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Intra-Amniotic Hemorrhage Imitating Gastroschisis: A Case Report and Review of the Literature

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Data Interpretation D
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Patient: Female, 33
Final Diagnosis: Intramamniotic hemorrhage
Symptoms: Abdominal pain • uterine contractions • vaginal bleeding
Medication: —
Clinical Procedure: Cesarean delivery
Specialty: Obstetrics and Gynecology

Objective: Unusual clinical course
Background: A spontaneous intra-amniotic hemorrhage is rarely encountered during pregnancy. The correct diagnosis and management are problematic because of the infrequency of this condition and the high likelihood of a misdiagnosis.
Case Report: A primigravida with an uncomplicated pregnancy and a normal targeted ultrasound presented late in the second trimester of pregnancy with antepartum bleeding of unknown origin. A repeat ultrasound was suggestive of an abdominal wall defect (gastroschisis). The patient continued to have antepartum bleeding and developed uterine contractions and abdominal pain necessitating frequent visits to labor and delivery. An MRI ruled out gastroschisis and diagnosed intra-amniotic hematoma. The patient presented with acute abdominal pain and was clinically considered to be having an abruption, and was delivered by cesarean. Old blood was noted in the abdominal cavity and within the uterine cavity. At the time of the cesarean, an area of intra-amniotic hematoma was identified, as well as a retroplacental blood clot.
Conclusions: An intra-amniotic hematoma is unusual and may be misdiagnosed. MRI may be helpful in determining the correct diagnosis and subsequent management.

MeSH Keywords: Hematoma • Hemorrhage • Prenatal Diagnosis • Ultrasonography, Prenatal

Full-text PDF: <http://www.amjcaserep.com/abstract/index/idArt/900114>

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Background

Spontaneous intra-amniotic hemorrhages are uncommonly encountered in obstetrics. After the hemorrhage occurs, an intra-amniotic blood clot will be formed within the amniotic cavity and the appearance of that clot will change over time. We report a case of an uncomplicated pregnancy in which antepartum bleeding occurred late in the second trimester. In an ultrasound assessment of the pregnancy to determine the etiology of the bleeding, an isogenic irregular mass near the fetal umbilicus was observed, with an appearance that was similar to that seen with fetal gastroschisis.

Case Report

A 33-year-old gravida 1 presented for her initial prenatal visit at 6 weeks of gestation with a past medical history only significant for colitis and recurrent urinary tract infections. At 10 weeks of gestation, the patient was seen secondary to concern for possible parvovirus infection. Testing showed no acute infection, but there was confirmatory evidence of a prior parvovirus infection. At 16 weeks of gestation, the patient's remaining prenatal labs were obtained, including normal QUAD screen (maternal serum human chorionic gonadotropin, inhibin, maternal serum alpha fetoprotein, and maternal serum estriol). A targeted ultrasound at 21 weeks revealed no structural anomalies or soft markers for fetal aneuploidy except for a 2-vessel cord. Views of heart were suboptimal and the patient was scheduled for a follow-up exam to complete the fetal anatomic survey. Over the next several weeks the patient was seen in labor and delivery multiple times for vaginal bleeding, uterine contractions, and abdominal pain. Ultrasounds in labor and delivery showed the placenta was clear of the cervix, there were no clinical or ultrasound features of an abruption, and the patient was diagnosed with antepartum bleeding of unknown origin. At 29 weeks, the patient had another ultrasound to complete the fetal anatomic survey and an isogenic irregular mass measuring 7.38×4.95×3.40 cm without any noted color flow was observed near the fetal umbilicus; the appearance of this mass was similar to that of fetal gastroschisis (Figure 1). A review of the 21-week ultrasound showed a normal cord insertion without an abdominal wall defect, making the diagnosis of fetal gastroschisis unlikely. An MRI was scheduled, which showed an organized echogenic mass near the umbilical cord insertion, which was thought to represent an intra-amniotic hematoma.

The patient was admitted to labor and delivery for premature rupture of membranes at 30 weeks and 1 day of gestation. Soon after the admission, she developed severe lower abdominal pain, and on palpation of the uterus tetanic contractions were palpated. Suspecting an acute abruption, the patient

Figure 1. Ultrasound image suggestive of gastroschisis.

was taken to the operating room for an emergency cesarean delivery. Upon entering the abdominal cavity, 300 ml of dark blood was observed. The fetus, which was in a breech position, was delivered by a classical cesarean with the delivery of a female infant weighing 1740 grams with Apgar score of 5 at 1 minute and 7 at 5 minutes. After the delivery, the uterus was examined to determine the source of the blood seen on entry into the abdominal cavity. The uterus, tubes, ovaries, and broad ligaments were all intact. We did note old dark blood coming from the fallopian tubes and suspect that the source of the bleeding was from a chronic abruption with blood spilling into the abdominal cavity. The placenta was sent for pathology (Figure 2) and returned with a normal weight and villous maturation consistent with gestational age. A 3-vessel cord was noted. A single intervillous hematoma measuring 1 cm was seen within the placenta. A separate organized clot, which was within the membranes, was found to consist of fibrin clots. The postpartum course for both the mother and the neonate was uneventful.

Discussion

Intra-amniotic hemorrhages can be the result of an amniocentesis [1] or bleeding from the placenta [2], or can occur spontaneously [3]. The most frequently performed procedure that is a cause of intra-amniotic bleeding is amniocentesis [4]. A study reported that if the amniocentesis involves the passage of a needle through the placenta, then the risk of intra-amniotic bleeding was 100% [1]. An amniocentesis may be useful in helping make the diagnosis of an intra-amniotic hemorrhage when the diagnosis is uncertain.

The collection of blood in the intra-amniotic cavity can cause confusion on ultrasound examination and may be labelled as a fetal anomaly, depending on the size of the blood clot and the length of time after the initial bleeding episode. Initially,

Figure 2. Placenta and intra-amniotic blood.

the appearance of the blood clot will be similar to that of the placenta, but over time will change in appearance. In our case, the patient had a normal anatomic scan on second-trimester ultrasound, but on a subsequent ultrasound examination a mass near the fetal abdomen was observed and the appearance was similar to that of a gastroschisis. Although the extra-abdominal mass looked like a gastroschisis, the normal second-trimester ultrasound which, showed a normal cord insertion without evidence of an abdominal wall defect, made this diagnosis very unlikely. A follow-up MRI clarified the diagnosis as an intra-amniotic hemorrhage.

A literature search by a reference librarian was undertaken using the search engines PubMed and Web of Science with no restriction on years searched, using the search terms “intra-amniotic” OR “intra-amniotic” OR “intra-amniotic hemorrhage” OR “intra-amniotic hemorrhage” OR “hematoma and membranes AND amniotic”. The only restriction was publication in English. There were 101 abstracts identified. All of the abstracts were read and the full articles on intra-amniotic bleeding were assessed. The references of all full articles were screened for any additional articles. The review identified 1 other case report of an intra-amniotic hemorrhage, which was initially diagnosed as gastroschisis and 1 that identified the intra-amniotic hemorrhage as an umbilical cord mass. The correct diagnosis of the gastroschisis, as in our case, was made with the use of the MRI, which correctly identified the intra-amniotic mass as a hematoma. Because of the rarity of an intra-amniotic hemorrhage,

especially a spontaneous hemorrhage, other diagnoses are commonly made on ultrasound, including a vanishing second twin, neoplasms, and other anomalies.

We found only 6 other reports in the literature of a spontaneous intra-amniotic hemorrhage [2,3,5–8]. One case was that of an intra-amniotic hemorrhage that occurred from a tear in the fibrous rim of a circumvallate placenta [2]. Gilboa et al. reported a case of an intra-amniotic hemorrhage at 38 weeks of gestation, resulting in good maternal and neonatal outcomes [3]. The third case was that of an intra-amniotic hemorrhage that mimicked gastroschisis and is described above [5]. Witter et al. described an intra-amniotic hemorrhage that on ultrasound looked like an umbilical cord mass [6]. Sijanovic et al. reported the case of a patient admitted to the hospital at 40 weeks with an intra-amniotic hemorrhage that resulted in maternal hemorrhagic shock and in an urgent cesarean delivery [7]. Kurata et al. described a woman with a 32-week gestation admitted in preterm labor with severe anemia and blood-stained amniotic fluid by amniocentesis, which was subsequently delivered by cesarean [8].

In our case, the frequent visits to labor and delivery with contractions and bleeding were most likely due to a chronic abruption, and at the time of the cesarean delivery, there was evidence of a marginal placental abruption. The blood in the pelvic cavity appears to have come from this chronic abruption, with some of the blood being noted in the vagina and some of the blood in the pelvic cavity via the fallopian tubes causing uterine irritability and contractions. With only 6 other cases identified in our literature review of spontaneous intra-amniotic hemorrhages, it is difficult to know how often placental abruptions and intra-amniotic hemorrhages are associated. Of the other 6 cases, only 1 delivered vaginally at 21 weeks after preterm premature rupture of the membranes. In 1 pregnancy, the hemorrhage was detected at term just prior to a repeat cesarean delivery [3], 2 underwent preterm emergency cesarean deliveries after an intra-amniotic hemorrhage was diagnosed [2,8], 1 underwent a cesarean at 31 weeks with diagnosed chorioamnionitis [7], and 1 had a cesarean for hemodynamic instability [7].

Conclusions

The incidence of a spontaneous intra-amniotic hemorrhage is very small and is confirmed only by the 6 cases described above and our case of intra-amniotic hemorrhage. Early in pregnancy, intra-amniotic bleeding may present with a confusing ultrasound picture, which may appear as a mass attached to or near the fetus. Bleeding later in pregnancy may be accompanied by contractions and fetal distress and may necessitate an urgent abdominal delivery. Our case represents an

initial spontaneous intra-amniotic hemorrhage, which may or may not have been associated with an abruption. The chronic abruption persisted for several weeks and finally led to an emergency cesarean delivery. There was no further intra-amniotic bleeding observed on serial ultrasounds after the initial hemorrhage. If there was an initial association between the

intra-amniotic hemorrhage and the abruption, this association did not result in further intra-amniotic bleeding.

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