

Successful Conservative Management of Premature Rupture Membranes of Twin Pregnancy with one Fetus Papyraceus

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Abstract

Fetus papyraceus is a rare obstetrics complication and is characterized by the death of one or more fetuses in the early gestation period, and the other fetus continues to develop. This report describes a twin pregnancy with one fetus papyraceus and both undergone premature membrane rupture. We reported a 25-year-old woman unbooking patient admitted to the Pusura hospital with a complaint of amniotic fluid leaking from the vagina after a traffic accident. The patient is a woman with a history of G2P1A0 at 22-week gestation with twin pregnancies (monochorionic diamniotic twin pregnancy). There was one live fetus with cephalic presentation and the other one was papyraceus. Conservative management with a corticosteroid regimen to complete the lung maturation was done. At 32-week gestation, the patient was admitted back with spontaneous rupture membranes and the live fetus was seen in lie presentation. She underwent a caesarian section and a premature life female baby was delivered with 1800g of weigh, APGAR score of 7 at 1 minute and 8 at 5 minutes. The fetus papyraceus was weighed 100g. Both the mother and the baby were discharged home in good condition. Fetus papyraceus is a rare condition that describes intrauterine fetal demise in early pregnancies. It can occur in both single or multiple gestation pregnancies. This case report reported case is a premature rupture of the membranes caused by a traffic accident. A life baby weighing 1800g was delivered and 100g of weigh of fetus papyraceus in a caesarian section. This case is a diamniotic – monochorionic placenta. Finally, the healthy baby was discharged 18 days after delivery.

Keywords: *twin pregnancy, fetus papyraceus, premature rupture membranes.*

Introduction

Increased use of Assisted Reproductive Techniques in obstetrics gynecology procedures in recent decades is followed by the rising incident of multiple pregnancies and fetus papyraceus^[1]. Intrauterine fetal death of one twin is a relatively frequent complication of twin pregnancy and the single intrauterine fetal death rate in multiple pregnancies is significantly higher than that in singleton. This condition can be found in 2.7% of twin pregnancies and 4.3% of triple pregnancies^[2].

Usually, when the fetus dies in early pregnancy, the amniotic fluid and placental tissue are absorbed and the fetus is compressed in between the membranes with the co-living twin^[3].

Premature rupture of membranes (PROM) is a frequent phenomenon that occurs in about 4-7% of pregnancies. Almost two thirds of PROM are spontaneous. The common risk factors are young mothers, multiple pregnancies, genital tract infection, and previous preterm delivery^[4].

Here we report a case of fetus papyraceus in twin pregnancy with premature rupture of the membranes, which was diagnosed at the 22nd week of gestation. Conservative management was done, and the live baby was born at 32 weeks (1800g) by cesarean section in the

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indication of premature rupture of the membranes and lie presentation of the fetus.

Materials and Methods

Case Report

A 25-year-old woman (G2P0A1) was admitted to the hospital with complaints of amniotic fluid leakage after a traffic accident approximately one hour before admission. Physical examination found a normal blood pressure (120/70 mmHg) and a good general health status, with no fever (37°C). Gynecology examination with a sterile speculum in the labor ward revealed dark brown amniotic fluid. While, abdominal ultrasound showed one fetus in cephalic presentation with cardiac activity and active fetal movements, and under the life, a baby has seen an irregular form or compressed of the fetus. The amniotic fluid of the life baby was in normal volume (AFI=10), but the other one appeared to have an extremely minimal amniotic fluid. Both amnions are separated by the amniotic membranes and there was only one placenta insertion in the corpus position. Thus, we came up with the diagnosis of monochorionic diamniotic twin pregnancy at 22 weeks gestation. According to the anamnesis, one month ago she had undergone an ultrasonography examination and both babies were in normal condition at 18 weeks of gestation. After the accident, the family of the patient was counselled about the condition and the risks that could affect the patient and the fetus if the pregnancy is to be continued. The patient agreed on doing conservative management with a corticosteroid regimen to complete the lung maturation was done. Sonography was planned to be done every three weeks and coagulation profile every fortnight. After the lung maturation management, the patient regularly came to the outpatient clinic for a check-up once every 3 weeks. During the first appointment, the life baby was seen to be in normal condition (25 weeks) and the other fetus (fetus papyraceus) was seen with extreme oligohydramnios.

At 32 weeks gestation, the patient was admitted to the hospital (Emergency Obstetrics and Gynecology Department) due to vaginal discharge of clear fluid (hydroreha) with no uterine contractions and bleeding. The general condition was within normal limits. Abdominal ultrasonography showed the life fetus in lie position, normal fetal heart rate (FHR), normal placental

insertion on the upper posterior side, AFI= 8, and the obstetric examination indicated 32 weeks + 2 days of gestation. A small fetus papyraceus was seen pressed flat against the uterine wall and the living fetus. Speculum examination revealed the release of clear amniotic fluid. Emergency caesarean section was performed: A premature life female baby was delivered with a weight of 1800g, APGAR score of 7 at 1 min and 8 at 5 mins, followed by a small papyraceus baby and the placenta. The fetus papyraceus weighed 100g and the placenta was 450g. The baby cried immediately after birth and was transferred to the Neonatal Intensive Care Unit for preterm management. On a careful examination of the placenta, two cords were noticed and identified as diamniotic – monochorionic placenta. The cord and placenta of the fetus papyraceus are seen pale and inserted in the placenta tissue (normal insertion). Finally, the healthy baby was discharged 18 days after delivery.

Discussion

Fetus papyraceus is a rare condition that can occur in monochorionic and dichorionic multiple pregnancies. The incident of fetus papyraceus is in one out of 12,500 cases. Fetus papyraceus is characterized by the death of one or more fetuses in the early gestational period, while the other fetuses continue to grow^[5,6,7]. Other reports stated that the incident of fetus papyraceus is 1:12,000 live births, which ranged between 1:184 and 1:200 twin pregnancies. The term fetus papyraceus is used when the intrauterine fetal demise of a twin, early in pregnancy, occurs with retention of the fetus for a minimum of 10 weeks, resulting in mechanical compression of the small fetus, such that it resembles parchment paper^[3,7,8]. The causative factors remain unknown in many cases. There are some reported risk factors including true cord knot, filamentous or membranous cord insertion, placental insufficiency, cord stricture, congenital anomalies, and nuchal cord^[3]. While some cases were found to be caused by twin-twin transfusion syndrome. Fetus papyraceus was seen to occur more often with monozygotic twin pregnancies than dizygotic twins, but no association was found with maternal age, parity or gravidity. Fetus papyraceus can occur in both uniovular and binovular twins but is more common in uniovular twins^[5]. In most cases, the fluid of the death tissue is gradually absorbed, the amniotic fluid disappears, and the fetus is compressed and incorporated into the membranes^[5],

but in this case, the patient is admitted with premature rupture membranes. The degree of compression depends on the period between fetal death and delivery. Also, in the later weeks of pregnancy, due to larger fetus size, the probability of the fetus to become a fetus papyraceus is lower^[3]. Based on the gestational period, there are three possible complications, which include a vanishing twin syndrome in the first trimester, fetal papyraceus in the second trimester, and macerated twin in the third trimester. The sign of single embryo death during the first 6-8 weeks may appear as a cyst on the fetal surface of the living fetus placenta. While, if the death occurs after 8 weeks, resorption of the amniotic fluid along with mummification of fetal parts may form FP^[3]. Spontaneous reduction of one or more gestational sacs before the 12th week of gestation in 36% of twins, 53% of triplets, and 65% of quadruplets have been reported. Increased risk of fetal death has been associated with the monochorionic placenta, disproportionate sharing of the placenta, and monozygosity. Moreover, the intrauterine fetal death of one twin is found to be associated with serious mortality and morbidity of the surviving twin^[5]. Fetal loss of the twin during the first trimester is not an uncommon event and does not appear to impair the development of the surviving twin. However, fetal death after mid-gestation (17 weeks of gestation) may increase the risk of IUGR, preterm labor, preeclampsia, and perinatal mortality^[9]. The complications of single death fetuses in twin pregnancies can affect both mother and the surviving fetus. Complications affecting the surviving fetus include multicystic encephalomalacia, serious cerebral impairment, and twin embolization syndrome. It may also cause damage to high vascularized organs such as the brain and kidney. In the brain, it can cause central nervous system abnormalities, such as encephalomalacia, while in other organs it may cause extra cranial abnormalities such as small bowel atresia, gastroschisis, and aplasia cutis^[5,6]. Meanwhile, the maternal complications include preterm labor, infection from the retained fetus, severe puerperal hemorrhage, and consumptive coagulopathy (rarely found in late fetal death)^[3].

In our patient, the two factors that are found to increase the risk of mortality and morbidity of the fetus are prematurity and premature membrane rupture, with prematurity as the leading cause.

Preterm birth is defined as deliveries occurring from 20 to 37 weeks of gestational age^[10]. Preterm birth is a condition that occurs in 6.0 – 15.0% of all deliveries and is the most frequent cause of fetal and neonatal death and morbidity. The incident of preterm birth ranges from 10 – 15%. Several clinical syndromes may lead to a preterm birth including preterm labor with premature rupture of the membranes (35%), preterm labor with the intact membrane (30%), incompetency cervix (15%), and the other such as hypertensive disorders (12%), fetal growth restriction (5%), and antepartum bleeding (3%)^[11].

The common pathway of parturition has three components: cervical ripening, activations of the myometrium, and activation of the fetal membranes. It can be activated by multiple agents. The most clearly identified is a chorioamniotic infection. Excessive stretching of the uterus, such as that happening in multiple gestations or women with polyhydramnios, is also capable of initiating premature labor and/or premature rupture of the membranes^[11].



Figure 1: Fetus papyraceus (100g) with faded and its yellowish part of the placenta. The reddish part of the placenta and normal cord belongs to the surviving twin.



Figure 2: The surviving twin. (Female, 1800g)

Conclusion

Fetus papyraceus is a rare condition and the incident is one out of 12,500 twin pregnancies. Successful conservative management was done on the twin pregnancy of a live baby and a fetus papyraceus that had a PROM. A 25-year-old woman, G2P0A1, went to the hospital with a complaint to get out of amniotic fluid from the vagina and a history of traffic accident 3 weeks ago. A month before the accident happened, an ultrasound examination showed that both babies were in a good condition. The general condition of the patient was all within normal limits when the patient was administered to the hospital. Speculum examination: revealed brown dark amniotic fluid from the cervical canal. Ultrasound examination suggested a life fetus aged 22 weeks with AFI 10 and a fetus papyraceus with AFI 4 located just below the living fetus. Laboratory tests were within normal limits. The patient was treated according to PROM management. The subject delivered a live preterm female baby at 32 weeks by cesarean section for indications of PROM and lie presentation. The baby weighed 1800g, with an APGAR score of 5 at 1 and 7 at 5 mins. The fetus papyraceus weighed 100g, one placenta, biamnion, and monochorionic. The healthy baby was discharged 18 days after delivery.

Conflict of Interest: The authors declare that they have no conflict of interest.

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