KAWITA BAPAT

Title

Volume 11

Learn simply

Twin Pregnancy

Hard work

Suspected twin pregnancy[1]

- Take a detailed history and perform a physical examination[2]
- Be aware of risk factors for twins[3]

Perform an ultrasound

Diagnosis not confirmed

- Exclude other causes of excessive uterine size (e.g., wrong dates, fibroids, polyhydramnios)
- Routine prenatal care
- Repeat ultrasound examinations as indicated

Diagnosis confirmed

Initial management

- Confirm gestational age and fetal wellbeing
- **Determine zygosity and chorionicity**[4]
- Consider neonatology, MFM, anesthesia consults
- **Prenatal care specific to twins**

Dizygous twins (80%)

Dichorionic/diamniotic placentation

- Review risks of di/di twin[5]
- Consider serial cervical length ±fFN
- Screen for fetal structural anomalies[6]
- Screen for fetal aneuploid[7]
- **Serial growth scans every 3-4 weeks starting in 2nd trimester**
- Consider weekly fetal testing >34 weeks

Intrapartum considerations

- Consider elective delivery at 38 weeks
- Continuous intrapartum fetal heart rate monitoring
- Document presentation and EFW x 2
- Review mode of delivery[10]

Monozygous twins (20%)

Dichorionic/diamniotic placentation (30%)

- Review risks of di/di twin[5]
- Consider serial cervical length ±fFN
- Screen for fetal structural anomalies[6]
- Screen for fetal aneuploid[7]
- **Serial growth scans every 3-4 weeks starting in 2nd trimester**
- Consider weekly fetal testing >34 weeks

Intrapartum considerations

- Consider elective delivery at 38 weeks
- Continuous intrapartum fetal heart rate monitoring
- Document presentation and EFW x 2
- Review mode of delivery[10]

Monochorionic/diamniotic placentation (65%)

- Review risks of mono/di twins[8]
- Consider serial cervical length ±fFN
- Screen for fetal anomalies[6]
- Screen for fetal aneuploidy[7]
- **Serial growth scans every 2 weeks for TTTS starting in 2nd trimester**
- Consider fetal testing >28–32 weeks

Consider elective delivery at 34–37 weeks

Monochorionic/monoamniotic placentation (<5%)

- Review risks of mono/mono twins[9]
- Consider serial cervical length +fFN
- Screen for anomalies[6] and fetal aneuploidy[7]
- **Serial growth scans every 3-4 weeks**
- *Consider continuous fetal monitoring >24 weeks*

Elective cesarean at or after 32–34 weeks

Conjoined twins (<<0.1%)

- Counsel re: termination
- If declined, consult pediatric surgery

Elective cesarean at term

1. Twin pregnancies comprise an increasing number of deliveries (3.3% of all births in 2011), primarily as a result of assisted reproductive technology (ART) and advancing maternal age at conception.

2. The vast majority (96%) of multiple gestations are twin pregnancies arising from two fertilized oocytes (dizygous or “fraternal” twins). Identical (monozygous) twins account for approximately 20% of all twins, but the vast majority of pregnancy complications.

3. Suspect twins in women with excessive symptoms of pregnancy (e.g., nausea and vomiting) or uterine size larger than expected for gestational age.

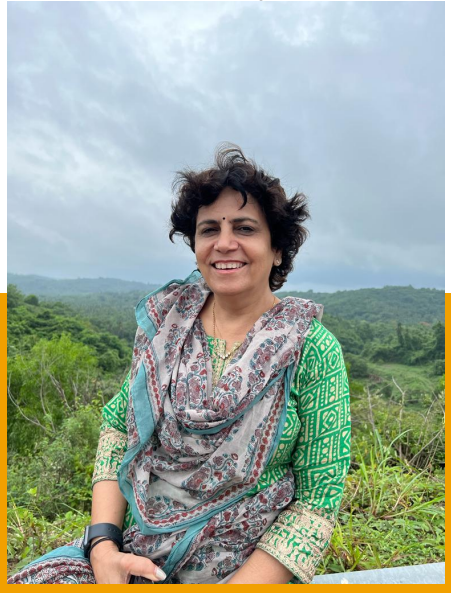
4. Risk factors for twins include a family or personal history of dizygous twins (derived from two separate embryos), advanced maternal age, multiparity, African-American race, and ART. A history of monozygous twins is not a risk factor since it is a random event that occurs in 1 in 300 pregnancies.

1. Ultrasound will confirm the diagnosis, gestational age, fetal wellbeing, and chorionicity. Zygosity refers to the genetic makeup of the twins. Chorionicity refers to the timing of cell division, which establishes the arrangement of the fetal membranes.

2. All dizygous twins have dichorionic/diamniotic (di/di) placentation. In monozygous (mono) twins, the timing of the cell division determines the chorionicity. If the zygote divides within 3 days of fertilization, the result is di/di placentation; if the division occurs on day 3–8, the result is mono/di placentation; day 8–13, mono/mono placentation; and after day 13, incomplete separation (conjoined twins).

3. Determining chorionicity is of paramount importance to the management of all multiple gestations because it directly correlates with perinatal mortality. Ultrasound in early pregnancy can determine if the placentation is dichorionic ("twin peak" or lamda sign), or monochorionic (no peak and a thin filmy membrane).

4. Identification of separate sex fetuses or two separate placentae confirm di/di placentation. Chorionicity can be confirmed by placental examination after delivery. Prenatal care should address the specific nutritional supplementation that includes an increase in dietary intake of 300 kcal, vitamins and minerals required of twin



1. Antepartum complications develop in 80% of twins versus 20–30% of singleton pregnancies.

2. Preterm birth is the most common complication and should be managed similarly to singleton preterm labor with corticosteroid administration, magnesium for neuroprotection, and special attention to fluid management because of the increased risk of pulmonary edema. Fetal growth discordance (defined as ≥20–25% difference in estimated fetal weight (EFW)) occurs in 5–15% of twins, and is associated with a 6-fold increase in perinatal mortality.

3. Maternal complications include an increased risk of gestational diabetes, preeclampsia, preterm premature rupture of membranes, anemia, cholestasis of pregnancy, cesarean delivery (due primarily to malpresentation), and postpartum hemorrhage.

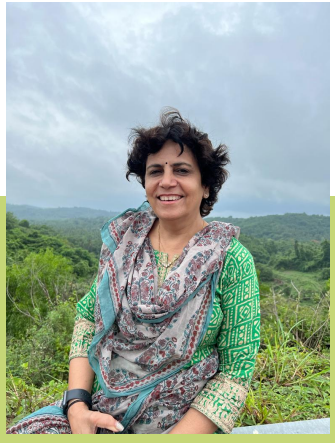
4. Other fetal complications include an increased risk of fetal structural anomalies, IUFD of one or both twins (see Chapter 39, Intrauterine Fetal Demise), twin-to-twin transfusion syndrome (TTTS), twin reverse arterial perfusion (TRAP) sequence, and cord entanglement.
5. Twins are at increased risk of fetal structural anomalies compared with singletons. A detailed fetal anatomic survey of both fetuses is indicated at 18–22 weeks. Fetal echocardiography is not routinely recommended in twins.

1. Maternal serum alpha-fetoprotein (MS-AFP) and "quad panel" screening (MS-AFP, estriol, hCG, and inhibin A) has been standardized for twins as it is for singletons at 15–20 weeks.
2. First trimester risk assessment (nuchal translucency + serum PAPP-A and β-hCG) at 11–14 weeks is rapidly becoming the preferred aneuploidy screening test for multiple pregnancies.

3. In dizygous pregnancies, the risk of aneuploidy is independent for each fetus which changes the AMA-related risk from >35 to >33-years-old. For patients seeking noninvasive prenatal diagnostic testing (NIPT), cell-free DNA testing is available for twin gestations from some laboratories.

4. Because the chance of one or both fetuses having a karyotypic abnormality is greater than for a singleton, some patients may chose amniocentesis as the definitive diagnostic test.

5. It has been historically recommended when the probability of aneuploidy is equal to or greater than the procedure-related pregnancy loss rate (estimated at 1 in 400).



1. Di/di twins do not share a blood supply. On the other hand, vascular communications can be demonstrated in almost 100% of mono/di twins.

2. TTTS results from an imbalance in blood flow from the "donor" twin to the "recipient" and is seen in 15% of mono/di twin pregnancies. Both twins are at risk for adverse events. Following delivery, a difference in birth weight of ≥20% or a difference in hematocrit of ≥5 g/dL confirms the diagnosis. Prognosis depends on gestational age, severity, and underlying etiology. Overall perinatal mortality is 40–80%. Because the treatment options are complex and dependent on such factors as stage of disease and gestational age, an MFM specialist should be consulted. For many mono/di pregnancies complicated by TTTS at <26 weeks, fetoscopic laser photocoagulation of the placental vascular anastomoses has become the treatment of choice.

3. Other options include expectant management, serial amniocentesis of the polyhydramniotic sac, indomethacin (to decrease fetal urine output), or selective fetal reduction. Most experts agree that delivery should occur between 34–37 weeks.

4. Perinatal mortality is high with mono/mono twins (65–70%), due primarily to cord entanglement. As such, delivery should occur by cesarean at 32–34 weeks' gestation.

5. Route of delivery of twins depends on gestational age, EFW, presentation, and maternal and fetal status. There is no inherent benefit of cesarean delivery for the sole indication of twin gestation, but some women may prefer it to the small risk of a combined vaginal and cesarean delivery