بسم الله الرحمن الرحيم
Multiple Fetal Pregnancy

A **multiple birth** occurs when more than one **fetus** is carried to term in a single **pregnancy**. Different names for multiple births are used, depending on the number of offspring. Common multiples are two and three, known as **twins** and **triplets**. These and other multiple births occur to varying degrees in most animal species, although the term is most applicable to **placental** species.
Multiple pregnancy

Multiple birth siblings are either **monozygotic** or **dizygotic**. The former result from a single fertilized **egg** or **zygote** splitting into two or more embryos, each carrying the same genetic material (genes). Siblings created from one egg are commonly called identical. Since identical multiples share the same genetic material, they are always the same sex. Dizygotic or fraternal multiples instead result from multiple ova being ripened and released in the same menstrual cycle by a woman's ovaries, which are then fertilized to grow into multiples no more genetically alike than ordinary full siblings. Multiples called **polyzygotic** represent some combination of fraternal and identical siblings. For example, a set of triplets may be composed of identical twins from one egg and a third sibling from a second egg.
Gestational sacs
Incidence and epidemiology

- Hereditary → mother important than father.

- Age → peak at 37 years of age.

- Parity → increase more than six times.
Etiology of multiple fetuses

- **Dizygotic**: It is a fertilization of two separate ovum
**Monozygotic = Identical twins:** It is a single fertilized ovum that subsequently divides into two similar
Monzygotic (one egg) twins

ZYGOTE

first division

Embryo

Embryo

separation
Diagnosis of Multiple Fetuses

1. History.
2. Clinical Examination.
3. Investigations.
History

- Family history.
- Advanced age.
- High parity.
- Large maternal size.
- Medication.
Clinical Examination

- Late in first trimester by Doppler → two fetal hearts.
- Uterine palpation can feel two fetal heads or multiple fetal parts.
- Uterine size is larger than expected for the gestational age determined from menstrual data.
Deferential diagnosis for large for date

1. Multiple fetuses.
2. Inaccurate menstrual history.
3. Hydramnios.
5. Elevation of the uterus by distended bladder.
6. Uterine myomas.
7. A closely attached adnexal mass.
8. Fetal macrosomia (late in pregnancy)
Investigations

1. Ultrasonographic examination → separated gestational sacs in early pregnancy.

2. Radiological

3. Biochemical tests:
   a- chorionic gonadotropin in plasma and in urine.
   b- alpha fetoprotein level (alone is not diagnostic).
Risk of Multiple Fetal Pregnancy

1. Abortion: Increase spontaneous abortion more than three times.
2. Malformation: Congenital malformation > single
3. Low birth weight:
   a. growth restriction (estimated fetal weight less than 10th percentile for singleton gestation).
   b. preterm
   c. discordance (difference in estimated fetal weight of greater than 20%-25% between twin A and twin B).
4. Decrease duration of gestation:
   a. 57% of twins → at 35 weeks.
   b. 92% of triplets → at 32 weeks.
   c. all quadruplets → at 29–30 weeks
5. Preterm birth:
   a. It is the most common complication of multiple pregnancies affecting long-term outcome.
   b. Prophylactic use of:
      - Tocolytics
      - Bed rest
      - Cercolage
   c. Fetal fibronectin (at 24-28 weeks if high associated with increased risk of preterm before 32 weeks of gestation).
Risk of Multiple Fetal Pregnancy

6. Prolonged pregnancy:
   a- twin pregnancy of 40 weeks or more should be considered post term.
   b- increase risk of stillbirth.
   c- consider delivery of uncomplicated twins of 39 weeks of gestation.

7. Intrauterine fetal demise of one twin (late pregnancy), Vanishing twin (early pregnancy).
Maternal Complication

1. Acute fatty liver.
2. Anemia.
3. Abnormal placentation.
5. Preeclampsia.
6. Operative vaginal delivery and C-section.
7. Premature rupture of membrane.
8. Postpartum hemorrhage.
9. Umbilical cord prolapse.
Problems Specific to Monochorionic twins

**Twin-Twin transfusion syndrome:**
* 15% of monochorionic develops.
* Early onset often is associated with poor prognosis.
* Twin-Twin transfusion can be acute or chronic.
* The net effect of blood flow imbalance result:
  a- donor $\rightarrow$ small, hypoperfused, anemic.
  b- recipient $\rightarrow$ large, hyperperfused.
**TWIN-TWIN transfusion**

- Chronic shunt occurs, the donor bleeds into the recipient so one is pale with oligohydraminose while the other is polycythemic with hydraminose.

- If not treated death occurs in 80-100% of cases.
Problems for Monoamnionicity

Rare < 1%

- Mortality 20-50%.
- Cord entanglement.
- Perinatal mortality.
- Preterm Delivery.
- Growth restriction.
- Congenital anomalies.

- Conjoined twins → Siamese twins
  * Anterior (thoracopagus).
  * Posterior (pygopagus).
  * Cephalic (craniopagus).
  * Caudal (ischopagus).
Anterior (thoracopagus).
Cephalic (craniopagus).
INTRAUTERINE DEATH OF ONE TWIN

- Early in pregnancy usually no risk.

- *In 2nd or 3rd trimester.*
  - Increase risk of DIC.
  - Increase risk of thrombosis in the alive one
  - The risk is much higher in monochorionic than in dichorionic twins
In singleton pregnancies the birth weight is below the 5th centile for gestation in about 5% of babies.

In dichorionic twins the chances of low birth weight is double for each baby than in singletons and therefore the risk that at least one of the twins will suffer poor growth is about 20%.

In monochorionic twins the chance of poor foetal growth is double that of dichorionic twins.
Chromosomal defects

The risk for each twin is the same as in singleton pregnancies

In monozygotic twin pregnancies, chromosomal abnormalities affect either both or none fetuses

The risk increases with maternal age
<table>
<thead>
<tr>
<th>Complication</th>
<th>Singleton</th>
<th>Dichor</th>
<th>Monochor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abortion at 12-23 wks</td>
<td>1%</td>
<td>2%</td>
<td>12%</td>
</tr>
<tr>
<td>Delivery at 24-32 wks</td>
<td>1%</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>IUGR</td>
<td>5%</td>
<td>10%</td>
<td>20%</td>
</tr>
<tr>
<td>Fetal defects</td>
<td>1%</td>
<td>2%</td>
<td>8%</td>
</tr>
</tbody>
</table>
Management

1. Antenatal.
2. In Labor.
Antenatal Management

- **Early diagnosis** (mainly by ultra sound)

- **Adequate nutrition**:-
  1- Caloric consumption increased by 300 Kcal per day.
  2- Iron 60-100 mg per day.
  3- Folic acid 1mg per day.

- **Frequent prenatal visit**:-
  observe maternal and fetal complications
  1- Frequent ultra sound → fetal growth, congenital anomalies, amniotic fluid.
  2- Doppler.
In Labor Management

- Trained obstetrical attendant.
- Available blood.
- Good access I.V live.
- CTG monitoring.
- Anesthetist → ER C-S
- Pediatrician for each fetus.
- Mode of delivery depend on presentation.
Presentation

- Cephalic - Cephalic 42%
- Cephalic - Breech 27%
- Cephalic - Transverse 18%
- Breech - Breech 5%
- Other 8%

Management in First stage
Second stage
Third stage (PPH)
Elective Caesarean Section is frequently performed in the fetal interest in the following circumstances:

- Malpresentation of the first twin
- Second twin larger than the first
- Evidence of IUGR in one or both twins
- Monochorionic twins
- History of fertility treatment
Thank You