past medical history revealed goitrous hypothyroidism which necessitated levothyroxine replacement therapy.

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With the diagnosis of early-onset mild preeclampsia, the patient was consequently decided to be started on methyl-dopa treatment, 250 mg/tid and kept under closed surveillance at the hospital. After 4 days of her admission, the patient complained with the symptom of vaginal fluid leakage. Sterile vaginal examination was revealed a cervical dilatation of 2 cm. with pooling of amniotic fluid in the posterior vaginal fornix and no uterine contraction was detected upon cardiotocographic tracing. The patient was treated with systemic ampicillin plus sulbactam 4 g i.v. per day among with single course betamethasone therapy (2×12 mg/day applied 24 hours apart). Following 24 hours of the preterm premature rupture of membranes (PPROM), the patient went into active labor which resulted in delivery of the first male twin who weighed 1,035 grams and was transferred to neonatal intensive care unit (NICU). Following the delivery of the first twin, the remaining fetus showed no clinical signs of fetal distress. Hence, the option of an emergency (heroic) cerclage was discussed with the patient. Following the patient's consent, a successful attempt was made to ligate the umbilical cord, as high in the cervix as possible, in an aseptic condition, and the placenta was left inside the uterus. A total of 30 mg nifedipine was introduced sublingually every 15 minutes until the uterine contractions ceased and a McDonald cerclage was placed at the level of the internal cervical ostium following vaginal antisepsis, reduction of the amniotic membranes with the aid of sterile, wet sponge application and placing the patient in Trendelenburg position. Tocolysis was maintained with oral nifedipine 60 mg/day. Antibiotics were given in order to prevent infection: i.v. ampicillin plus sulbactam 4 g/day and i.v. metronidazole 500 mg three times per day. The patient was then monitored closely for clinical signs of chorioamnionitis such as uterine pain on palpation, increased white blood cell count, erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP). Six hours after the heroic cerclage, the patient revealed moderate dyspnea and orthopnea. She also confessed that she had had some cardiac problems; thereby she was investigated thoroughly for any acute or chronic cardiopulmonary medical conditions which revealed no pathologic signs upon electrocardiogram (ECG), echocardiography (ECHO), chest X-ray, serum D-dimer, creatin kinase-myocardial band (CK-MB) and troponin C levels and arterial blood gas analysis. However, the patient was started on enoxaparin sodium 0.6 mL/day therapy empirically. The patient's respiratory distress deteriorated with moderately increased CRP levels (15 mg/dL). After discussing with the couple, they opted for removal of the cervical stitch. Consequently, the cerclage was removed four days after its application and the cervix reached full dilatation in 2 hours thereafter. The second female fetus was delivered weighing 960 g and was transferred to NICU. Postpartum maternal course was uneventful without any signs of puerperal infection and her respiratory distress improved dramatically following delivery of the second twin. The neonates

were discharged from NICU 14 days later and from the neonatal care unit 4 weeks later. Upon 6 months of follow-up, they are thriving well with no signs of neurological deficit.

Discussion

There is absence of agreement regarding the best management of delayed delivery of the second embryo in twin 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 are frequently debatable issues. The use of cervical cerclage to prevent preterm birth in patients with incompetent cervix has been an issue of continuing debate. Evidence from randomized clinical trials remains equivocal and there is no consensus for performing cerclage to achieve delayed-interval delivery [5]. A review reported of 21 patients with expectant management and 20 patients in whom cerclage was used and found the outcomes were similar [6]. However some authors suggest cervical cerclage in order to protect the fetal membranes from being exposed to vaginal bacteria and acidity [7], some authors advocate avoiding the cerclage in this situation as it represents a high risk of infection [8]. 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. 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. Antibiotics like penicillins or cephalosporins must be provided immediately after the birth of the first child. Emergent cervical cerclage was performed right after the delivery of first fetus in our case because of complete cervical dilatation. An appropriate multiple antibiotics treatment was used her management.

Suppression of premature contractions can be achieved with tocolytics like β -mimetics, magnesium sulfate, oxytocin-receptors inhibitor or nonsteroid anti-inflammatory drugs. Corticosteroids can be administered for fetal pulmonary maturation, in the absence of chorioamnionitis.

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 is considered as a good prognostic index for incipient chorioamnionitis. In cases of high CRP tocolysis cannot achieve pregnancy's prolongation. Both elevated C-reactive protein and progressive uterine contraction in our case; we decided to remove cerclage suture and stop the tocolysis because of the risk of chorioamnionitis.

Perinatal and infant mortality rates in first and second twins were derived in relation to delayed interval delivery. Especially delayed delivery of the remaining fetus before 30 weeks of gestation for 2 or more days was associated with

improved infant survival and higher infant birth weight [9]. A large number retrospective study showed perinatal outcomes for second twins were improved when the first twin was delivered at 22 to 23 weeks and delivery of the second twin was delayed by up to 3 weeks [10]. Interestingly their data showed that perinatal and infant mortality was reduced in second twins when the first twin was delivered at 24 to 28 weeks, this reduction in mortality was not statistically significant when compared with pregnancies in which both twins were delivered contemporaneously. Our decision was to delay the delivery of second twin with tocolysis and cervical cerclage in order to achieve fetal lung maturation with corticosteroids.

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. 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. Delayed interval delivery may be safe for the mother and salvative for the fetus; but both parents and doctors must be realized about its benefits and risks.

References

1. National Center for Health Statistics Monthly vital statistics reports. Public Health Service. 1999; 41. Hyattsville, MD.
2. Ventura SJ, Martin JA, Curtin SC, Menacker F, Hamilton BE Births: final data for 1999. Nat Vit St Rep 2001; 49:3-10.
3. Simchen MJ, Shulman A, Wisner A, Zilberberg E, Schiff E. The aged uterus: multifetal pregnancy outcome after ovum donation in older women. Hum Reprod. 2009;24(10):2500-2503.
4. Farkouh LJ, Sabin ED, Heyborne KD, Lindsay LG, Porreco RP. Delayed-interval delivery: extended series from a single maternal-fetal medicine practice. Am J Obstet Gynecol. 2000;183(6):1499-1503.
5. Rust OA, Atlas RO, Jones KJ, Benham BN, Balducci J. A randomized trial of cerclage versus no cerclage among patients with ultrasonographically detected second-trimester preterm dilatation of the internal os. Am J Obstet Gynecol. 2000;183(4):830-835.
6. Jenkins CB, Ghidini A, Eglinton GS Delayed delivery of the second twin: watchful waiting or rescue cerclage? Contemp Obstet Gynecol 1997; 31:138-147.
7. Arias F. Delayed delivery of multifetal pregnancies with premature rupture of membranes in the second trimester. Am J Obstet Gynecol. 1994;170(5 Pt 1):1233-1237.
8. Van der Straeten FM, De Ketelaere K, Temmerman M. Delayed interval delivery in multiple pregnancies. Eur J Obstet Gynecol Reprod Biol. 2001;99(1):85-89.
9. Zhang J, Hamilton B, Martin J, Trumble A. Delayed interval delivery and infant survival: a population-based study. Am J Obstet Gynecol. 2004;191(2):470-476.
10. Oyelese Y, Ananth CV, Smulian JC, Vintzileos AM. Delayed interval delivery in twin pregnancies in the United States: Impact on perinatal mortality and morbidity. Am J Obstet Gynecol. 2005;192(2):439-444.