

## ПРИКАЗ НА СЛУЧАЈ

## УСПЕШНО ОДЛОЖУВАЊЕ НА ПОРОДУВАЊЕТО НА ВТОРИОТ БЛИЗНАК ПО РАНА РУПТУРА НА ПЛОДОВИТЕ ОБВИВКИ КАЈ ПРВИОТ БЛИЗНАК: ПРИКАЗ НА СЛУЧАЈ

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Близначките бремености се високоризични бремености придружени со многубројни компликации, како: спонтан абортус, предвремно прскање на плодите обвивки, предвремно породување, интраутерина смрт на едниот или двата близнака и др. Не постои консензус како да се постапува кај близначки бремености комплицирани со предвремно прскање на плодите обвивки на едниот близнак и ризик од предвремно породување. Овие случаи се ретки во литературата. Ние презентираме случај на пациентка на 35 годишна возраст, хоспитализирана во установа од терциерно ниво, заради биамнијална бихоријална близначка бременост комплицирана со предвремно прскање на воденикот на првиот близнак во 19-та гестациска недела. Пред 16 години пациентката има едно породување со царски рез. Во консултација со пациентката следеше индукција на породувањето со породување на првиот близнак, мртов машки плод. Потоа беше ординирана антибиотска и токолитична терапија и пациентката беше задржана во болница уште една недела. Пациентката беше пуштена дома со редовни контроли на нејзината состојба и состојбата на плодот. Пациентката беше повторно хоспитализирана во 33-та гестациска недела со утерини контракции на кардиотокографија. По ординирање на кортикостероидна терапија за фетално белодробно зреење таа спонтано предвремно го породила вториот близнак, во добра кондиција и истиот беше испишан од болница по 16 дена. Кај близначките бремености докторите треба да размислуваат за одложување на интервалот на породување на вториот близнак, по породувањето на првиот близнак, со цел да му ги зголемат шансите за преживување, особено за бременостите помали од 30-та гестациска недела.

## CASE REPORT

## SUCCESSFULLY DELAYED DELIVERY OF SECOND TWIN AFTER EARLY SECOND TRIMESTER RUPTURE OF MEMBRANES OF THE FIRST TWIN: A CASE REPORT

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## Abstract

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**Key words:** preterm delivery, preterm premature rupture of the membranes, twin pregnancy.

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Twin pregnancies are high-risk pregnancies accompanied with multiple complications, such as: spontaneous abortion, preterm rupture of the membranes, preterm delivery, intrauterine death of one or both twins etc. There is no consensus about the management of twin pregnancies complicated with preterm rupture of the membranes of one twin and risk of preterm delivery. These cases are rarely found in the literature. We present a case of a 35 years old patient, hospitalized in a tertiary level institution, because of a diamniotic dichorionic twin pregnancy complicated with preterm rupture of the membranes of the first twin at 19 weeks of gestation. She had one delivery with Caesarean section 16 years ago. In consultation with the patient induction of labor was done with delivery of the first twin, a death male fetus. After that, antibiotics and tocolytic therapy were administrated and the patient remained in the hospital about one week. The patient was discharged at home with regular control of her condition and condition of the fetus. The patient was again hospitalized at 33 weeks of gestation with uterine contractions on cardiotocography. After administration of corticosteroid therapy for fetal lung maturation she delivered spontaneously the second twin in a good condition and she was discharged from hospital after 16 days. In twin pregnancies clinicians must think about delayed interval delivery of the second twin, after delivery of the first twin, with an aim to increase chances for survival, especially for pregnancies less than 30 weeks of gestation.

## Introduction

Improvement of techniques for assisted reproduction and ovulation induction has increased the incidence of multiple pregnancies especially twin pregnancies. These pregnancies have many complications, such as: spontaneous abortion, preterm premature rupture of the membranes (PPROM), preterm delivery, intrauterine death of one or both twins etc. Preterm birth occurs in about 10-15% of all deliveries and is one of the leading causes for neonatal morbidity and neonatal mortality. Preterm rupture of the membranes is defined as spontaneous rupture of membranes before 37 weeks of gestation and is the cause for about one third of all preterm births<sup>1,2</sup>.

There is no appropriate management of PPRM before 34 weeks of gestation and, hence some obstetricians use active and other conservative approaches by using antibiotic therapy and corticosteroids. The situation is very difficult in cases with twin or multifetal pregnancies<sup>3</sup>.

Most twin pregnancies complicated by a very early rupture of the membranes result in spontaneous delivery of both fetuses after a short latency period. According to the literature, delayed delivery of the second twin after delivery of the first twin is a very rare occurrence. There is absence of agreement for the best management of these pregnancies. Different treatment modalities are proposed in these situations, such as: prolonged bed rest, cervical cerclage, tocolysis, antibiotics and corticosteroids. However, it is not clear which of them is the adequate treatment. In cases where cervical cerclage is decided, it is important to be done in aseptic condition. It is recommended to ligate the cord of the first born twin near the cervix with an absorbable suture. After cer-

clage, antibiotics and tocolytics must be given to the patient during the next week. Women are recommended to stay in bed. After premature rupture of the membranes, maternal vital signs and inflammatory markers (white blood cell count and C-reactive protein) have to be evaluated by obstetricians on a daily basis for diagnosis of chorioamnionitis. Ultrasound scan has to be performed once a week and cardiotocography (CTG) every day in order to assess the status of the fetus. Suppression of premature contractions can be achieved with tocolytics like  $\beta$ -mimetics, magnesium sulfate or nonsteroid anti-inflammatory drugs.

In cases with diagnosed chorioamnionitis (maternal body temperature  $\geq 38^{\circ}\text{C}$ ; maternal tachycardia  $\geq 110$  beats/min; elevated CRP, leukocytosis  $\geq 15,000$  cells/mm<sup>3</sup>), and maternal or fetal indications for delivery, or gestation reached 34 weeks, induction of labor or a Cesarean delivery are options for treatment.

In most cases, survival of the first born twin has been associated with gestational age and birthweight. The survival of the second born twin depends on many factors, including delivery interval between the first and the second twin and obstetrics problems during the latency period. In cases with longer delayed interval delivery of the second twin the chances for survival are greater<sup>4,5</sup>.

On the other hand, delivery is recommended in cases with PPRM at or beyond 34 weeks of gestation. Couples have to be informed about complications related to prematurity: hypoplastic lungs, respiratory distress syndrome (RDS), intraventricular hemorrhage, necrotizing enterocolitis, neonatal sepsis, cerebral palsy, prolonged stay in the neonatal intensive care unit and long term out-

comes. PPRM is responsible for 30% of the neonatal morbidity and mortality in premature births. Therefore, appropriate management of PPRM is important for improving of neonatal and maternal outcomes<sup>6</sup>.

### Case report

We present a case of a 35 years old patient, admitted to the University Clinic for Gynecology and Obstetrics in Skopje at 19 weeks of gestation with dichorionic diamniotic twin pregnancy because of premature rupture of membranes of the first twin. She had one child born with Caesarean section sixteen years ago. This pregnancy was spontaneous and was followed-up by her gynecologist.

On ultrasound examination anhydramnion on the first twin and normal amniotic fluid index (AFI) in the second twin were found and ultrasound parameters were normal for both twins. On gynecological examination with sterile speculum cervix was opened and amniotic fluid was present. At the same time, serum inflammatory markers were increased and antibiotics were prescribed. The couple was informed by obstetricians about the adverse outcomes of premature delivery of the twins and they chose induction with vaginal application of tablete Prostin E2 and infusion with Oxytocin. After that the pregnant woman had spontaneous vaginal delivery of a death male infant at 19 weeks of gestation and no resuscitation was initiated. After delivery of the first twin, the umbilical cord was ligated in the vagina. The patient and her husband were informed about the options for the second twin and the family decided for delayed-interval delivery of the second twin. She stayed in the hospital several days and received

antibiotics and tocolytic therapy. The patient was discharged from hospital for close outpatient management at 20 weeks of gestation with closed cervix, normal amniotic fluid index (AFI) and absence of fetal malformations on echosonography of the second twin. Serum inflammatory markers (serum C-reactive protein-CRP and white blood cells count) were normal.

She came for check-up again at 23 weeks of gestation at the University Clinic for Gynecology and Obstetrics in Skopje. Cervix length was satisfactory (38mm). On ultrasound examination the fetus growth was normal for 23 weeks of gestation, without fetal malformations, with normal AFI. Serum inflammatory parameters of the patient were normal.

The patient was admitted at 33 weeks of gestation in the Intensive care obstetrics unit of the University Clinic for Gynecology and Obstetrics in Skopje with signs for premature delivery. The cervix was opened about 3 cm and the patient had uterine contractions on cardiotocography. Corticosteroids were prescribed for fetal lung maturation. She delivered spontaneously healthy girl with birthweight of 1940 gr and birthheight of 45cm, with Apgar scores 7 and 8 at 1 and 5 min, respectively.

The patient was discharged from hospital the next day after delivery in a good condition. The neonate stayed at the intensive care unit of the Clinic and was discharged after 16 days in a good condition.

### Discussion

PPROM is one of the main reasons for preterm delivery and increased maternal and neonatal morbidity and mortality.

One of the reasons for PPROM is vaginal infection. Another one is cervical incompetence. Therefore, a careful follow-up of patients with twin or multiple pregnancies is necessary to avoid these complications.

There is no consensus about situations with PPROM and twin pregnancy in the second trimester of pregnancy. In one study presented by Hsieh Y. et al. with 131 singleton and 48 twin pregnancies complicated with PPROM, the latency period in both groups for gestational age smaller of 30 weeks of gestation were statistically similar ( $4.4 \pm 3.3$  vs.  $3.4 \pm 2.9$  days). For gestational age of 30 weeks and more, the latency period from PPROM to delivery was shorter in twins than in singleton pregnancies<sup>7</sup>. According to literature in cases with monochorionic diamniotic twin pregnancy there are small chances to delay delivery of both twins. In these cases if the first twin is born peri-viable, the obstetricians can try to delay delivery of the second twin with improved outcome<sup>8</sup>. In cases with diamniotic dichorionic twins it is possible to delay delivery after administration of antibiotics of broad spectrum and corticosteroids for lung maturation, but this delay of delivery maybe several days to week. We present an original case where we succeeded to delay the delivery of the second twin for almost 14 weeks after delivery of the first twin hence the second twin was born in a good condition and survived. In the literature only several similar cases have been reported. Klearhou N. et al. reported a case of diamniotic, dichorionic pregnancy complicated in 24 weeks of gestation with a premature rupture of the first amnion sac. After seven days, the first twin was delivered with unfortunate outcome. The second twin was left in womb. Antibiotics, tocolytics and cervical cerclage were applied.

Caesarean section was performed 48 days later, at 32 weeks of gestation and a live male infant was delivered and he survived<sup>9</sup>. One similar case in the literature was reported by Yousef et al. in 2018, who reported successful 19-weeks delayed-interval delivery following initial delivery of the presenting twin at 19 weeks of gestation<sup>10</sup>.

In our case with diamniotic dichorionic twin pregnancy, complicated with premature rupture of the first amniotic sac, we succeeded to delay the delivery of the second twin after delivery of the first twin at 19 weeks of gestation for 14 weeks and terminated pregnancy with a spontaneous delivery of the second viable twin.

All these cases have to be carefully monitored and delivered in a tertiary level institution with the highest level of care for both, the mother and the newborn.

## Conclusions

Twin pregnancies are high-risk pregnancies accompanied with multiple complications, such as: spontaneous abortion, preterm rupture of the membranes, preterm delivery, intra-uterine death of one or both twins etc. There is no consensus about the management of twin pregnancies complicated with a preterm premature rupture of the membranes and risk of preterm delivery.

Clinicians have to think about delayed interval delivery of the second twin, after delivery of the first twin, with an aim to increase chances for survival of the second twin, especially in pregnancies less than 30 weeks of gestation. Weeks of gestation at preterm rupture of membranes and latency period from delivery of the first twin to delivery of the second twin are associated with neonatal morbidity and

mortality. Conservative approach can prove beneficial in cases with twin pregnancy and preterm premature rupture of the membranes at pregnancies less of 30 gestational weeks.

## References

1. Martin JA, Kung HC, Mathews TJ, et al. Annual summary of vital statistics. *Pediatrics* 2008; 121: 788-801.
2. Trentacoste SV, Jean-Pierre C, Baergen R, et al. Outcomes of preterm premature rupture of membranes in twin pregnancies. *J Matern Fetal Neonatal Med* 2008; 21(8): 555-557.
3. Yu H, Wang X, Gao H, et al. Perinatal outcomes of pregnancies complicated by preterm premature rupture of the membranes before 34 weeks of gestation in a tertiary center in China: a retrospective review. *Bio Science Trends* 2015; 9(1): 35-41.
4. Zajicek M, Yagel S, Ben-Ami M, et al. Outcome of Twin Pregnancies complicated by early second trimester rupture of membranes in one sac. *Twin Res Hum Genet* 2010; 13(6): 604-608.
5. Zhang J, Hamilton B, Martin J, et al. Delayed interval delivery and infant survival: a population-based study. *Am J Obstet Gynecol* 2004; 191(2): 470-6.
6. The Practice Committee of the American Society for Reproductive Medicine. Multiple pregnancy associated with infertility therapy. *J Fertil Steril* 2004; 82(1): 153-157.
7. Hsieh Y, Chang C, Tsai H.D. et al. Twin vs. Singleton Pregnancy. Clinical characteristics and latency periods in preterm premature rupture of membranes. *J Reprod Med* 1999; 44(7): 616-620.
8. Baltus T, Martin L.M. Successful delayed-interval delivery in monochorionic diamniotic twin pregnancy: A case report. *Case Rep Women's Health* 21(2018) e00093 [www.elsevier.com/locate/crwh](http://www.elsevier.com/locate/crwh).
9. Klearhou N, Mamopoulos A, Daniilidis A, et al. Delayed interval delivery in twin pregnancy: A case report We present a case of delayed interval delivery in twins. *Hippokratia* 2007; 11(1): 44-46.
10. Yousef WS, Sabr Y. Delayed interval delivery and chorionicity. *Int Ann Med* 2018; 2(5).