Learn simply

Higher-Order Multifetal Pregnancy

Passion profession same

Suspected high-order multiple pregnancy[1]

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

Perform an ultrasound[4]

Diagnosis not confirmed

- Exclude other causes of excessive uterine size (e.g., wrong dates, fibroids, polyhydramnios)
- Confirm fetal wellbeing
- Document gestational age
- Repeat ultrasound examinations as clinically indicated

Continue routine prenatal care

Diagnosis confirmed

Initial management

- Confirm fetal wellbeing
- Document gestational age
- Consider MFM, anesthesia and neonatology consults
- **Determine zygosity and chorionicity**

Subsequent evaluation

- Review risks of higher-order multiple pregnancy[5]
- Screen for fetal structural anomalies[6]
- Screen for fetal aneuploidy[7]

Offer/recommend selective fetal reduction[8]

Selective fetal reduction to twins

- **Consider serial cervical length ±fFN**
- 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 (no amniocentesis for FLM)
- Document fetal presentation and EFW
- Consider continuous intrapartum fetal monitoring

Review mode of delivery[9]

Declined

- **Serial cervical length ±fFN**
- Serial growth scans every 2 weeks starting in 2nd trimester
- Consider weekly fetal testing >28 weeks
- *Follow closely for evidence of preterm labor and other maternal complications*
- Consider empiric antepartum corticosteroids and follow-up neonatology consultation
- Document serial fetal presentation and EFW

Deliver by cesarean[9]

1. Multifetal pregnancies complicate 3% of all deliveries. The numbers had been steadily increasing until recent changes in assisted reproductive technology (ART) that have led to a reduction in the number of embryos transfer during IVF. Higher-order multifetal pregnancies (triplets and up) constitute 0.1–0.3% of all births.

2. Multifetal pregnancy should be excluded in all patients who have undergone ART and suspected in women with excessive symptoms of pregnancy (e.g., nausea and vomiting) or uterine size larger than expected for gestational age.

3. The major risk factor for high-order multifetal pregnancy is ART. In this regard, ovulation induction/intrauterine insemination poses a higher risk than in vitro fertilization. Minor risk factors include a family or personal history of multifetal pregnancy (except monozygous twins), advanced maternal age, and African-American ethnicity.

4. Ultrasound will confirm the diagnosis, gestational age, fetal well-being, and chorionicity (arrangement of placenta/fetal membranes).
5. Since high-order multifetal pregnancy can contain monozygous pairs, it is imperative that chorionicity be carefully established as soon as possible by someone who is specially trained and credentialed in advanced ultrasound, such as a MFM subspecialist.

1. Antepartum complications develop in 80% of multifetal pregnancies versus 20–30% of singleton gestations. Preterm delivery is the most common complication and the risk of preterm delivery increases as fetal number increases: the average length of gestation is 40 weeks in singletons, 37 weeks in twins, 33 weeks in triplets, and 29 weeks in quadruplets. Fetal growth discordance (defined as ≥25% difference in EFW) is associated with a significant increase in perinatal mortality.
2. 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.
3. Other fetal complications include an
   - increased risk of fetal structural anomalies,
   - intrauterine fetal demise (IUFD) of one or both twins
   - twin-to-twin transfusion syndrome (TTTS),
   - twins reverse arterial perfusion (TRAP) sequence, and
   - cord entanglement in the case of monochorionic-monoamniotic pair
4. Multifetal pregnancies are at increased risk of fetal structural anomalies compared with singletons.
5. A detailed fetal anatomic survey of each fetus is indicated at 18–20 weeks. Fetal echocardiography is not routinely recommended in multiple pregnancies, but is indicated if the conception was by ART.

1. Maternal serum alpha-fetoprotein (MS-AFP), "quadruple panel" serum analyte screening (MS-AFP, estriol, hCG, and inhibin A), and first trimester risk assessment (nuchal translucency (NT) + serum PAPP-A and β-hCG) have not been adequately validated in higher-order multiple pregnancies. As such, NT alone has become the preferred aneuploidy screening test for higher-order multiple pregnancies.
2. Chorionic villous sampling (CVS) and amniocentesis can be offered for definitive karyotype analysis, but are associated with procedure-related pregnancy loss rate (estimated at 1 in 400).
3. Spontaneous reduction in the first trimester occurs in 10–15% of higher-order multifetal pregnancies. If not, the option of multifetal pregnancy reduction (MFPR) to twins at 10–13 weeks should be offered.
4. The benefits of MFPR include increased length of gestation, increased birth weight, and reduced prematurity and perinatal mortality and mortality. For quadruplet pregnancies and upward, the benefits of MFPR clearly outweigh the risks. In the absence of fetal anomaly, no clear benefit has been demonstrated for reduction of twins to a singleton. A recent Cochrane Review concluded that triplet pregnancies benefit from selective reduction to twins, with a reduction in pregnancy loss, antenatal complications, preterm birth, and neonatal death.

1. The procedure-related pregnancy loss rate prior to 20 weeks may be as high as 15% (range: 5–35%), which is comparable to the background spontaneous loss rate for higher-order multiple pregnancies.

2. However, the fetal loss rate increases with advancing gestation at the time of the reduction. MFPR should be distinguished from selective fetal reduction in which one fetus is selectively terminated because of a known structural or chromosomal abnormality.
3. Route of delivery depends on fetal number, gestational age, EFW, presentation, and maternal and fetal wellbeing.
4. Cesarean delivery has traditionally been recommended for all higher-order multifetal pregnancies, although vaginal delivery may be appropriate in selected patients.