CASE REPORT

A monochorionic diamniotic twin pregnancy requiring termination due to maternal anemia caused by bleeding from chronic abruption

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Key Clinical Message
In patients with bloody amniotic fluid, expectant management for chronic abruption is difficult and should not be applied except after a 48-h waiting period required for administration of steroids.

Keywords
Bloody amniotic fluid, chronic abruption, expectant management, placental abruption, preterm premature rupture of membrane.

Introduction
Chronic abruption is characterized by peripheral separation of the placenta and formation of hematoma due to venous bleeding in the periphery of the placenta. The major symptom of chronic abruption is external bleeding. The condition can be managed expectantly because symptoms are usually nonprogressive and the occurrence of nonreassuring fetal status (NRFS) is rare [1–5]. Although chronic abruption is reportedly associated with preterm birth, oligohydramnios, fetal growth restriction (FGR), and progression to placental abruption [2, 6], there are few reports on profound anemia due to external bleeding [7].

Here, we report a case of monochorionic diamniotic (MD) twin pregnancy. The patient was diagnosed with external bleeding from chronic abruption after preterm premature rupture of membranes (PPROM) at 26 weeks of gestation, and although the patient’s condition was conservatively managed, termination of pregnancy was required at 27 weeks of gestation due to maternal anemia caused by external bleeding.

Case Presentation
A 31-year-old woman, gravida 1, para 0, was referred to our hospital from a local clinic with the diagnosis of MD twin pregnancy. She was diagnosed with Quintero stage III classical twin-to-twin transfusion syndrome (TTTS) [8]. At 17 weeks and 5 days of gestation, the patient underwent fetoscopic laser photocoagulation (FLP) at another hospital. Transabdominal ultrasound examination at 25 weeks and 4 days of gestation revealed rupture of the intertwin membranes, which was considered to be a complication of FLP. Although the patient was carefully managed on an outpatient basis, she was admitted to the hospital because of PPROM at 26 weeks and 5 days of gestation.

Under speculum examination, the amniotic fluid was found to contain a very small amount of blood but was clear. After admission, betamethasone was administered...
for lung maturation, and antibiotics and tocolysis using magnesium sulfate were initiated. Her hemoglobin level on admission was 9.8 g/dL without maternal coagulation disorder. At 27 weeks and 0 days of gestation, bloody amniotic fluid was observed under speculum examination. Transabdominal ultrasound examination showed a 25-mm hematoma-like echoic lesion in the periphery of the placenta. Bleeding from the periphery of the placenta was suspected. External bleeding from chronic abruption was diagnosed and the patient was managed conservatively. However, bloody amniotic fluid persisted. At 27 weeks and 3 days of gestation, her hemoglobin level decreased to 5.7 g/dL, and enlargement of the 65-mm hematoma-like lesion in the periphery of the placenta was noted (Fig. 1). The patient underwent emergency cesarean section given the risk of progression to placental abruption, based on the hematoma in the periphery of the placenta having enlarged. Intraoperatively, a hematoma was observed in the uterine cavity, which was considered to be caused by bleeding from the separation site in the periphery of the placenta. She was diagnosed with chronic abruption. The bleeding volume was approximately 700 mL. The mother required transfusion of 4 U of red blood cells (RBC) after surgery but showed a favorable course and was discharged 7 days postoperatively. The newborns were admitted to the neonatal intensive care unit. The first twin was a female infant weighing 1096 g with Apgar scores of 5 at 1 min and 8 at 5 min, and an umbilical arterial pH of 7.283. The second twin was a female infant weighing 932 g with Apgar scores of 6 at 1 min and 8 at 5 min, and an umbilical arterial pH of 7.360.

Discussion

This case highlights an important clinical issue regarding the management strategy for chronic abruption. Although chronic abruption, which is caused by venous bleeding from the periphery of the placenta, can be expectantly managed, such management is difficult in patients who have PROM with bloody amniotic fluid.

Although there is no clear consensus on the definition of chronic abruption, it is characterized by peripheral separation of the placenta due to persistent venous bleeding and formation of hematoma in the periphery of the placenta, by which placental abruption is suspected but there are no abnormalities in the fetal heart rate [1–5]. Placental abruption is characterized by rapid progression of the separation of the placenta as a result of decidual spiral artery rupture, whereas chronic abruption is caused by venous bleeding surrounding the placenta, which minimally causes separation of the placental parenchyma that leads to the development of NRFS; therefore, the patient’s condition can be expectantly managed [4, 5]. We previously reported six conservatively managed patients with chronic abruption in whom a median extension of pregnancy was 18.5 days (range, 3–64 days) [2]. In the present case, we suspected chronic abruption caused by venous bleeding in the periphery of the placenta and decided to use conservative management considering her gestational weeks. Since the major symptom of chronic abruption is external bleeding that is usually not persistent but intermittent, the bleeding is unlikely to cause maternal anemia to the extent that termination of pregnancy was necessary [2, 3]. However, in the present case, the pregnancy period could be extended by only 3 days after the patient was suspected to have chronic abruption. This may be explained by the fact that because the venous bleeding site in the periphery of the placenta came into contact with amniotic fluid due to PPROM, the hemostatic system did not function well. Therefore, in expectantly managing patients with chronic abruption after PPROM, clinician should be aware that it may be difficult to extend the pregnancy period, and severe maternal anemia can develop depending on the property of bloody amniotic fluid, thereby requiring termination of pregnancy.

In summary, it was suggested that, in patients with bloody amniotic fluid, expectant management for chronic abruption is difficult and should not be applied except after a 48-h waiting period required for administration of steroids.

Conflict of Interest

The authors have no conflicts of interest to declare.

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