Multiple Pregnancy

Multiple Pregnancy/ Multifetalpregnancy

- **The presence of more than one fetus in the gravid uterus is called multiple pregnancy**
- Two fetuses (twins)
- Three fetuses (triplets)
- Four fetuses (quadruplets)
- Five fetuses (quintuplets)
- Six fetuses (sextuplets)

INCIDENCE

Hellin's Law:

Twins: 1:89

Triplets: $1:89^2$

Quadruplets: $1:89^3$

Quintuplets: $1:89^4$

Conjoined twins: 1 : 60,000

Worldwide incidence of monozygotic - 1 in 250

Incidence of dizygotic varies & increasing

Demography

- Race: most common in Negroes
- Age: Increased maternal age
- Parity: more common in multipara
- Heredity - family history of multifetal gestation
- Nutritional status – well nourished women
- ART - ovulation induction with clomiphene citrate, gonadotrophins and IVF
- Conception after stopping OCP

Twins

Varieties:

- **1. Dizygotic twins:** commonest (Two-third)
- **2. Monozygotic twins** (one-third)

Genesis of Twins:

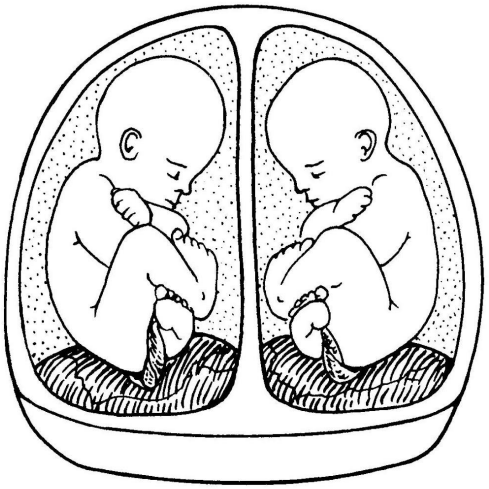
- **Dizygotic twins (syn: Fraternal, binovular)** -

  - fertilization of two ova by two sperms.

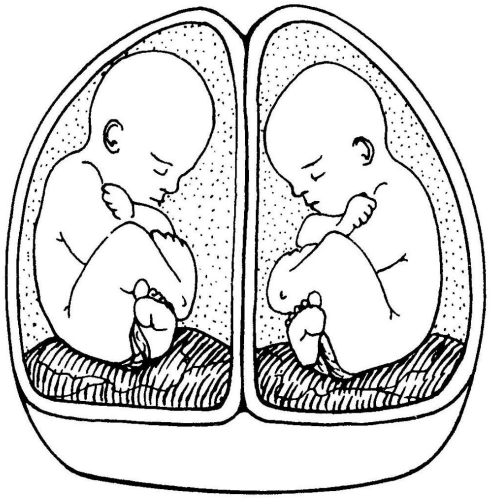
Monozygotic twins (syn: Identical, uniovular):

- **Upto 3 days -** diamniotic-dichorionic
- **Between 4^{th} & 7^{th} day** - diamniotic monochorionic - most common type
- **Between 8^{th} & 12^{th} day-** monoamniotic-monochorionic
- **After 13^{th} day -** conjoined / Siamese twins.

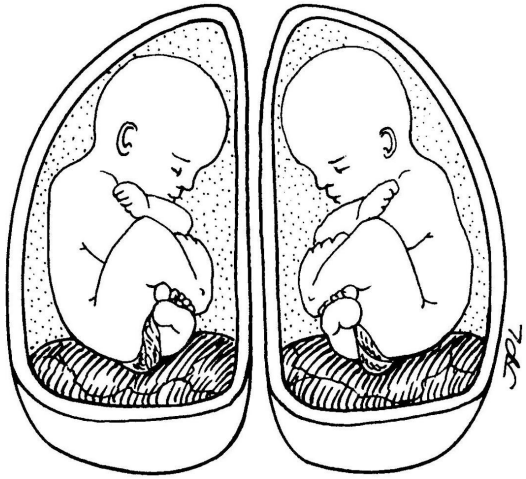
Monochorionic/Monoamniotic



Monochorionic/Diamniotic



Dichorionic/Diamniotic
(Fused Placenta)



Dichorionic/Diamniotic
(Separate Placenta)

Conjoined twins

Ventral:

1) Omphalopagus

2) Thoracopagus

3) Cephalopagus

4) Caudal/ ischiopagus

Lateral:

1) Parapagus

Dorsal:

1)Craniopagus,

2)Pyopagus

Superfecundation

Fertilization of two different ova released in the same cycle

Superfetation

Fertilization of two ova released in different cycles

Differences in zygocity

Monozygotic

- 1 ova + 1 sperm
- Same sex
- Identical features
- Single or double placenta
- Same genetic features
- DNA microprobe -same

Dizygotic

- 2 ova + 2 sperm
- Same or opposite sex
- Fraternal resemblance
- Double or s/t fused
- Different genetic features
- DNA microprobe - different

Differences in chorionicity with single placenta

D / D (fused placenta)

- Monozygotic or dizygotic
- Thick dividing membrane > 2mm
- Twin peak / lambda sign

M / D

- Monozygotic
- Thin dividing membrane 2mm or less
- T sign

Diagnosis

- **HISTORY:**
  I. History of ovulation inducing drugs specially gonadotrophins
  II. Family history of twinning (maternal side).
- **SYMPTOMS:**
  i. Hyperemesis gravidorum
  ii. Cardio-respiratory embarrassment - palpitation or shortness of breath
  iii. Tendency of swelling of the legs,
  iv. Varicose veins
  v. Hemorrhoids
  vi. Excessive abdominal enlargement
  vii. Excessive fetal movements.

GENERAL EXAMINATION:

I. Prevalence of anaemia is more than in singleton pregnancy
II. Unusual weight gain, not explained by pre-eclampsia or obesity
III. Evidence of preeclampsia(25%)is a common association.

ABDOMINALEXAMINATION:

Inspection:

- The elongated shape of a normal pregnant uterus is changed to a more "barrel shape" and the abdomen is unduly enlarged.

- **Palpation:**

Fundal height more than the period of amenorrhoea

girth more than normal

Palpation of too many fetal parts

Palpation of two fetal heads

Palpation of three fetal poles

- **Auscultation:**

Two distinct fetal heart sounds with

Zone of silence

10 beat difference

D/D of increased fundal height

- Full bladder
- Wrong dates
- Hydramnios
- Macrosomia
- Fibroid with preg
- Ovarian tumor with preg
- Adenexal mass with preg
- Ascitis with preg
- Molar pregnancy

INVESTIGATIONS

- **Sonography:** In multi fetal pregnancy it is done to obtain the following information:
  i. **Suspecting twins – 2 sacs with fetal poles and cardiac activity**
  ii. **Confirmation of diagnosis**
  iii. **Viability of fetuses, vanishing twin**
  iv. **Chorionicity – 6 to 9 wks (single or double placenta, twin peak sign in d /d gestation or Tsign in m/d)**
  v. **Pregnancy dating,**

Sonography (ctd)

i. **Fetal anomalies**
ii. **Fetal growth monitoring (at every 3-4 weeks interval) for IUGR**
iii. **Presentation and lie of the fetuses**
iv. **Twin transfusion (Doppler studies)**
v. **Placental localization**
vi. **Amniotic fluid volume**

- **Radiography**
- **Biochemical tests**: raised but not diagnostic

  Maternal serum chorionic gonadotrophin,

  Alpha fetoprotein

  Unconjugated oestriol

Lie and Presentation

Longitudinal lie (90%)

1. both vertex (40%)
2. Vertex + breech (28%)
3. breech + vertex (9%)
4. both breech (6%)

Others

vertex + transverse

breech + transeverse

both transeverse

Complications

- **Maternal**
  - Pregnancy
  - Labour
  - Puerperium
- **Fetal**
- **MATERNAL: During pregnancy:**
  - miscarriages
  - Hyperemesis gravidorum
  - Anaemia
  - Pre-eclampsia (25%)
  - Hydramnios (10 %)

- **GDM (2 – 3 times)**
- **Antepartum hemorrhage –** placenta previa and placental abruption
- **Cholestasis of pregnancy**
- **Malpresentations**
- **Preterm labour (50%)** twins – 37 weeks, triplets – 34 weeks, quadruplets – 30 weeks
- **Mechanical distress** such as palpitation, dyspnoea, varicosities and haemorrhoids
- Obstructive uropathy

During Labour:

- Prelabour rupture of the membranes
- Cord prolapse
- Incoordinate uterine contractions
- Increased operative interference
- Placental abruption after delivery of 1st baby
- Postpartum haemorrhage

During puerperium:

Subinvolution

Infection

Lactation failure

FETAL – more with monochorionic

- **Spontaneous abortion**
- **Single fetal demise**

  Vanishing twin – before 10 weeks

  Fetus papyraceous/compressus – 2nd trim

  Complications in 2nd twin (depend on chorionicity)

  – neurological, renal lesions

  - anaemia, DIC

  - hypotension and death

FETAL – more with monochorionic

- **Low birth weight (90%)**

  Prematurity – spontaneous or iatrogenic

  Fetal growth restriction - in 3rd trimester, asymmetrical, in both fetus

- **Discordant growth** - Difference of >25% in weight , >5% in HC, >20mm in AC, abnormal doppler waveforms -

  Causes – unequal placental mass, lower segment implantation, genetic difference, TTTS, congenital anomaly in one

- **FETAL COMPLICATIONS (ctd)**
- **Congenital anomalies –** conjoined twins, neural tube defects – anencephaly, hydrocephaly, microcephaly, cardiac anomalies, Downs syndrome, talipes, dislocation of hip
- **TTTS -Twin to twin transfusion syndrome**

  - cause – AV communication in placenta – blood from one twin goes to other – donor to recipient

  - donor – IUGR, oligohydramnios

  - recipient – overload, hydramnios, CHF, IUD

- **FETAL COMPLICATIONS (ctd)**
- **TRAP -Twin reversed arterial perfusion syndrome or Acardiac twin** - absent heart in one fetus with arterio-arterial communication in placenta, donor twin also dies
- **Cord entanglement and compression** – more in monoamniotic twins
- **Locked twins**
- **Asphyxia –** cord complication, abruption
- **Still birth** – antepartum or intrapartum cause

Monoamniotic twins

high perinatal morbidity, mortality.

Causes : cord entanglement

congenital anomaly

preterm birth

twin to twin transfusion syndrome

Antenatal Management

- **Diet: additional** 300 K cal per day, increased proteins, 60 to 100 mg of iron and 1 mg of folic acid extra
- **Increased rest**
- **Frequent and regular antenatal visit**
- **Fetal surveillance by USG –** every 4 weeks
- **Hospitalisation** not as routine
- **Corticosteroids -**only in threatened preterm labour , same dose
- Birth preparedness

Management During Labour

- **Place of delivery**: tertiary level hospital
- **FIRST STAGE**:

  blood to be cross matched and ready

  confined to bed, oral fluids or npo

  intrapartum fetal monitoring

  ensure preparedness
- **SECOND STAGE** – first baby
- - second baby

Management During Labour

- **SECOND STAGE** –delivery of first baby

  as in singleton pregnancy

  start an IV line

  no oxytocic after delivery of first baby

  secure cord clamping at 2 places before cutting

  ensure labeling of 1st baby

- Delivery of second twin

  FHS of second baby

  lie and presentation of second twin

  wait for uterine contractions

  conduct delivery

Management During Labour

- Delivery of second twin – problems & interventions

  -inadequate contraction- augmentation – ARM, oxytocin

  -transverse lie – ECV, IPV

  -fetal distress, abruption, cord prolapse- expedite delivery – forceps, ventouse, breech extraction

- THIRD STAGE – AMTSL

  - continue oxytocin drip

  - carboprost 250µgm IM

  - monitor for 2 hours

Indications of caesarean

- Non cephalic presentation of first twin
- Monoamniotic twins
- Conjoined twins
- Locked twins
- Other obstetric conditions
- Second twin – incorrectible lie, closure of cervix