KEY POINTS

1. Multigestational pregnancy presents unique management challenges beyond those encountered in singleton pregnancies.

2. Multigestational pregnancy may result from either a single or multiple fertilized ovum (ova).

3. Complications associated with multigestational pregnancies include spontaneous abortion, preterm delivery, pre-eclampsia, postpartum hemorrhage, and increased perinatal mortality.

BACKGROUND

Most pregnancies are the product of a single fertilized ovum and result in a single fetus. One to two percent of pregnancies, however, result in multiple fetuses, multigestational pregnancy. Such pregnancies present unique challenges for both prenatal management and delivery. Although uncommon, multigestational pregnancy occurs with sufficient frequency that primary care providers should be familiar with basic management considerations.

Multiple gestation may be the result of either a single fertilized ovum that divides early in development or multiple fertilized ova from the same cycle. Monozygotic (MZ) twins are genetically identical fetuses produced from a single fertilized ovum. MZ twins make up about 30% of all twin pregnancies. Dizygotic (DZ) twins are the product of two separate fertilized ova. Although they are genetically similar, they are not genetically identical. DZ twins make up 70% of all twin pregnancies with a frequency of approximately 1 out of 80 pregnancies. Although significantly less common, multigestational pregnancy

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may result in more than two developing fetuses. The expected natural frequency of multigestational pregnancy is approximately 1 in 80 twins, 1 in 6400 triplets, and 1 in 512,000 quadruplets. The increase in assisted fertility has significantly altered the frequency of multigestational pregnancies, however, and such figures may no longer be entirely applicable.

In addition to multiple fetuses, multigestational pregnancies may have several variations of multiple chorions and placentae. MZ twins may have a single placenta and a single chorion (~60%) or may have two chorions with either a fused placenta or two separate placentae (~20% each). DZ twins have two chorions and two placentae, which may be fused or separate (~50% each).

Multigestational pregnancies are associated with increased risk for a variety of prenatal and delivery-related complications (see Table 1). Maternal risks associated with multigestational pregnancy include spontaneous abortion, stillbirth, preterm labor, preterm delivery, placental previa, anemia, urinary tract infection (UTI), pre-eclampsia, and postpartum hemorrhage. Up to two-thirds of twin pregnancies will result in loss of one twin in the first trimester. The rate of fetal demise is twice as high as for single pregnancies. The risk of both anemia and UTI is two to three times normal. There is a threefold increased risk of pre-eclampsia and a fivefold increased risk of postpartum hemorrhage in multigestational pregnancy.

Fetal risks include developmental abnormalities, growth abnormalities, and preterm delivery complications, including a death rate that is three times the normal. Perinatal mortality is three times that of single pregnancy risk. The risk of

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### Table 1
Complications of Multigestational Pregnancy

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<th>Maternal complications</th>
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<tr>
<td>Spontaneous abortion</td>
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<td>Stillbirth</td>
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<td>Preterm labor</td>
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<td>Preterm delivery</td>
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<td>Placenta previa</td>
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<td>Gestational diabetes</td>
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<td>Anemia</td>
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<td>Urinary tract infection</td>
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<td>Pregnancy induced hypertension</td>
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<td>Pre-eclampsia</td>
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<td>Postpartum hemorrhage</td>
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<tr>
<th>Fetal complications</th>
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<tr>
<td>Perinatal mortality</td>
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<tr>
<td>Developmental abnormalities</td>
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<tr>
<td>Growth abnormalities</td>
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<td>Preterm delivery complications</td>
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both major and minor malformations is double that of single pregnancies. The average gestational age at delivery is 36 weeks for twins and 33 weeks for triplets, significantly increasing the likelihood of complications from prematurity.

**DIAGNOSIS**

The diagnosis of multiple gestation is generally made via ultrasound (US) during the course of prenatal care. Careful prenatal care combined with the prevalence of obstetrical US has greatly diminished the number of unanticipated multigestational deliveries. Although the diagnosis is generally made ultrasonographically, the provider’s index of suspicion may be heightened by historical or physical examination findings during the course of prenatal care. Key findings are summarized in Table 2.

**History**

Prior to conception or early in the prenatal course, a past history or family history of multigestational pregnancy should be explored. In addition, a history of assisted reproduction should be noted, when present. Patients with multigesta-
tional pregnancy may report an increase in pelvic pressure, nausea, vomiting, headache, shortness of breath, distention, and constipation. Although none of these symptoms is specific to multigestational pregnancy, the number of symptoms and/or the severity of the complaint may be increased in such pregnancies.

**Physical Examination**

Because the symptoms noted here are neither sensitive nor specific for multigestational pregnancy, suggestive physical findings may be important in identifying patients with multiple fetuses. Increased maternal weight gain is a nonspecific, but suggestive finding. Uterine size greater than expected for gestational age may also be a critical finding. Two palpable fetuses or multiple fetal heart tones, although less common, should prompt immediate US evaluation.

**Laboratory and Diagnostic Studies**

As previously noted, obstetrical US is the definitive study. In skilled hands, US may demonstrate multiple gestation as early as 4 weeks gestation. Other suggestive laboratory findings include decreased hemoglobin and elevated maternal serum α-fetoprotein (levels approximately two to three times higher than for singleton pregnancies even in the absence of fetal abnormalities).

**MANAGEMENT**

**Prenatal Care**

In general, the course of prenatal care is similar to that of singleton pregnancies with additional care directed toward specific increased risks associated with multigestational pregnancy. The diagnosis should be confirmed as early as possible. For patients at high risk (e.g., assisted reproduction), this may include US documentation as early as 4 weeks gestation. Because of the increased potential for genetic abnormalities, providers may consider offering genetic diagnosis for patients over the age of 33. The frequency of prenatal visits may be increased to monitor for signs/symptoms of preterm contractions or preterm labor.

Patients should be counseled concerning the increased need for careful dietary intake. Folic acid supplementation should be started at the first prenatal visit and iron supplementation may also be appropriate. Maternal weight gain should be closely monitored with a target weight gain of 35–45 pounds over the course of pregnancy.

Fetal growth should be closely monitored starting early in the third trimester (or earlier if patient is determined to be at risk for abnormal fetal growth). US studies every 4 weeks will allow for documentation of adequate and symmetric fetal growth.
Labor and Delivery

Management of multigestational deliveries is associated with several significant challenges. Providers with limited experience or without access to necessary obstetrical and neonatal support, should arrange for appropriate backup or transfer prior to the onset of labor. Patients with three or more fetuses are generally not candidates for vaginal delivery and arrangements should be made early in the prenatal course for appropriate cesarean section.

Because the method of delivery may vary with the presentation of the infants at the time of labor, patients with twin pregnancies should be admitted at the first signs of labor, bleeding per vagina, or rupture of membranes. On admission, US should be performed to confirm the position and presentation of each infant. All twin deliveries should be attended by one pediatric team (with all necessary neonatal resuscitation equipment) for each infant.

By convention, the first twin is designated twin A and the second, twin B. Possible variations of presentation include (a) twin A vertex, twin B vertex (~40%), (b) twin A vertex, twin B breech (~40%), or (c) twin A breech, twin B any presentation (~20%). Vaginal delivery can only be attempted if twin A is in a vertex presentation; therefore pregnancies with twin A in a breech position at the time of labor will require cesarean section delivery. If twin A is in a vertex presentation at the time of labor and there are no other contraindications, vaginal delivery may be attempted. In addition to the usual indications for cesarean section associated with any pregnancy (see Chapter 22), cesarean section is indicated in twin deliveries that demonstrate twin–twin transfusion.

Because the position of twin B cannot be absolutely known prior to delivery of twin A, all attempted vaginal deliveries should be performed in a setting equipped for a cesarean section if necessary. All patients should have intravenous access, available typed and crossmatched blood, and a complete blood count prior to delivery.

Vaginal delivery of the first twin is managed in a similar manner to singleton deliveries. Following the delivery of twin A, US should be performed to confirm the presentation of twin B. If twin B is in a vertex presentation, delivery is again managed in a manner similar to singleton pregnancies. If twin B is found to be in a breech position following delivery of twin A, external version may be attempted to position the infant in a vertex presentation. If twin B remains in a breech position, cesarean section should be performed.

SOURCES


