Abstract Two multiple pregnancies with delayed delivery after expulsion of dead fetus are presented. Case 1: A woman with a twin pregnancy and one intrauterine fetal death at 20 weeks’ gestation delivered a dead fetus at 27 weeks’ gestation. She delivered a healthy male infant weighing 2430 g at 33 weeks’ gestation (42 d after the delivery of the first twin). Case 2: A woman with quadruplets pregnancy (2 live fetuses, one empty sac, and one fetocide at 7 weeks’ gestation) got a intrauterine fetal death at 21 weeks’ gestation at one fetus among 2 live fetuses and delivered a dead fetus at 24 weeks’ gestation. She delivered a healthy female infant weighing 2110 g at 33 weeks’ gestation (58 d after the delivery of a dead fetus). On the basis of our experience and the review of literature, delayed delivery with careful observation of fetal and maternal condition is recommended for improved survival and decreased morbidity among latter-born siblings.

Key words Delayed interval delivery · Multiple pregnancy · Twin pregnancy

Introduction

The incidence of multiple pregnancies has increased since introduction of assisted reproductive techniques. Patients with multiple pregnancies are at risk of preterm labor and delivery with the associated high perinatal mortality and morbidity. Delivery of the initial fetus in a multiple gestation is usually followed by delivery of the subsequent fetus or fetuses shortly thereafter. It is rare to observe a prolonged interval between the delivery of the fetuses from a multiple pregnancy and to observe a survivor.

We report 2 cases of multiple gestations with successful delayed interval delivery of 42 and 58 d, respectively. When unaware of this possibility aggressive attempts to effect delivery may jeopardize the survival of the remaining infants.

Case report

Case 1

A 32-year-old woman, para 0-0-0-0, with a known twin pregnancy and intrauterine fetal death of the first twin at 20 weeks of gestation was admitted at 27 weeks’ gestation because of regular uterine contractions. The current pregnancy was gotten by using clomiphene and intrauterine insemination. The second twin showed normal ultrasonographic findings including normal size and normal amniotic fluid volume. The dead first twin was located in the lower part of uterus with protruding amniotic sac into the upper vaginal canal. The cervix was not dilated and not effaced. Serial platelet counts, fibrinogen, fibrin degradation products, prothrombin time, partial thromboplastin time, C-reactive protein, and complete blood counts showed normal level. Tocolysis was started with disappearance of uterine contraction. 6 d after admission (27 weeks and 6 d) the membranes were ruptured and she delivered a dead fetus weighing 60 g. The patient heard from a doctor of local clinic that one fetus was 4 weeks smaller than corresponding gestational age at 19 weeks’ gestation. The umbilical cord was ligated with chromic catgut and cut as close as possible to the cervix. The placenta was retained within the uterus. Dilatation and effacement of the cervix was tenuous without cervical cerclage.

Prophylactic ampicillin-sulbactam was given for 7 d and intravenous ritodrine was given for 5 d followed by oral ritodrine. Vaginal culture obtained after delivery and subsequent vaginal smears were nonspecific. There was no fever and no other laboratory evidence of infection. Weekly dexamethasone was administered until 32 weeks of gestation.

At 33 weeks and 6 d (42 d after the delivery of the first twin) she began spontaneous labor and underwent a vaginal delivery of a 2430 g male with Apgar scores of 9 and 10 at 1 and 5 min, respectively. A monochorionic and diamniotic placenta was delivered spontaneously weighing 600 g. The infant’s follow-up showed a normal development at 7 months of life except a small atrial septal defect of the heart.
Case 2

A 34-year-old woman, para 0-0-0-0, was referred to our clinic at 11 weeks and 3 d because of quadruplets pregnancy. She got a current pregnancy by in vitro fertilization. An ultrasonogram revealed 2 live fetuses, one dead fetus due to selective reduction at 7 weeks, and one empty gestational sac and showed 2 placentas.

On the ultrasonogram at 23 weeks and 3 d one fetus among 2 live fetuses showed no heart beat and oligohydramnios with femur length consistent with 21 weeks. But a live fetus revealed normal growth and 22 cm of amniotic fluid index with intact sac. She was admitted to hospital at 24 weeks and 1 d because of profuse, brownish vaginal discharge. Rupture of the membranes was diagnosed. Intravenous ampicillin was given for 5 d and then oral erythromycin was given. 5 d after admission (24 weeks and 6 d) a 260 g dead fetus was delivered. The umbilical cord was ligated with chromic catgut at the level of the cervix. Conservative management was undertaken after discussion with patient and her husband and prophylactic tocolytics and antibiotics were maintained. Cervical cerclage was not applied. We closely monitored her temperature, pulse rate, white blood cell count, and C-reactive protein with no clinical or bacteriological evidence of infection. The cervix at discharge from hospital at 30 weeks and 1 d was soft, tip-finger dilated, and slightly effaced.

Follow-up ultrasound examinations revealed continued normal fetal growth. At 33 completed weeks she was admitted again because of regular uterine contractions and genital spotting. 1 d after admission (58 d after delivery of dead fetus) she delivered a 2110 g female infant with Apgar scores of 8 and 9 at 1 and 5 min, respectively. After active management terminated because of the traditional belief that a poor survival of the second twin. But Oddvar et al. [4] reviewed reports of 21 patients with expectant management and 20 patients in whom cerclage was used and found the outcomes were similar. Cervical cerclage was not performed in our 2 cases. Dilatation of cervix after the delivery of dead fetus was tenuous because the weight of dead fetus was only 60 g and 260 g, respectively.

The need to monitor maternal coagulation status in the presence of retained products of conception is well documented [13]. We monitored serially prothrombin time, partial thromboplastin time, platelet counts, fibrinogen and fibrinogen degradation product without abnormal findings.

Patients with multiple pregnancies are at risk of preterm labor and delivery with the associated high perinatal mortality and morbidity. Spontaneous rupture of the membranes of one sac in a twin pregnancy followed by the birth of the first twin usually results in the pregnancy being terminated because of the traditional belief that a poor outcome is certain. In 1880 Carson published the first case twin born with an interval of 44 d [6]. Since that time an interest has developed in intentionally prolonging the interval between deliveries, with the purpose of maintaining gestation for the remaining premature fetus [3, 4, 11, 12].

The natural history of second trimester premature rupture of membranes in multifetal pregnancy results in delivery of all the fetuses after relatively short latency period although occasionally contractions cease after the birth of the first infant [2, 4]. Multiple therapies such as bed rest, cervical cerclage, tocolysis, prophylactic antibiotics, and corticosteroids have been used at delayed delivery of multifetal pregnancies. In 1994, Kalchbrenner et al. [8] established criteria for candidacy and a protocol for delayed delivery. All patients who met the following criteria were considered to be candidates;

(1) Multiple gestation with delivery of the first fetus occurring between 18 and 28 weeks gestation.
(2) Diamniotic relationship between the initial and subsequent fetus or fetuses.
(3) Intact membranes in the maintaining gestational sac or sacs.
(4) Absence of fetal distress, abruptio placenta, intraamniotic infection or medical indication for delivery.

In our cases, intrauterine death in one fetus was occurred at 20 weeks and 21 weeks, respectively, and dead fetus was delivered at 27 weeks and 24 weeks, respectively. In our cases, intrauterine death in one fetus was occurred at 20 weeks followed by delivery of a dead fetus at 27 weeks in case 1 and fetal death at 21 weeks followed by delivery of a dead fetus at 24 weeks in case 2.

Prophylactic use of antibiotics is controversial because the available data are insufficient to determine its usefulness. According to Long et al. [9] and Aris et al. [4], prophylactic antibiotics were prescribed after rupture of membranes of the first twin to discourage the development of chorioamnionitis which would have jeopardized the survival of the second twin. But Oddvar et al. [10], prophylactic use of antibiotics is not recommended. We used prophylactic antibiotics.

The use of cervical cerclage in these circumstances is very contradictory question as PROM itself represents a high risk of infection [9, 12, 15]. Some authors suggest cervical cerclage in order to protect the fetal membranes from being exposed to vaginal bacteria and acidity [3, 5]. Jenkins et al. [7] reviewed reports of 21 patients with expectant management and 20 patients in whom cerclage was used and found the outcomes were similar. Cervical cerclage was not performed in our 2 cases. Dilatation of cervix after the delivery of dead fetus was tenuous because the weight of dead fetus was only 60 g and 260 g, respectively.

The literature on prophylactic and therapeutic tocolysis for delaying the delivery of the second twin is contradictory. According to the review by Abbound et al. [11] prophylactic tocolysis was administered in 23 patients among 25 (92%) with a variety of drug for a variable length of time. According to the review by Wittmann et al. [14], on the other hand, labor ceased spontaneously after delivery of the first twin, without the use of tocolysis in all the case reports and so they did not recommend tocolysis. We used tocolytics of ritodrine and/or magnesium sulfate in both cases.

On the basis of our experience and the review of literature, delayed delivery with careful observation of fetal and maternal condition is recommended for improved survival and decreased morbidity among latter-born siblings.