# MULTIPLE PREGNANCY

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# MULTIPLE PREGNANCY

## DEFINITION

- Multiple pregnancy- occurs when more than one fetus simultaneously develop in the uterus.
- Twin pregnancy- Is the simultaneous development of two fetuses.
- Although rare, Development of three fetus (triplets), four (quadruplet), five(quintuplets), six (sextuplets) may also occur.

# TWIN PREGNANCY

- Twin pregnancy is the commonest variety of multiple pregnancy.
- It is of two types:

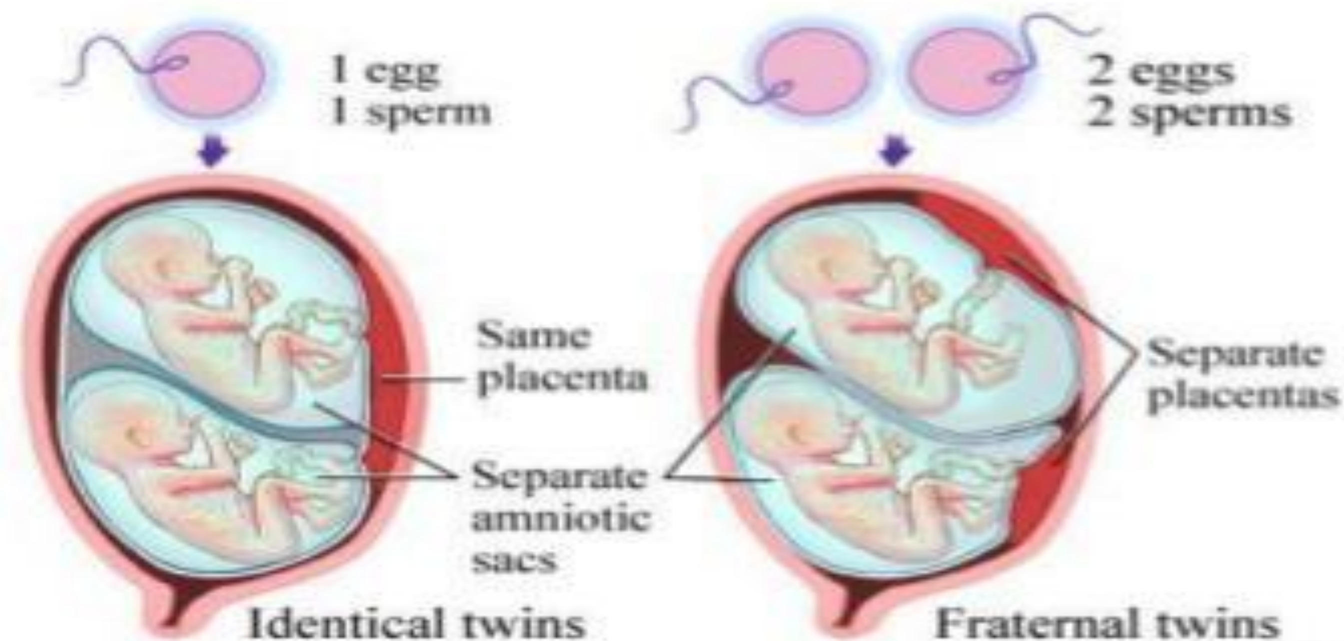
1. Dizygotic twins (80%),which results from fertilization of two ova leading to fraternal twin.
2. Monozygotic twins(20%),which results from fertilization of one ova leading to identical twin.

# • VARIETIES

1. Dizygotic twins:- it is most common (80%) and result from the fertilization of two ova.
2. Monozygotic twins:- (20%) results from the fertilization of single ovum.

# Genesis of twins

- Imonozygotic twins (syn. identical, uniovulvar)
- Dizygotic twins (syn: fraternal, binovular



## Genesis of dizygotic twins

Results from Fertilization of two ova, mostly likely rupture from two distinct graafian follicles usually of the same or one from each ovary, by two sperms during single ovarian cycle.

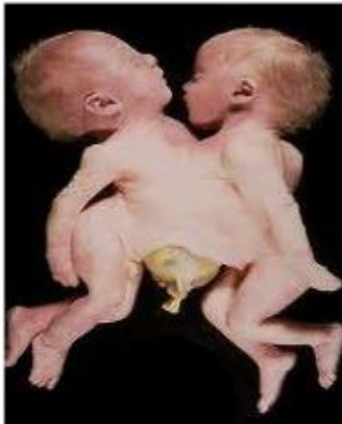
## Genesis of monozygotic

- The twinning may occur at different periods after fertilization.
- If the division takes place within 72hours after fertilization (prior to morula stage) resulting embryos will have two separate placenta, chorion, amnions (diamniotic-dichorionic)

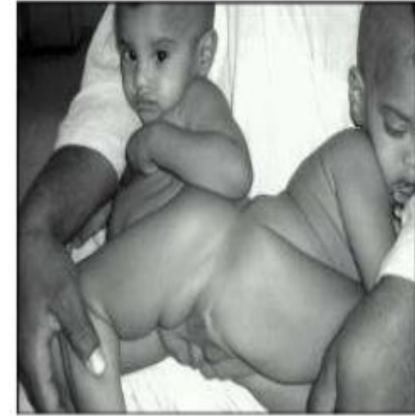
# SIAMESE TWINS

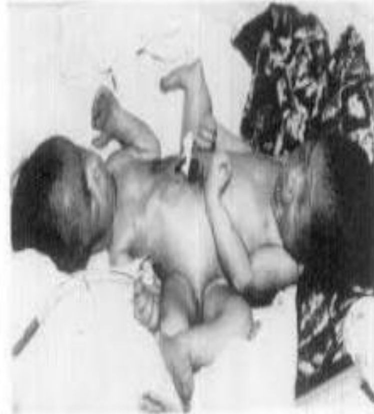
## Conjoint twins

- Always monozygotic
- classification
  - ✓Thoracopagus
  - ✓Craniopagus
  - ✓omphalopagus



✓Pygopagus





✓ischiopagus

Prenatal diagnosis-to counsel the parents for mtp / to plan site & mode of delivery...

# EXAMINATION OF PLACENTA AND MEMBRANES

## DIZYGOTIC TWINS

- Most common represents 2/3 of cases.
- Fertilization of more than one egg by more than one sperm.
- Non identical ,may be of different sex.
- Two chorion and two amnion.
- Placenta may be separate or fused.

- If the division takes place between 4th and 8th day after the formation of inner cell mass when chorion has arleady developed - diamniotic monochorionic twins develop.
- If division occurs takes place after 8th day of fertilization when amniotic cavity has arleady formed (monoamniotic monochorionic twins)
- Division after two weeks of davit of embryonic disc resulting in the formation of conjoined twin.

# Factors affecting dizygotic twinning

❖Ethnic group

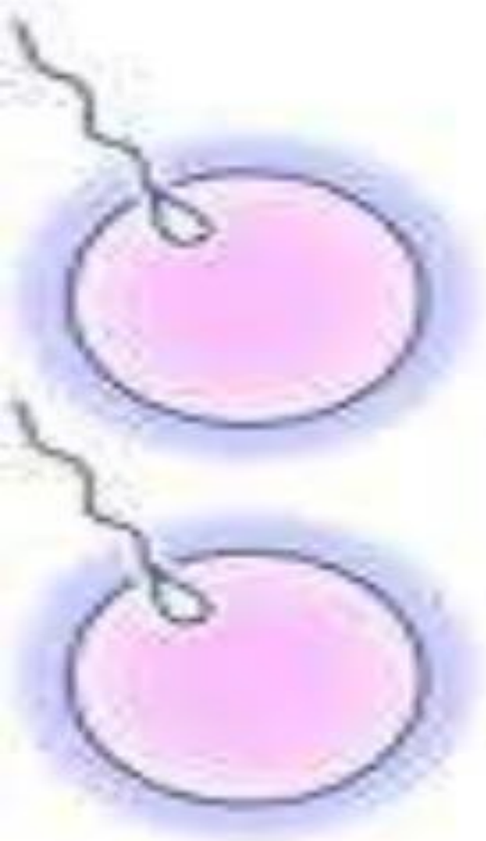
❖Increasing maternal age

❖Increasing parity

❖Family h/o twinning, esp maternal

❖Ovulation induction

# DIZYGOTIC



amnion

2 chorions

amnion

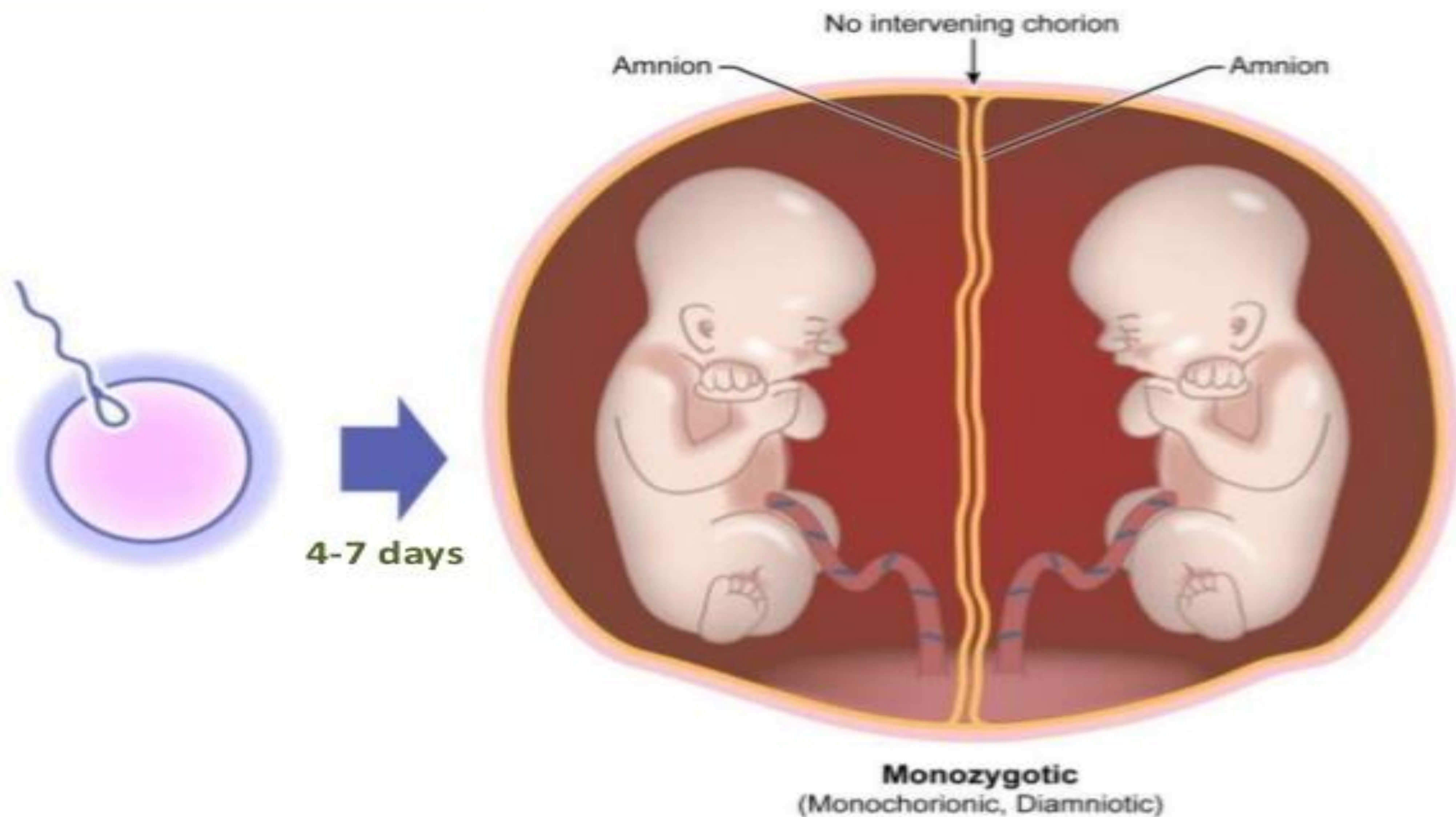
- Always dichorionic & diamnionic

Dizygotic (Dichorionic, Diamniotic)

# MONOZYGOTIC TWINS

- Constant incidence of 1:250 births.
- Not affected by heredity.
- Not related to induction of ovulation.
- Constitutes 1/3 of twins.
- 70% are diamniotic monochorionic.
- 30% are diamniotic dichorionic.

# MONOZYGOTIC



# Examination of placenta and membranes

| Dizygotic Twin | Monozygotic twin |
| --- | --- |
| Two placenta, either completely separated or more commonly fused at the margin appearing to be one.<br>No anastomosis between the two fetal vessels. | Placenta is single.<br><br>Varying degrees of anastomosis between the two fetal vessels. |
| Each fetus is surrounded by a amnion and chorion | Each fetus is surrounded by a separate amniotic sac with the chorionic layer common to both. |
| Intervening membranes consist of 4 layers-amnion, chorion, chorion and amnion. | Intervening membrane consists of two layers of amnion only. |

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%

- *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.

# *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.

# PREVALENCE OF DIAZYGOTIC TWINS

- 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:* 5th gravid onwards.
- *Nutritional Factors:* Taller, heavier women—twinning rate 25 to 30 % greater.
- *Pituitary Gonadotropin*
- *Infertility Therapy*
- *Assisted Reproductive Technology*

- *Superfecundation*
- *Superfetation*
- *Fetus papyraceous or compressus*
- *Fetus acardius*
- *Hydatidiform mole*
- *Vanishing twin*

# *LIE AND PRESENTATION*

- *The most common lie of fetuses is longitudinal(90%)but malpresentation are quite common*

1. *Both very(50%)*
2. *First vertex and second breech(30%)*
3. *First breech and second vertex(10%)*
4. *Both breech(10%)*

# Diagnosis of twins pregnancy

HISTORY

1. History of ovulation inducing drugs
2. Family history of twinning(maternal side)

# Diagnosis of twins pregnancy

SYMPTOMS

- Minor ailments of normal pregnancy are often exaggerated. Some of the symptoms are related to the undue enlargement of the uterus:

I. Increased nausea and vomiting in early months

II. Cardiorespiratory embarrassment – palpitations, shortness of breath.

III. Tendency of swelling of legs, varicose veins and haemorrhoids is greater.

IV. Unusual rate of abdominal enlargement and excessive fetal movement may be noticed.

# Diagnosis of twins pregnancy

GENERAL EXAMINATION:

1. increased prevalence of anemia
2. Unusual weight gain not explained by preeclampsia or obesity
3. Evidence of preeclampsia is a common association

# Diagnosis of twins pregnancy

**ABDOMINAL EXAMINATION**

1. Elongated shape of normal pregnant uterus is changed to a more barrel shape and the abdomen is unduly enlarged
2. **Height of the uterus is more than gestation age.**
3. Fetal bulk seems disproportionally larger in relation to the size of fetal head.
4. **Palpation of too many fetal parts**
5. **Finding two fetal heads.**
6. **Two distinct fetal heart sounds at separate spots with a silent area in between.**

# Diagnosis of twins pregnancy

## INVESTIGATION

### 1. SONOGRAPHY

- Separate gestational sacs can be identified early in twin pregnancy
- Two fetal heads or two abdomens should be seen in the same plane, to avoid scanning the same fetus twice and interpreting it as twins.

## Radiologic Examination

- Not useful and may lead to an incorrect diagnosis

## Biochemical Test

- Amounts of chorionic gonadotropin in plasma and in urine, on average, are higher than those found with a singleton pregnancy, but not so high as to allow a definite diagnosis of multiple fetuses

# DIFFERENTIAL DIAGNOSIS

In women with a uterus that appears large for gestational age, the following possibilities are considered:

1. Elevation of the uterus by a distended bladder
2. Inaccurate menstrual history
3. Big baby
4. Hydramnios
5. Ascites with pregnancy.
6. Hydatidiform mole
7. Uterine myomas
8. A closely attached adnexal mass

# Complications of twin pregnancy

## Maternal

## During pregnancy

1. Exaggerated early symptoms (nausea, vomiting)
2. Increased miscarriage risk
3. malpresentation
4. Increased minor disorders of pregnancy (back-ache, leg pain, inability to walk properly,hemorrhoides,palpitations dyspnoea and varicosities)
5. Anemia and placenta previa
6. Preterm labor and delivery (PTL)
7. Risk of hypertensive disease
8. Ante partum hemorrhage (APH)

# During labour

1. PROM
2. cord prolapse
3. Prolonged labour
4. Increased op interference
5. Bleeding (intrapartum) - IPH
6. PPH

# During puerperum

1. Subinvolution
2. Increased risks of infections
3. Lactation failure

# Complications to fetus

1. Still birth/ neonatal death
2. abortion
3. Single fetal death in twin pregnancy
4. IUGR (intrauterine growth restriction)
5. SGA (small for gestational age)
6. Higher risks of congenital anomalies

# DISCORDANT GROWTH OF THE MONOCHORIONIC TWINS

# COMPLICATIONS OF MONOCHORIONIC TWI

**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.

# TWIN-TWIN TRANSFUSION SYNDROME MANAGEMENT

**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%.

### *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.

***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.

## Antenatal management

- Diet-about 350kcal/day
- Increased rest at home and early cessation of work
- Increased number of antenatal visit
- Supplementally therapy-Fe increase 100-200mg/day, vitamins, calcium and folic acids
- Uss- frequent after every 3-4 weeks

- Pre term labour at a GA of less than 34weeks -give corticosteroids.
- Note: twins develop pulmonary maturity 3-4 weeks earlier than singleton

# Management during labour

- Vaginal delivery-both or at least one baby in vertex presentation.
- Bed rest-prevent early rupture of membrane
- Fetal monitoring (electronic)
- Internal examination should be done soon after the rupture of the membrane to exclude cord prolapse
- Ringers lactate and 1 unit for BT-ready

# DELIVERY OF TWIN FETUSES

## Complications of labor and delivery

- preterm labor,
- uterine contractile dysfunction
- abnormal presentation, prolapse of the umbilical cord
- premature separation of the placenta
- immediate postpartum hemorrhage

# Method Of Delivery

***Vertex- Vertex (50%)***

- Vaginal delivery, interval between twins not to exceed 20 minutes.

***Vertex- Breech (20%)***

Vaginal delivery by senior obstetrician

***Breech- Vertex( 20%)***

- Safer to deliver by CS to avoid the rare interlocking twins( 1:1000 twins ).

***Breech-Breech( 10%)***

- Usually by CS.

# Vaginal Delivery

- When the first twin is cephalic, delivery can usually be accomplished spontaneously or with forceps.
- As in singletons, when the first fetus presents as a breech, major problems are most likely to develop if:

  - fetus is unusually large and the aftercoming head is larger than the capacity of the birth canal.

  - Fetus is sufficiently small so that the extremities and trunk are delivered through a cervix inadequately effaced and dilated to allow the head to escape easily.

  - umbilical cord prolapses.

# Cesarean Delivery

- The American College of Obstetricians and Gynecologists (1998) has concluded that, in general, cesarean delivery is the method of choice when the first twin is noncephalic.
- It is important to place patients in a left lateral tilt so as to deflect the uterine weight off the aorta to avoid hypotension.
- The uterine incision should be large enough to allow atraumatic delivery of both fetuses.
- It is important that the uterus remain well contracted during completion of the cesarean delivery and thereafter.
- Remarkable blood loss may be concealed within the uterus and vagina and beneath the drapes during the time taken to close the incisions.

# Management of difficult cases of twins

*Interlocking*

- Commonest: A... f first baby getting locked with forecomin... by.

- Vaginal manip... hins of the fetuses
- Decapitation ... , pushing up decapitated head, followec... nd baby and lastly, delivery of decapitated
- 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

THANK YOU