Multiple Gestation
Multiple pregnancy

- When more than one fetus simultaneously develops in the uterus then it is called multiple pregnancy.

- Simultaneous development of two fetuses (twins) is the commonest; although rare, development of three fetuses (triplets), four fetuses (quadruplets), five fetuses (quintuplets or six fetuses (sextuplets) may also occur.
Incidence

- Varies widely. Highest in Nigeria being 1 in 20 and lowest in Far Eastern countries being 1 in 200 pregnancies. Monozygotic twins 1 in 250 in the world.

- According to Hellin’s rules, the mathematical frequency of multiple birth is twins 1 in 80 pregnancies, triplets 1 in $80^2$, quadruplets 1 in $80^3$ and so on.
• The incidence of multiple gestation continues to increase, now accounting for more than 3% of all live births in the United States.

• The two major factors accounting for the increases are the widespread availability of assisted reproductive technologies and increasing maternal age at childbirth.
Factors that Influence Twinning

- The causes of twin pregnancy is not known.
- **Race:** Highest amongst Negroes (once in every 20 births), lowest amongst Mongols and intermediate among Caucasians.
- **Heredity:** Family history in mother.
- **Maternal Age and Parity:** Twinning peaks at age 37 years.
- **Increasing parity:** 5\(^{th}\) gravid onwards.
- **Nutritional Factors:** Taller, heavier women—twinning rate 25 to 30 % greater.
- **Pituitary Gonadotropin**
- **Infertility Therapy**
- **Assisted Reproductive Technology**
Twins pregnancy

Varieties:

- **Dizygotic twins**: is the commonest (two-third) and results from the fertilization of two ova.

- **Monozygotic twins** (one-third) results from the fertilization of single ovum.
Genesis of twins

- Monozygotic twins (syn. identical, uniovulvar)

- Dizygotic twins (syn: fraternal, binovular)
On rare occasion, the following possibilities may occur

- If the division takes place **within 72 hours** after fertilization the resulting embryos will have two separate placentas, chorions and amnions (**D/D**)

- If the division takes place **between the 4th and 8th day** after the formation of inner cell mass when chorion has already developed **diamniotic monochorionic twins develop** (**D/M**)

- If the division **after 8th day** of fertilization, when the amniotic cavity has already formed, a **monoamniotic monochorionic twins develop** (**M/M**)
Diamniotic Dichorionic Separate placenta Frequency: 35% Mortality: 13%
Diamniotic Dichorionic fused placenta Frequency 27% Mortality 11%
Diamniotic Monochorionic single placenta Frequency 36% Mortality 32%
Monoamniotic Monochorionic single placenta Frequency 2% Mortality 44%
Multiple pregnancy contd...

- On extreme rare occasions, division occurs after 2 weeks of the development of embryonic disc resulting in the formation of conjoined twins called Siamese twins.

- Four types of fusion may occur
  - Thoracopagus (commonest)
  - Pyopagus (Posterior fusion)
  - Craniopagus (cephalic)
  - Ischiopagus (caudal)
Terms

- Superfecundation
- Superfetation
- Fetus papyraceous or compressus
- Fetus acardius
- Hydatidiform mole
- Vanishing twin
Sex: while twins having opposite sex are almost always binovular and twins of the same sex are not always uniovular but the uniovular twins are always of the same sex.

If the fetuses are of the same sex and have the same genetic features (dominant blood groups), monozygosity is likely.

A test skin graft: Acceptance of reciprocal skin graft—proof of monozygosity.

DNA microprobe technique is more definitive.

Follow-up study between 2-4 years—showing almost similar physical and behavioral features suggestive of monozygosity.
## Examination of placenta and membranes

<table>
<thead>
<tr>
<th>Dizygotic Twin</th>
<th>Monozygotic twin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two placenta, either completely separated or more commonly fused at the margin appearing to be one. No anastomosis between the two fetal vessels.</td>
<td>Placenta is single.</td>
</tr>
<tr>
<td>Each fetus is surrounded by a amnion and chorion</td>
<td>Varying degrees of anastomosis between the two fetal vessels.</td>
</tr>
<tr>
<td>Intervening membranes consist of 4 layers-amnion, chorion, chorion and amnion.</td>
<td>Intervening membrane consists of two layers of amnion only.</td>
</tr>
</tbody>
</table>
Biochemical Tests:

- Levels of hCG in plasma and in urine are higher
- Maternal serum alpha-fetoprotein level: Elevated
- Unconjugated oestriol: approximately double

Radiological examination
Maternal Adaptations

• The normal maternal physiologic adaptations seen in singleton pregnancy are exaggerated in multifetal gestation.

• Serum levels of progesterone, estradiol, estriol, human placental lactogen, human chorionic gonadotropin (hCG), and α-fetoprotein (AFP) are all significantly higher in multiple than in singleton gestation.
DIAGNOSIS OF MULTIPLE GESTATION

• Positive sonographic diagnosis of multiple gestation can be made by visualizing multiple gestational sacs with yolk sacs by 5 weeks of gestation and multiple embryos with cardiac activity by 6 weeks.

• If two gestational sacs are seen on early ultrasound studies, the chance of delivering twins is 57%, but this increases to 87% if two embryonic poles with cardiac activity are visualized.
• If three gestational sacs are seen on early ultrasound, the chance of delivering triplets is 20%, increasing to 68% if three embryonic poles with cardiac activity are visualized.

• The early sonographic visualization of two intrauterine fluid collections may represent a singleton in a bicornuate uterus, a singleton with a subchorionic hemorrhage, or a vanishing twins.
Ultrasonography in Multiple Gestation

Prenatal ultrasonography in multiple gestation is useful for the following:

- Confirming a diagnosis of multiple gestation
- Determining chorionicity
- Detecting fetal anomalies
- Guiding invasive procedures
- Evaluating fetal growth
- Measuring cervical length
- Confirming fetal well-being
- Preparing for the delivery
• Because 20% of twins are monochorionic and such pregnancies are associated with a higher perinatal mortality risk, accurate determination of chorionicity is essential for clinical management.

• is best performed in the first trimester.

• Before 8 weeks’ gestation, clearly separate gestational sacs, each surrounded by a thick echogenic ring, is suggestive of dichorionicity. If separate echogenic rings are not visible, monochorionicity is likely.
• The use of a membrane thickness cutoff value of 2 mm has also been reported to correctly assign chorionicity in more than 90% of cases, but the reproducibility of this measurement has been questioned.

• Visualization of a triangular projection of placenta between the layers of the dividing membrane (known as the twin-peak or lambda sign) is also useful in diagnosis of dichorionicity, but its absence is not as reliable for predicting monochorionicity.
Twin peak sign
• Although each of these sonographic features individually has a poor positive predictive value for monochorionicity, use of a composite sonographic approach (i.e., one placenta, sex concordance, thin dividing membrane, and absence of the twin-peak sign) may yield a positive predictive value for monochorionicity of 92%.
DETECTION OF FETAL ANOMALIES

• The accuracy of ultrasonography for detecting congenital fetal anomalies in multiple gestations has not been adequately studied in large series.

• finding of increased nuchal translucency in one fetus of a monochorionic pair may also presage the development of twin-twin transfusion syndrome (TTTS).
EVALUATION OF FETAL GROWTH

• Serial ultrasonography is the most accurate method to assess fetal growth in cases of multiple gestation
MEASUREMENT OF CERVICAL LENGTH

• does not differ from that described for singleton gestations.

• Our practice has been to measure cervical length every 2 weeks from 16 to 24 weeks in the cases of multiple gestation deemed to be at highest risk for preterm delivery (e.g., higher-order multiple gestations, history of a preterm singleton birth).
Prenatal Diagnosis

• Prenatal diagnosis and genetic counseling are especially important in the management of multiple gestation because of the higher risk for fetal anomalies in multifetal gestation and the positive association between twinning and maternal age.
In dizygotic twin pregnancies, each fetus has its own independent risk for aneuploidy; thus, there is an additive increased risk for at least one abnormal fetus. Furthermore, both monozygotic and dizygotic pregnancies have increased risk for structural anomalies. Because postzygotic nondisjunction can result in heterokaryotypic twins, monozygotic twins may not necessarily be concordant for chromosomal abnormalities. Because of this phenomenon, and because the diagnosis of monochorionicity is rarely made with certainty, consideration should be given to sampling each gestation separately whenever prenatal diagnosis is indicated.
RISKS OF CHROMOSOMAL ABNORMALITIES

• In the population studied by Rodis and coworkers, the risk for a 33-year-old woman that one fetus in a twin pregnancy would have Down syndrome was similar to that for a 35-year-old woman with a singleton gestation.
• it has been suggested that invasive prenatal diagnosis should be offered to women in the United States with twin gestations who are 31 years of age or older.

• In a triplet gestation, the same calculus applies: The chance that a 28-year-old woman will have at least one fetus with Down syndrome may be similar to that of a 35-year-old woman with a single fetus.

• a policy of offering chorionic villus sampling (CVS) or amniocentesis to all women with twin pregnancy who are 31 or 33 years of age.
FIRST-TRIMESTER SCREENING FOR ANEUPLOIDY

• First-trimester free β-hCG and PAPP-A levels are about twice as high in twin pregnancies as in singleton pregnancies.

• In addition, chorionicity and use of assisted reproductive techniques, such as IVF and intracytoplasmic sperm injection, have a significant impact on first-trimester maternal serum marker levels.
• PAPP-A and free β-hCG levels are significantly lower in monochorionic twin pregnancies than in dichorionic, and PAPP-A levels are lower in IVF than in spontaneously conceived pregnancies.

• One of the main benefits of nuchal translucency measurement in the multiple gestation population is that, if MFPR is being planned, this measurement can be useful in deciding which fetus or fetuses to target for reduction.
SECOND-TRIMESTER SERUM SCREENING FOR ANEUPLOIDY

• In twin pregnancies, experience with such screening remains limited. Average levels of AFP, hCG, and unconjugated estriol are increased 2.04-fold, 1.93-fold, and 1.64-fold, respectively, in twin compared with singleton pregnancies.

• Given the effective alternative of nuchal translucency sonography, we do not routinely offer second-trimester serum marker evaluation for aneuploidy screening with multiple gestations.
SCREENING FOR NEURAL TUBE DEFECTS

• A second-trimester maternal serum AFP level greater than 2.0 or 2.5 MoM has traditionally been used to screen for neural tube defects in singleton gestations, but is uncommonly employed today because of the widespread availability and increased accuracy of sonographic evaluation of fetal anatomy. Serum screening for neural tube defects in multiple gestations cannot identify which fetus is affected.
• These sonographic features, such as the “lemon” sign, representing scalloping of the frontal bones, and the “banana” sign, representing downward displacement of the cerebellum toward the foramen magnum, are valid in multiple gestation.
GENETIC AMNIOCENTESIS

- After the first sac has been entered and amniotic fluid aspirated, several milliliters of the blue dye indigo carmine are instilled and the needle is removed. A new needle is then placed into the second sac, and aspiration of clear fluid confirms successful sampling of two separate sacs. Methylene blue should not be used because of the risks for fetal hemolytic anemia, small-intestine atresia, and fetal demise. This procedure can be extended sequentially to perform triplet and quadruplet genetic amniocenteses.

- mapping
CHORIONIC VILLUS SAMPLING

- Chorionic villus sampling is usually performed for twin gestations at 10 to 14 weeks.
- If monochorionicity has been confirmed, a single-placenta sampling procedure is reasonable.
- In a recent meta-analysis that included studies published between 1990 and 2011, the overall pregnancy loss rate before 24 weeks’ gestation after CVS for twins was 3.4%. No difference was noted in loss rates between transabdominal and transcervical techniques, nor between single and double uterine needle insertion techniques.
CONFIRMATION OF FETAL WELL-BEING

• The biophysical profile may also be of benefit in multiple gestation if an NST is not reassuring or when an NST is impractical to perform, as it may be in cases of higher-order multiple gestation.

• We employ Doppler velocimetry of the umbilical artery whenever multiple gestation is complicated by significant growth restriction or discordance.
Perinatal Mortality and Morbidity

• Prematurity, monochorionicity, and growth restriction pose the main risks to fetuses and neonates in multiple gestations.

• Perinatal deaths have decreased, but the risk for prematurity has not changed significantly. The mean duration of pregnancy is 35.3 weeks for twin gestations, 31.9 weeks for triplets, and 29.5 weeks for quadruplets.
Although the incidence of very premature delivery (before 32 weeks) for singletons in the United States is 1.6%, 11% of twin and 37% of triplet gestations are delivered before 32 weeks.

Mortality rates are significantly higher among same-sex twins compared with discordant-sex twins, indicating that prematurity and complications of monochorionicity explain the increased mortality in twin gestation.
<table>
<thead>
<tr>
<th>TYPE OF PREGNANCY</th>
<th>AVERAGE GESTATIONAL AGE AT TIME OF DELIVERY</th>
<th>AVERAGE BIRTH WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singleton</td>
<td>38.6 weeks</td>
<td>7.3 lb. (3,300 grams)</td>
</tr>
<tr>
<td>Twin</td>
<td>35 weeks</td>
<td>5.1 lb. (2,300 grams)</td>
</tr>
<tr>
<td>Triplet</td>
<td>32 weeks</td>
<td>3.7 lb. (1,660 grams)</td>
</tr>
<tr>
<td>Quadruplet</td>
<td>30 weeks</td>
<td>2.9 lb. (1,300 grams)</td>
</tr>
</tbody>
</table>
However, there is no evidence that twin or triplet neonates have outcomes different from those of gestational age–matched singletons.
Complications

Maternal

**During pregnancy**

<table>
<thead>
<tr>
<th>Complication</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nausea and vomiting</td>
<td></td>
</tr>
<tr>
<td>Anemia</td>
<td></td>
</tr>
<tr>
<td>Pre-eclampsia (25%)</td>
<td></td>
</tr>
<tr>
<td>Hydramnios (10%)</td>
<td></td>
</tr>
<tr>
<td>Antepartum hemorrhage</td>
<td></td>
</tr>
<tr>
<td>Malpresentation</td>
<td></td>
</tr>
<tr>
<td>Preterm labour (50%)</td>
<td></td>
</tr>
<tr>
<td>Mechanical distress</td>
<td></td>
</tr>
</tbody>
</table>
Complication

- During labour

  - Early rupture of membranes and cord prolapse
  - Prolonged labour
  - Increased operative interference
  - Bleeding
  - Postpartum hemorrhage
Complication

• *During puerperium*
  - Subinvolution
  - Infection
  - Lactation failure

• *Fetal*
  - Miscarriage
  - Prematurity (80%)
  - Growth problem (25%)
  - Intrauterine death
  - Asphyxia and still birth
  - Fetal anomalies
Maternal Mortality and Morbidity

- Maternal morbidity is significantly increased in mothers with multiple gestations and is apparently related to the number of fetuses.
- Twin pregnancies are associated with significantly higher risks for hypertension and placental abruption, in addition to higher risks for preterm labor (78%); preeclampsia (26%); hemolysis, elevated liver enzymes, and low platelets (HELLP) syndrome (9%); anemia (24%); preterm premature rupture of membranes (pPROM) (24%); gestational diabetes (14%); acute fatty liver (4%); chorioendometritis (16%); and postpartum hemorrhage (9%).
PREECLAMPSIA

• Pregnancy-related hypertension, including gestational hypertension and preeclampsia, is increased in multifetal gestations, ranging from 10% to 20% in twin, 25% to 60% in triplet, and up to 90% in quadruplet pregnancies.

• The most likely explanation for the strong association between increasing number of fetuses and increasing incidence of preeclampsia is the larger placental mass.
• To date, however, no prophylactic interventions (e.g., low-dose aspirin, calcium supplementation) have been found to prevent or reduce the incidence of preeclampsia in these high-risk pregnancies.
• No differences in the frequency of complications were noted between spontaneous triplets and those arising from ovulation induction or in vitro fertilization (IVF).

• Preeclampsia in higher-order multiple gestations occurs at an earlier gestational age, is more severe, and more likely to have an atypical clinical presentation than preeclampsia in singleton gestations.
• Surveillance for other potential maternal complications of higher-order multiple gestations, including acute fatty liver of pregnancy, gestational diabetes, urinary tract infections, and intervertebral disk disease, is important as well.

• Acute fatty liver should be carefully considered in the differential diagnosis if hepatic dysfunction is found in a woman with multiple gestation
• Heart rate and stroke volume are significantly increased in gravidas with twins during the third trimester, leading to a significant increase in cardiac output and cardiac index compared with singleton pregnancies.

• In one study of 119 twin pregnancies, stroke volume was increased by 15%, heart rate by 4%, and cardiac output by 20%, compared with singletons.

• These increases most likely occur because of increased myocardial contractility and blood volume in the setting of multiple gestation.
• at term, mean maternal blood pressures are significantly higher in multiple compared with singleton pregnancies.

• Depending on the number of fetuses, plasma volume increases by 50% to 100%, which may lead to dilutional anemia.
• Recommendations for maternal weight gain for twin pregnancy increase to 37 to 54 lb in the setting of normal-weight, 31 to 50 lb for overweight, and 25 to 42 lb for obese patients.

• Ideal weight gain for higher-order multiple gestations is probably greater than for twin gestations, with a suggested weight-gain goal of 1.5 lb/wk during the first 24 weeks of pregnancy.
• Daily supplementation with at least 60 to 120 mg of elemental iron and 1 mg of folic acid is recommended because of the increased risk for iron- and folate-deficiency anemia in multiple gestation.
Preterm labor and delivery

- Preterm birth occurs in more than 50% of twin and 75% of triplet gestations.
- Sonographic assessment of cervical length and cervicovaginal assays for fetal fibronectin.
- Cutoff of less than 20 mm in cervical length at 20 to 24 weeks’ gestation was the optimal threshold to predict significantly increased risk for preterm birth.
• a positive cervicovaginal fetal fibronectin assay at 24 weeks has not been shown to be a significant predictor of preterm delivery in twins.

• There is no evidence that prophylactic cervical cerclage or prophylactic tocolytic agents are beneficial.
• We therefore reserve cervical cerclage for women with multiple gestation who also meet historical criteria for cervical insufficiency.

• Weekly intramuscular injections of $17\alpha$-hydroxyprogesterone caproate had no effect on outcome.
• Long-term maintenance administration of tocolytic drugs (e.g., oral terbutaline or nifedipine, rectal indomethacin, subcutaneous infusion of terbutaline) does not prolong pregnancy or prevent prematurity in multiple gestation.

• The combination of one or more tocolytic agents, corticosteroids, and intravenous fluid replacement in the setting of the increased blood volume of multiple gestation leads to a significant risk for pulmonary edema.
• Betamethasone (12 mg intramuscularly, two doses, 24 hours apart) is given whenever there is a high risk for delivery between 24 and 34 weeks of gestation.

• Bed rest, at home or in the hospital, does not prolong pregnancy or prevent preterm labor or delivery for patients with multiple gestations.

• We advise modified rest at home only for women with higher-order multiple gestations, starting at approximately 20 weeks of gestation.
FETAL SURVEILLANCE

- We evaluate fetal weight and growth discordance every 3 to 4 weeks from approximately 18 weeks’ gestation in dichorionic twins, or every 2 weeks if growth restriction or growth discordance (>20%) is discovered. For monochorionic twins, as well as all higher-order multiple gestations, serial growth scans are performed every 2 weeks from approximately 16 weeks’ gestation. Although some clinicians routinely monitor all multiple gestations using weekly NST or biophysical profiles beginning at 34 weeks, this practice has not been validated by prospective studies.
• Surveillance with NST or biophysical profile is reserved for multiple pregnancies with the following indications:
  • Significant growth restriction in either fetus
  • Growth discordance (>18%)
  • Oligohydramnios
  • Decreased fetal movement
  • Maternal medical complications
As soon as the diagnosis of significant growth discordance is confirmed, fetal testing should begin intensively. In our practice, this consists of twice-weekly NST supplemented by biophysical profiles and umbilical artery Doppler velocimetry. If absent or reversed end-diastolic flow is discovered, delivery should be considered if gestational age is sufficiently advanced that the healthy twin would not be significantly compromised by delivery. Selecting the appropriate time for delivery is extremely difficult in such cases, because an effort that is intended to save a twin that may already be significantly compromised may lead to iatrogenic morbidity in the healthy twin. Daily, or twice-daily, fetal testing should be performed in cases of absent or reversed end-diastolic flow until delivery is accomplished.
Complications of monochorionic twins

**Twin twin transfusion syndrome (TTS)**
- one twin appears to bleed into other through placental vascular anastomosis.
- Receptor twin becomes larger with hydramnios, polycythemic, hypertensive and hypervolemic
- Donor twin which become smaller with oligohydramnios, anemic, hypotensive and hypovolemic.
- Donor may appear stuck due to severe oligohydramnios.
- Difference of hemoglobin concentration between the twin usually exceeds 5 gm% and estimated fetal weight discrepancy is 25% or more.
Anastomosis between placenta
Complications of monochorionic twins contd...

TTTS contd..

Management

- Antenatal diagnosis: ultrasound with doppler flow study in the placental vascular bed.
- Repeated amniocentesis to control polyhydramnios in recipient twin.
  - prevent preterm labour and placental abruption.
- Selective reduction of one twin is done when survival of both the fetuses is at risk.
- Smaller twin generally have got better outcome.
- Plethoric twin: risk of CCF and hydrops.
- Perinatal mortality: 70%.
Complications of monochorionic twins contd...

*Monoamniocity:*

- Monochorionoc twins leads to high perinatal mortality due to cord problems.

- Prostaglandin synthase inhibitor used to reduce fetal urine output, creating borderline oligohydramnios and to reduce the excessive movements.
Complications of monochorionic twins contd...

**Dead fetus syndrome**

- Death of one twin (2-7%) is associated with poor outcome of the Co-twin (25%) specially in monochorionic placenta.

- The surviving twin runs the risk of cerebral palsy, microcephaly, renal cortical necrosis and DIC.

- This is due to thromboplastin liberated from the dead twin that crosses via placental anastomosis to the living twin.
Complications of monochorionic twins contd...

*Twin reversed arterial perfusion (TRAP):*

- Characterized by an acardiac perfused twin having blood supply from a normal co-twin via large arterio-arterial anastomosis.

*Conjoint twin:*

- Rare.
- Perinatal survival depends upon the type of joint.
- Major cardiovascular anastomosis leads to high mortality.
antepartum Management

• The nadir of perinatal mortality for dichorionic twin pregnancies occurs at approximately 38 weeks, and for triplets at about 35 weeks.

• All twin fetuses should therefore be delivered by 39 weeks of gestation because of the rising perinatal morbidity and mortality beyond that date.

• The rate of stillbirth in multiple gestations at 39 weeks surpassed the risk for singleton gestations at greater than 42 weeks’ gestation in one study.
For uncomplicated monochorionic twins, even in the setting of intensive fetal surveillance, the risk for sudden death after 32 increased.

planned delivery of uncomplicated monochorionic twins should be considered by 34 to 35 weeks’ gestation.

In our practice, we counsel patients about the prospective risk for fetal death after 34 weeks’ gestation, and individualize the decision with each woman regarding the preferred timing of delivery between 34 and 37 weeks’ gestation.
Intrapartum management of the parturient with a multiple gestation requires multidisciplinary cooperation. Adequate obstetric and nursing staff, together with an anesthesiologist and at least one neonatologist or pediatrician, should be present for delivery. Intravenous access and prompt availability of blood products should be ensured.
Antepartum Management of Twin Pregnancy

To reduce perinatal mortality and morbidity rates in pregnancies complicated by twins, it is imperative that:

• Delivery of markedly preterm neonates be prevented

• Fetal-growth restriction be identified and afflicted fetuses be delivered before they become moribund

• Fetal trauma during labor and delivery be avoided, and

• Expert neonatal care be available.
• Vaginal deliveries should be performed in an operating room, because emergent cesarean section may be required for the second twin in a small number of cases—approximately 4% in one large prospective trial.
VERTEX-VERTEX TWINS

• The vertex-vertex presentation occurs in 40% to 45% of all twin pregnancies. In the absence of obstetric indications for cesarean delivery, vaginal birth should be planned regardless of gestational age.
• After delivery of the first twin, the cord should be clamped. No blood samples should be obtained until after delivery of the second twin. Unless the presentation is obviously vertex by clinical examination, ultrasonography should be performed to confirm presentation of the second twin and to exclude a funic presentation. With the availability of continuous electronic fetal heart monitoring, there is no absolute indication to deliver the second twin within a specified time limit.
• The rate of umbilical arterial pH of 7.00 or less was zero when the delivery interval was less than 15 minutes, increasing to 6% for an interval of 16 to 30 minutes, and to 27% for intervals longer than 30 minutes.
VERTEX-NONVERTEX TWINS

- Vertex-breech or vertex-transverse presentation occurs in 35% to 40% of all twin pregnancies.
  Selection of mode of delivery depends on (1) the size of the second twin, (2) the presence of growth discordance (estimated weight of second twin at least 25% greater than first twin), and (3) the availability of obstetric staff skilled in assisted breech delivery, internal podalic version, and total breech extraction. In the absence of an appropriately skilled obstetrician, or if the second twin is significantly larger than the first, cesarean delivery is recommended.
NONVERTEX FIRST TWIN

- Breech-vertex or breech-breech presentation occurs in 15% to 20% of all twin pregnancies. Such cases are almost always managed by cesarean delivery. Historically, this was practiced because of concern about interlocking fetal heads in breech-vertex twins.
- this complication is so rare.
- External cephalic version of a breech-presenting twin has also been described.
Management of difficult cases of twins

Interlocking

- Commonest: After coming head of first baby getting locked with forecoming head of second baby.
- Vaginal manipulation of chin's of the fetuses
- Decapitation of head (1st baby), pushing up decapitated head, followed by 2nd baby and lastly, delivery of decapitated head.
- Occasionally, two heads of both vertex get locked at the pelvic brim preventing engagement of either of the head.
- Disengagement of the higher head: Under general anesthesia, if fails, caesarean section is the alternative
Management during labour contd...

*Delay in the birth of second twin*

- Birth of second twin should be completed within 45 minute of the first twin being born but with close monitoring can be extended if there are no signs of fetal compromise.

- The risk of delays:
  - intrauterine hypoxia,
  - birth asphyxia,
  - sepsis
Indications of caesarean section

Obstetric causes:

- Placenta previa
- Severe preeclampsia
- Previous caesarean section
- Cord prolapse of the first baby
- Abnormal uterine contractions
- Contracted pelvis

- *For twins*: Both fetuses or even first fetus with non-cephalic presentation,

- *Twins with complications*: IUGR, conjoint twins; Monoamniotic twins, monochorionic twins with TTS
Management of difficult cases of twins contd..

Conjoined twins

- Extremely rare.
- Often diagnosed during delivery.
- Presence of a bridge of tissue between the fetuses on vaginal examination confirms the diagnosis.
- Antenatal diagnosis is important.
- Benefits are: reduces maternal trauma and morbidity, improves fetal survival, helps to plan method of delivery, allows time to organize pediatric surgical team.
Postnatal period

Care of the babies

• Immediate care
• Maintenance of body temperature,
• Use of overhead heaters,
• Parents given the opportunity to check the identity tag and cuddle them.

Breastfeeding

• Provide knowledge to mother regarding different positions for breastfeeding, along with advantages, attachment, positioning timing.
Postnatal period contd..

Nutrition

- Expressed breast milk is best (for small babies), they may need to be fed intravenously or by nasogastric tube or cup-fed, depending on their size and general condition.
- Careful monitoring of weight gain, regular capillary blood glucose estimations
- Reassure her that lactation responds to the demands made by babies sucking at the breast.
- At feeding times, mother must be provided support and advised on positioning and fixing babies.

Care of the mother

- Slow involution of uterus, increased ‘After pains’ so analgesia should be offered.
- High calorie diet.
- Teach extra support to handle twin babies
THANK YOU