MULTIPLE PREGNANCY

Presented by,

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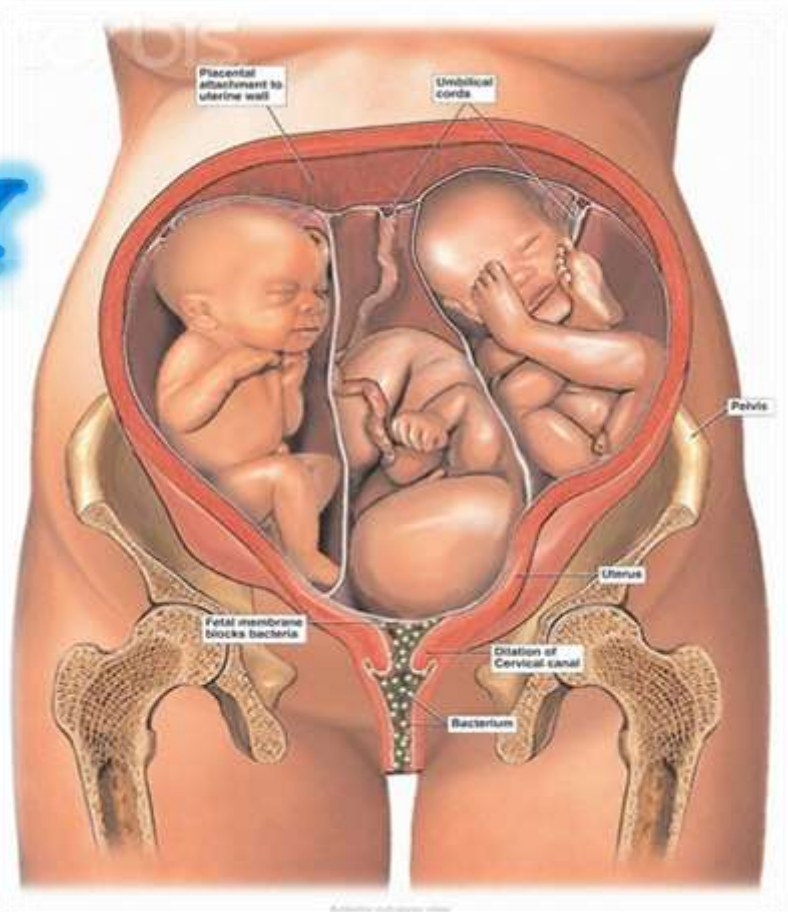
MULTIPLE PREGNANCY



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Introduction

When two or more embryos develop in the uterus at the same time the condition is known as multiple pregnancy. These are considered as complicated pregnancies because there is an appreciable increase in morbidity and mortality.

Terminologies

High order multiples :Three or more offspring in one birth

Zygote: Fertilized ovum for the first three weeks following conception.

Zygosity: It refers to the similarity of genes for a trait

Vanishing twin: Occasional death of one fetus and continuation of pregnancy with surviving one. The dead fetus simply vanishes by resorption

Terminologies

Chorionicity : Number of chorionic membranes surrounding babies in a multiple pregnancy

Fetus papyraceous or compress: Is a state which occurs if one of the fetus dies early .The dead fetus is flattened and compressed between the membrane of the living fetus and uterine wall

Definition

When more than one fetus simultaneously develops in the uterus it is called as multiple pregnancy

- D.C.Dutta

Incidence

Hellins rule: one in about 89 pregnancies ends in the birth of twins, triplets once in 89 births, and quadruplets once in 89 births.

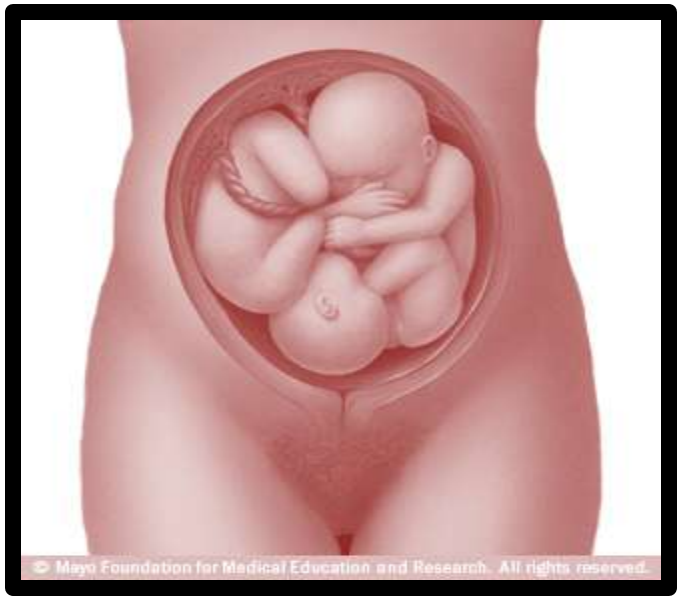
- **It is highest in Nigeria 1 in 20**
- **Lowest in eastern countries**
- **In India the incidence is about 1 in 80**

Various forms of multiple pregnancy

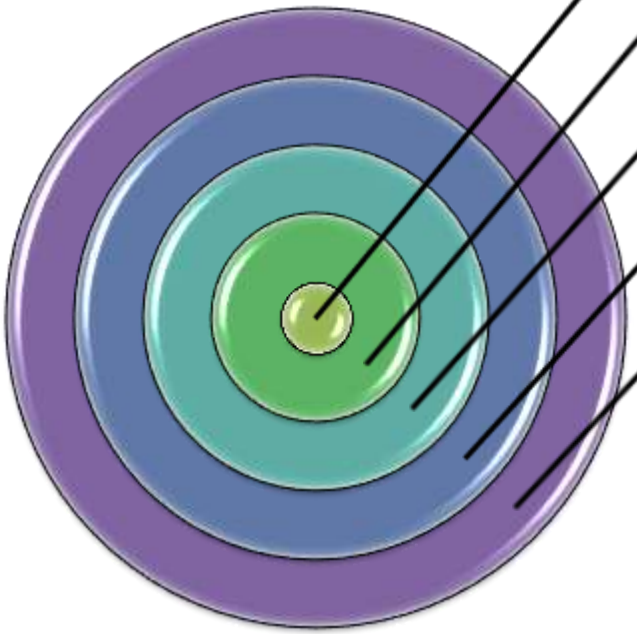
- Two Offspring – Twins
- Three Offspring – Triplets
- Four Offspring – Quadruplets
- Five Offspring – Quintuplets
- Six Offspring – Sextuplets
- Seven Offspring – Septuplets
- Eight Offspring – Octuplets
- Nine Offspring – Nonuplets
- Ten Offspring – Decaplets

Twins

Simultaneous development of two fetuses in the uterus. It is the commonest variety of multiple pregnancy.



Etiology



- Race
- Hereditary
- Advancing age
- Influence of parity
- Iatrogenic

Etiology

Race	➢Highest:Negroes ➢Lowest:Mongolis ➢Intermediate:Caucasions
Hereditary	➢More transmitted through females
Advancing age of mother	➢Peak age between 30 to 35 years

Etiology

Influence of parity

- Incidence increases from fifth gravida onwards

Iatrogenic

- Drugs used for induction of ovulation
- Gonodotrophin therapy:20 to 40%
- Clomiphene citrate: Lesser extent

Varieties of twins

Monozygotic twin (identical)

Dizygotic twin(fraternal)

Genesis of twins

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Genesis of twins

Monozygotic twin

- Otherwise called as identical or uninovular twins
- Twinning may occur at different periods after fertilization and this markedly influences the process of implantation and formation of fetal membranes

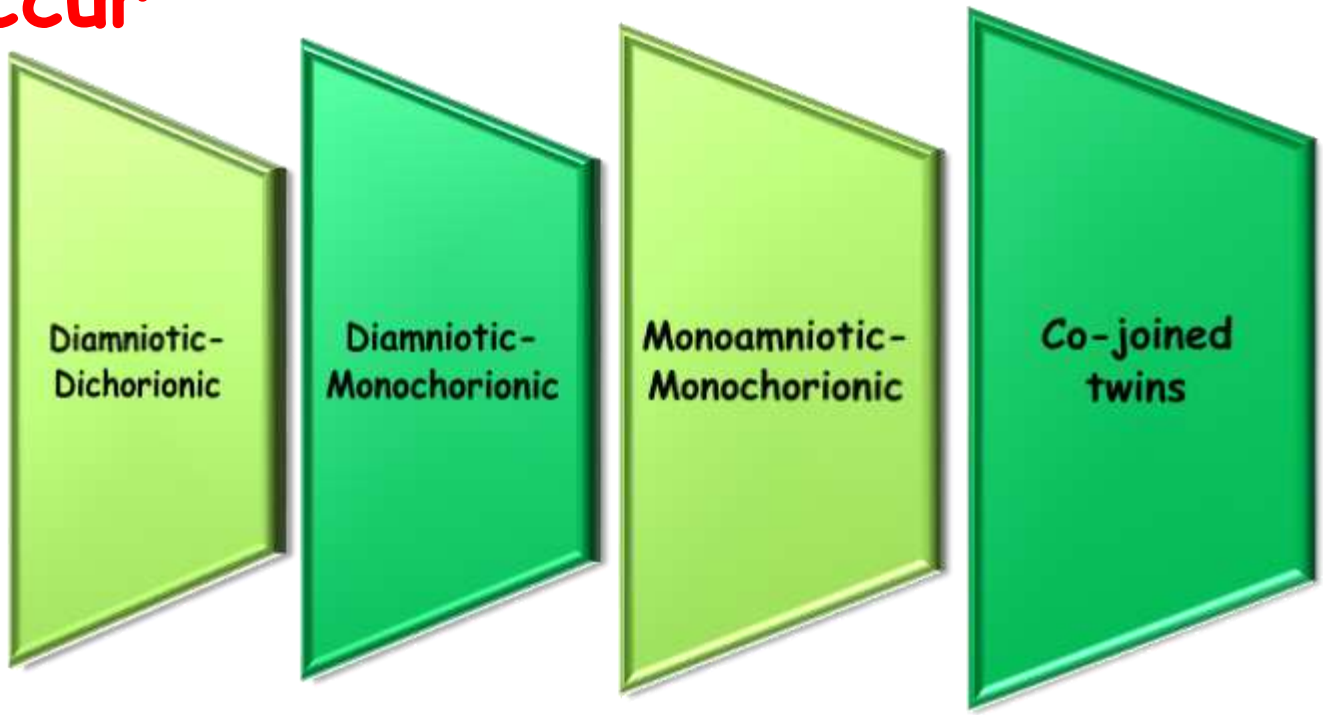
Genesis of twins

Dizygotic twin

- Otherwise called as fraternal or binovular twins
- Dizygotic twins results from the fertilization of two ova by two sperms during a single ovarian cycle
- The babies bear only fraternal resemblance to each other

Genesis of twins

Monozygotic twin: On rare occasion the following possibilities may occur



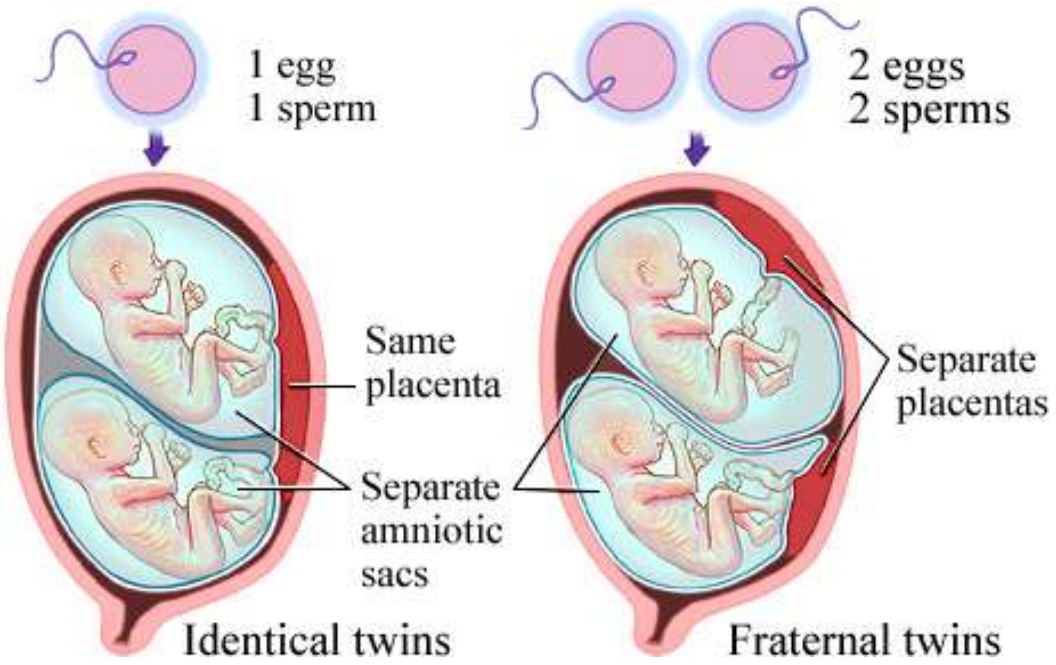
Monozygotic twin: On rare occasion the following possibilities may occur

POSSIBILITIES IN MONOZYGOTIC TWINS

D/D with separate placenta

D/D with fused placenta

M/M



Conjoint twins

Genesis of twins

Monozygotic twin: On rare occasion the following possibilities may occur

Diamniotic-Dichorionic	If the division takes place with in 72 hours after fertilization (prior to morula stage) the resulting embryo will have two separate placenta,chorion and amnions
Diamniotic-Monochorionic	If the division takes place between 4th and 8th day after the formation of inner cell mass when chorion has already developed , The resulting embryo will have single placenta and two separate amniotic sac
Monoamniotic-Monochorionic	If the division occurs after 8th day of fertilization when the amniotic cavity has already formed
Co-joint twins	On rare occasion division occurs after two weeks of development of embryonic disc s

Types of dizygotic twins

- Superfetation
- Superfecundation

Rare forms of multiple pregnancy

- **Superfecundation**:Is the fertilization of two different ova released in the same cycle by separate acts of coitus within a short period of time
- **Superfetation**:Is the fertilization of two ova released in different menstrual cycle

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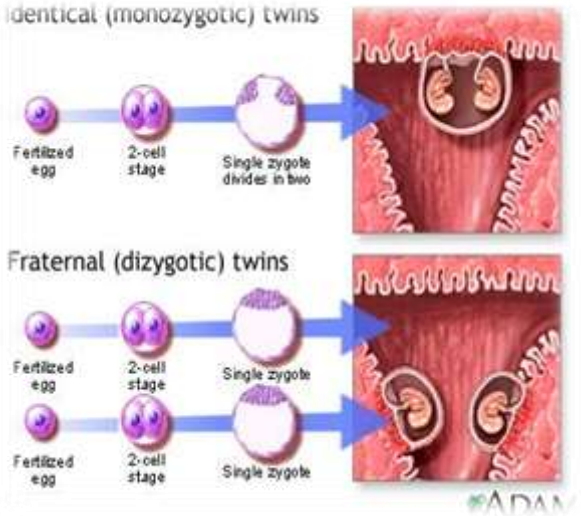
Determination of zygosity

Determination of zygosity means determining whether or not the twins are identical



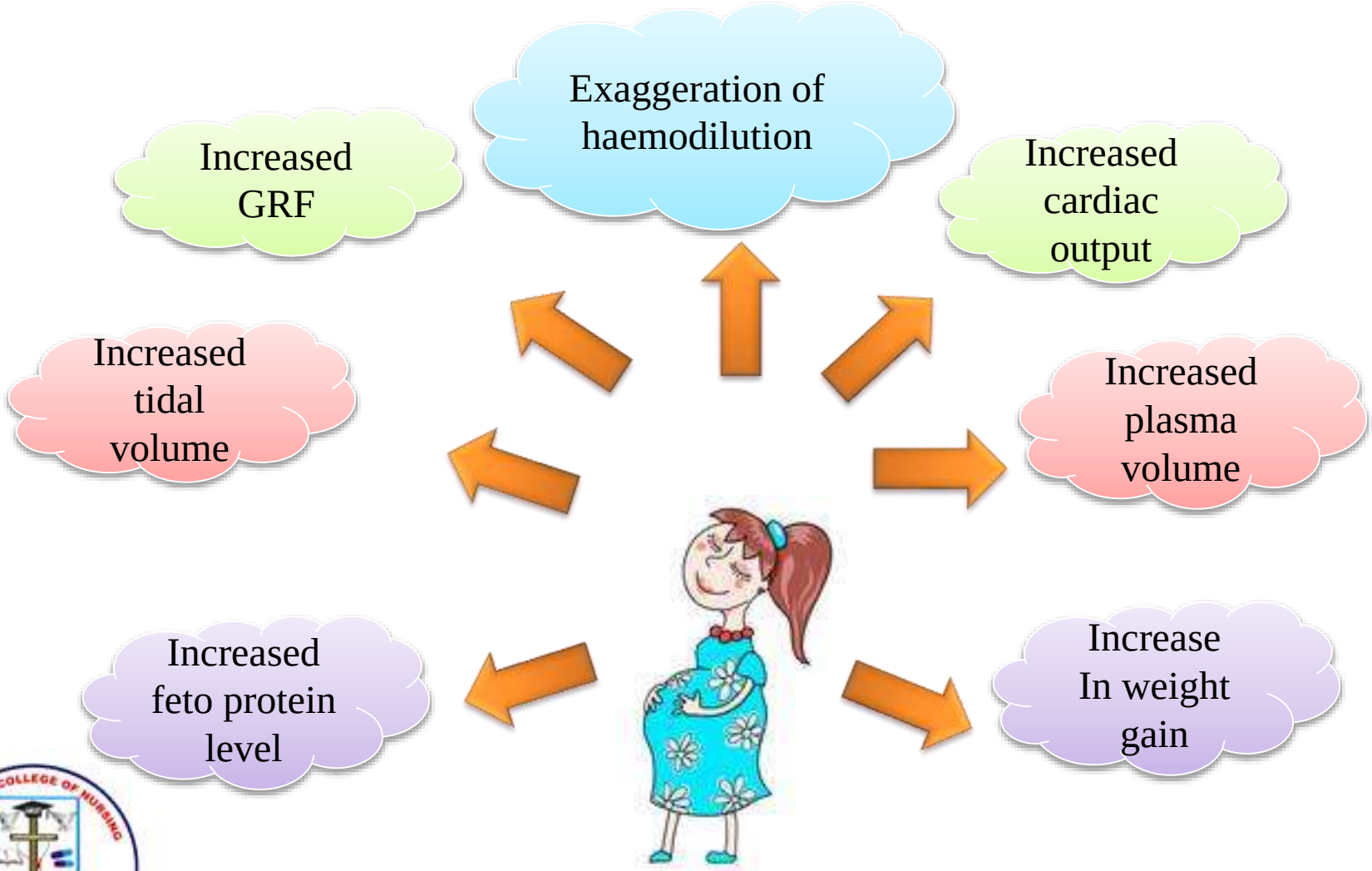
Determination of zygosity

	Placenta	Communicating vessel	Intervening membrane	Sex	Genetic features (Dominant blood group)	Skin grafting (Reciprocal)	Follow up
Mono zygotic	One	Present	2 Amnions	Always identical	Same	Acceptance	Identical
Di zygotic	Two	Absent	4 2 Amnions 2 chorions	May differ	Different	Rejection	Not identical

Maternal physiological changes

Multiple pregnancy imposes physical changes on the mother in excess of those seen in singleton pregnancy

Maternal physiological changes



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Lie and presentation

The combination of presentation of fetus are

VV	BB	TT
VB	BV	TV
VT	BT	TB

- Both vertex
- First vertex second breech
- First breech second vertex
- Both breech
- First vertex second transverse
- Both transverse

LIE AND PRESENTATION

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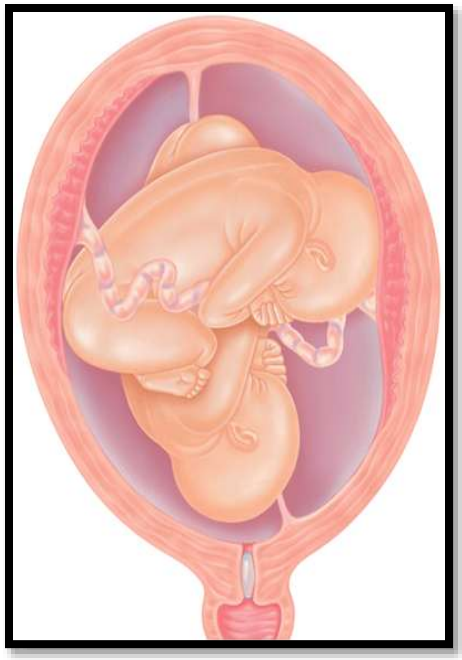
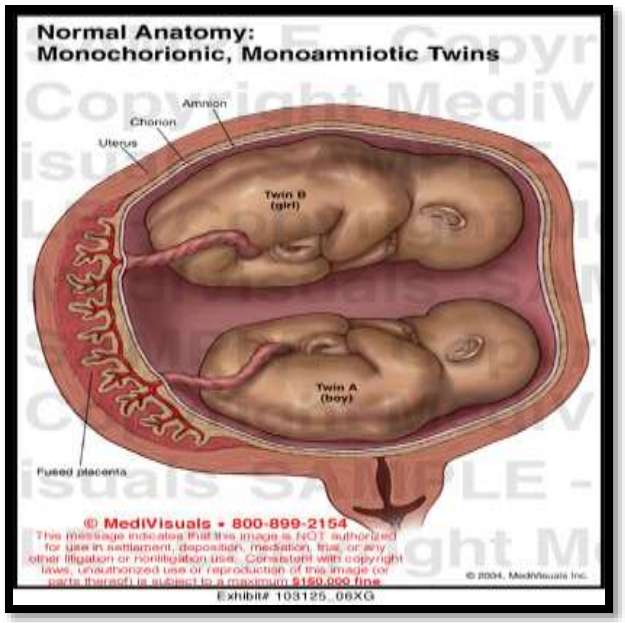
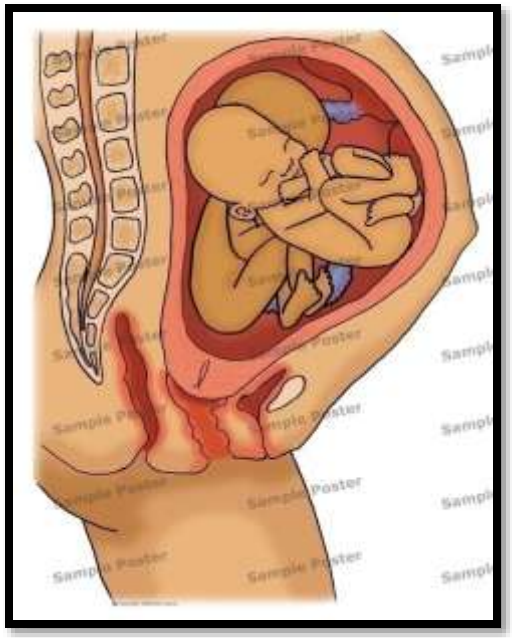
Lie and presentation



Transverse vertex

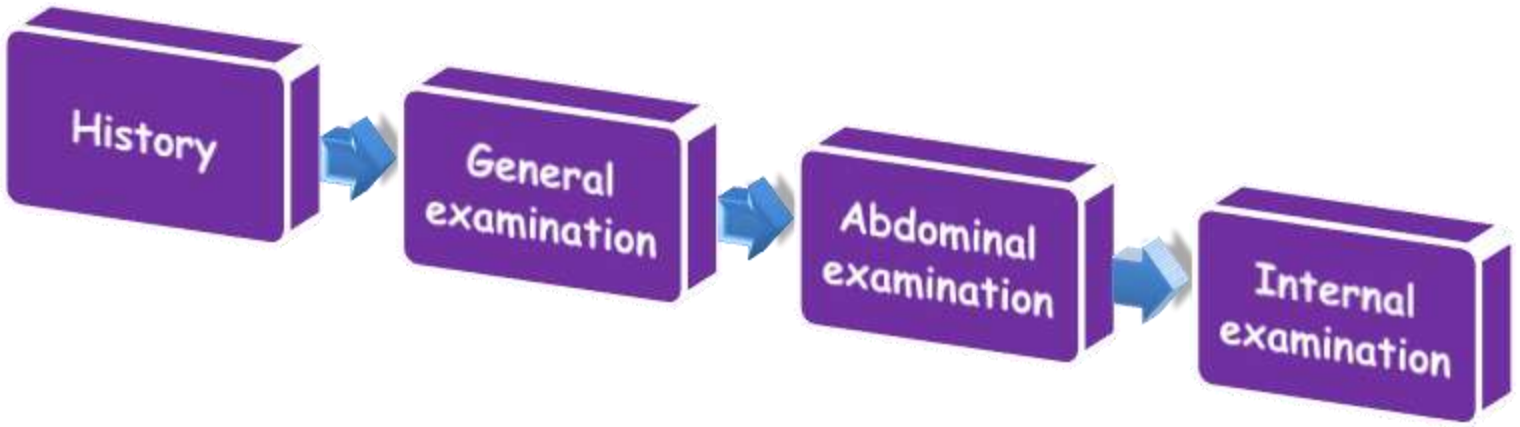


Transverse Transverse



Transverse breech

Diagnosis


History
General examination
Abdominal examination
Internal examination

Diagnosis

History collection:

- History of ovulation inducing drugs specifically gonadotrophins for infertility or use of ART
- Family history of twinning

Diagnosis

Symptoms:

- Minor ailments of normal pregnancy are often exaggerated,
- Increased nausea and vomiting
- Cardio respiratory embarrassment (palpitation, shortness of breath)
- Tendency of swelling of legs
- Varicose vein
- Haemorrhoids
- Unusual rate of abdominal enlargement
- Excessive fetal movements

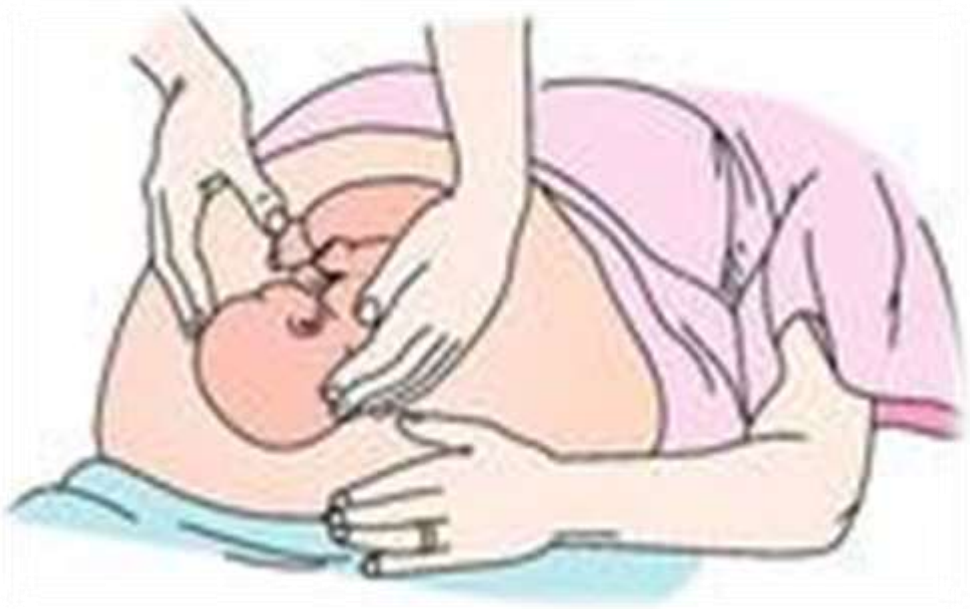
Diagnosis

General examination:

- Prevalence of anaemia
- Unusual weight gain
- Evidence of pre eclampsia

Diagnosis

Abdominal examination



Diagnosis

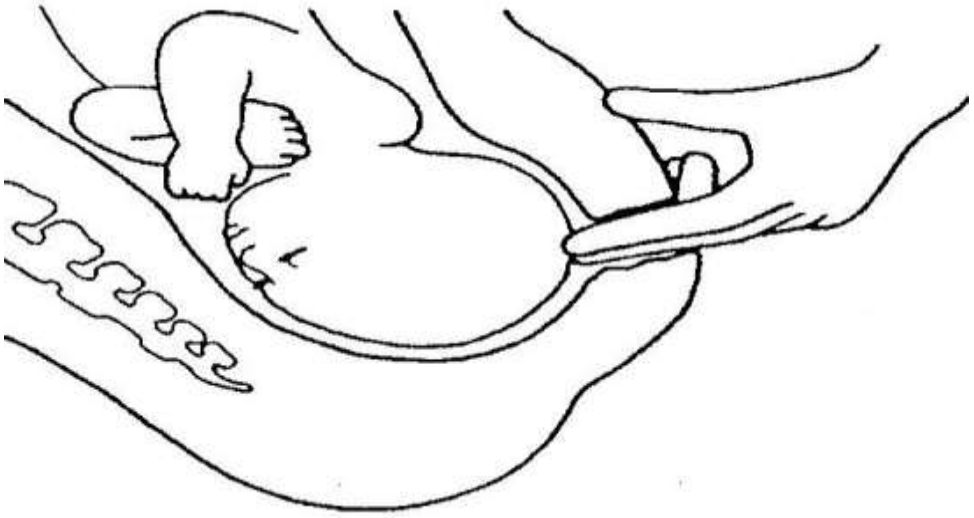
Abdominal examination

Inspection	Shape: Barrel shape
Palpation	➢Height of uterus more than the period of amenorrhoea ➢Abdominal girth:100cm ➢Fetal bulk disproportionately larger in relation to the size of fetal heads ➢Palpation of too many fetal parts ➢Finding of two fetal heads or three fetal poles
Auscultation	➢Simultaneous hearing of two distinct fetal heart sounds located at separate spots with a silent area in between by two observers ➢Difference in heart rate is atleast 10 beats/min

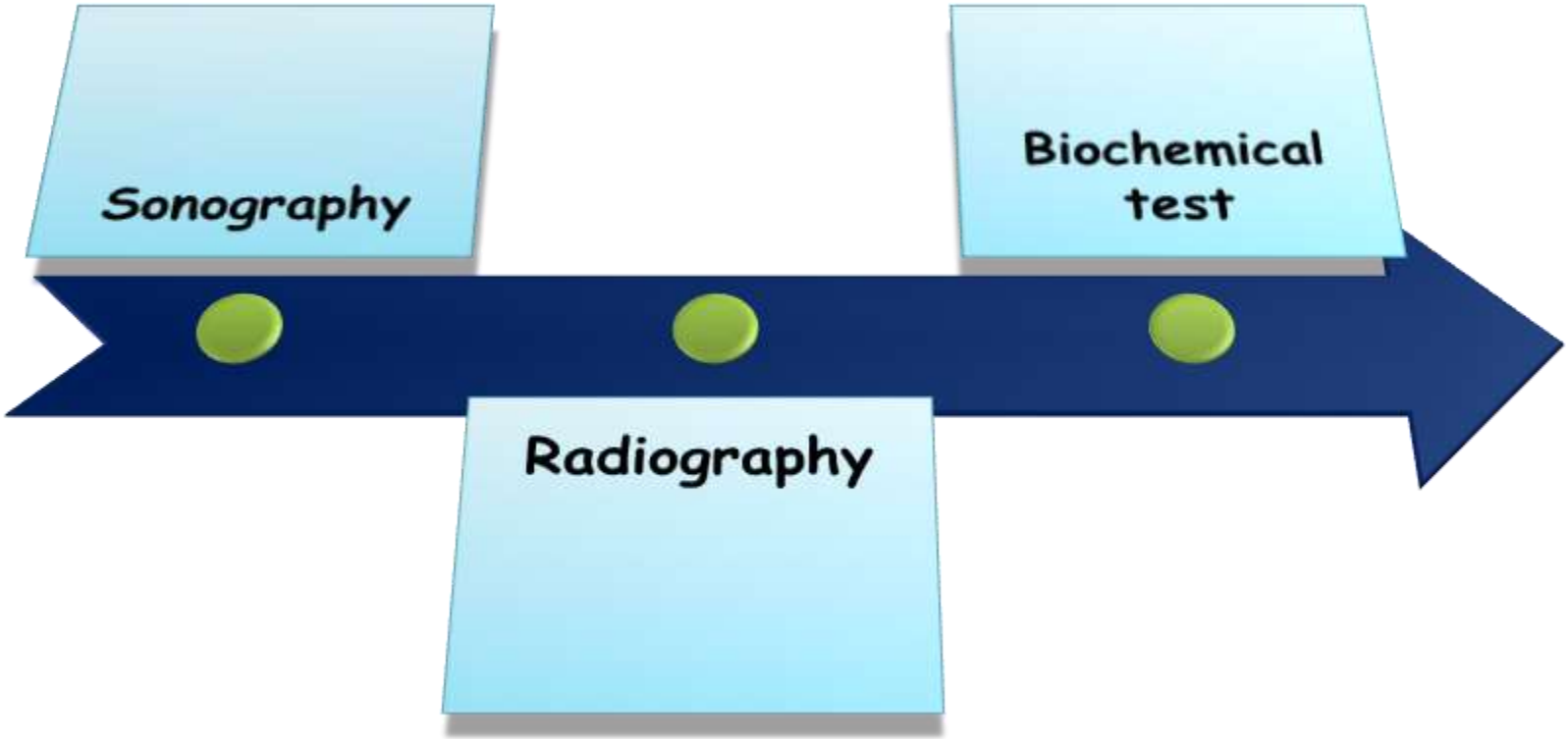
Diagnosis

Internal examination:

One head is felt deep in the pelvis, While the other one is located by abdominal examination



Investigations



Investigation

Sonography

In multiple pregnancy it is done to obtain the following information

- Confirmation of diagnosis as early as 10th week of pregnancy
- Viability of fetus
- Chorionicity (Lamda or twin peak sign)
- Pregnancy dating
- Fetal anomalies
- Fetal growth monitoring
- Presentation and lie of fetus
- Twin transfusion
- Placental localization
- Amniotic fluid volume

Investigations

Lamda or twin peak sign:

- Chorionicity of the placenta is best diagnosed by USG at 6 to 9 weeks of gestation
- In dichorionic twins there is a thick septum between the chorionic sacs .
- It is best identified at the base of the membrane where a triangular projection is seen this is known as twin peak sign

Investigation

Radiography:

- Two fetal heads and spines could be seen
- Triplets and co-joint twins can be diagnosed accidently

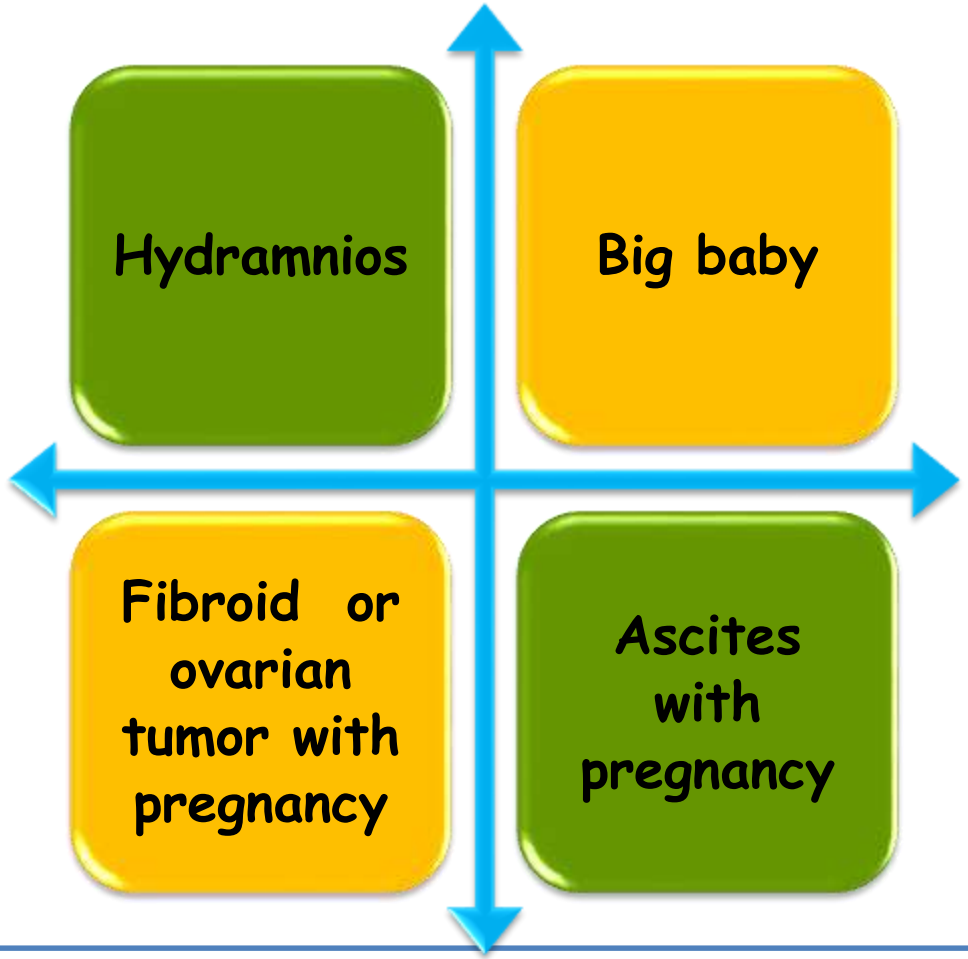
Investigations

Biochemical test:

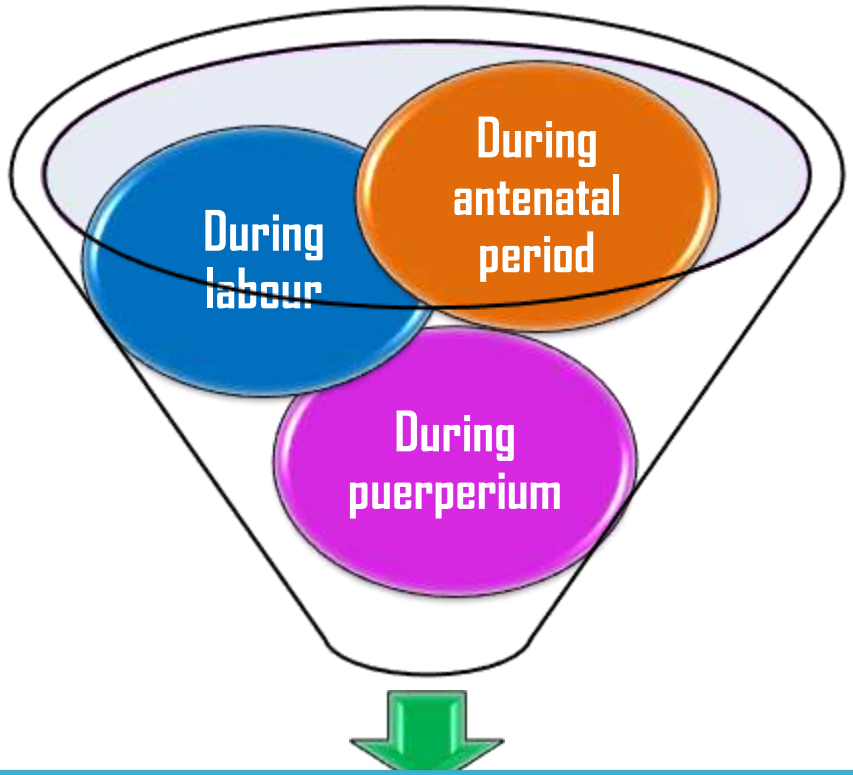
- Maternal serum chorionic gonadotropin
- Alpha fetoprotein
- Unconjugated oestriol

} Double than those of singleton pregnancy

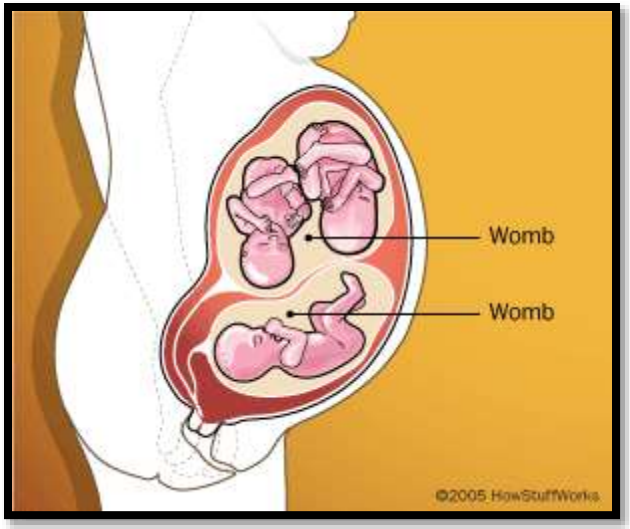
Differential diagnosis



Management


During antenatal period
During labour
During puerperium
Management

NICE PATHWAY FOR MANAGEMENT OF MULTIPLE PREGNANCY



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Antenatal management

Diet:

Increased dietary supplement (300 kcal/ day)

Increased rest

Supplement therapy:

Iron therapy:60-100mg/day

Additional calcium,vitamins,folic acid(1mg)

Interval of antenatal visit: More frequent

Fetal surveillance:

- Is maintained by serial USG at every 3-4 week interval
- Assessment of fetal growth
- Amniotic fluid volume
- Non stress test
- Doppler velocimetry
- Hospitalization

Average length of multiple pregnancy

- The length of gestation decreases with each additional baby.
- Twin pregnancies 36 weeks
- Triplets 32 weeks
- Quadruplets 30 week
- Quintuplets 29 weeks.
- Almost 60% of twins are delivered preterm, while 90% of triplets are preterm
- Higher order pregnancies are almost always preterm

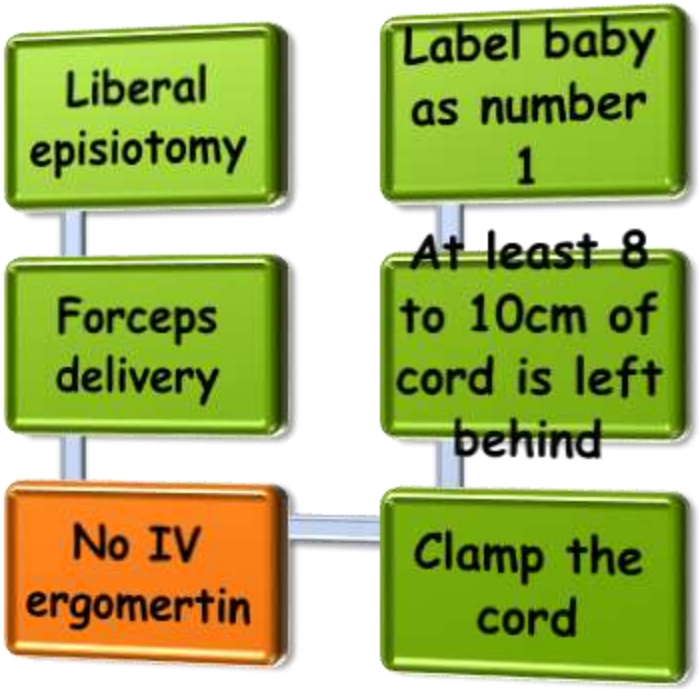
Management during labour

Place of delivery: Equipped hospital with NICU

- Skilled obstetrician
- The patient should be in bed
- Use of analgesic drugs
- Careful fetal monitoring
- Internal examination
- An intravenous line
- One unit cross matched blood
- Neonatologist

Management during labour

Delivery of the first baby:



Management during labour

Conduction of labour after the delivery of the first baby:

Principle:

- Expedite the delivery of the second baby
- The second baby is put under strain due to placental insufficiency caused by uterine retraction following the birth of the first baby

Indication of urgent delivery of the second baby

- Severe vaginal bleeding
- Cord prolapse
- In advent use of IV ergometrine with the delivery of anterior shoulder of the first baby
- Appearance of fetal distress

SCHEME OF MANAGEMENT OF TWINS DURING LABOUR

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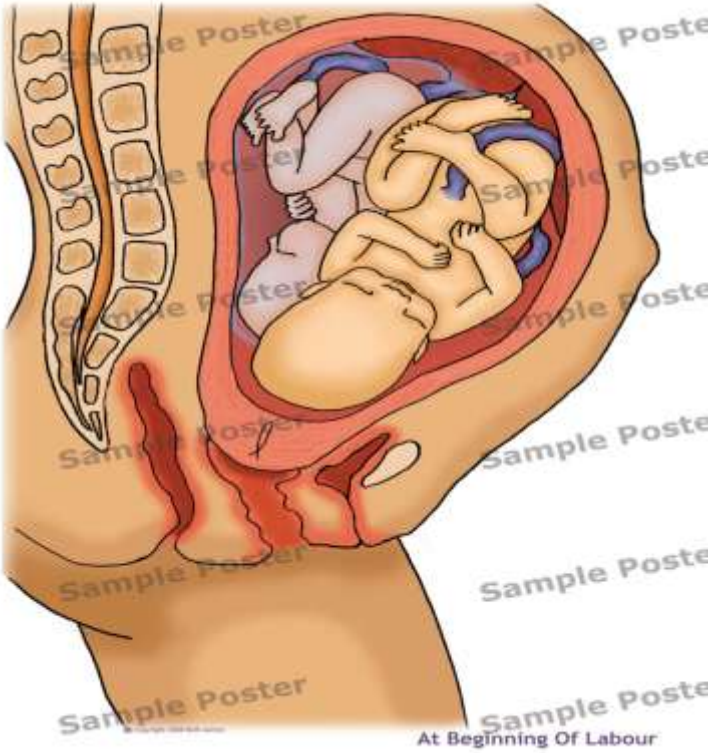
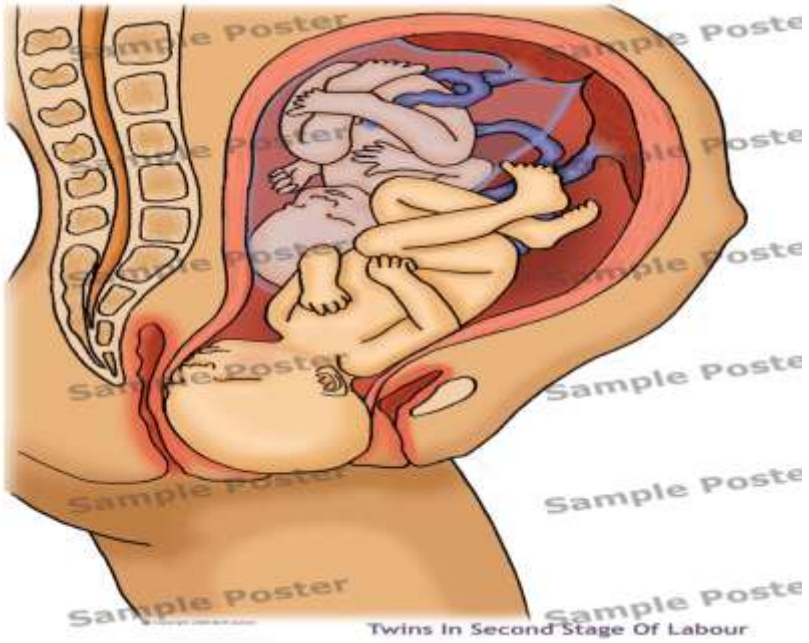
Indication of caesarean section for second baby

- Large second baby with non cephalic presentation
- Prompt closure of cervix after the delivery of first baby

labour



At Beginning Of Labour



Twins In Second Stage Of Labour

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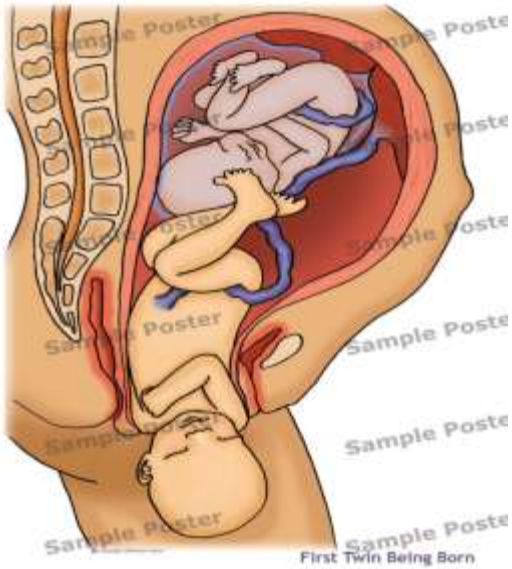
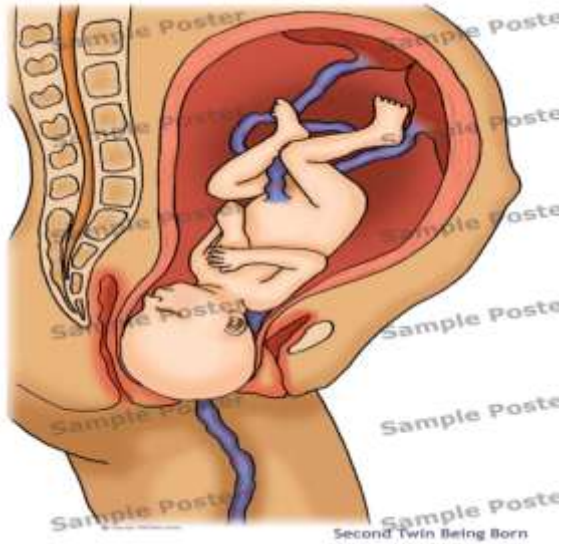
labour





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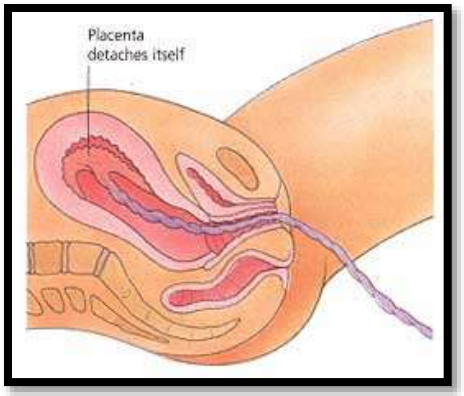
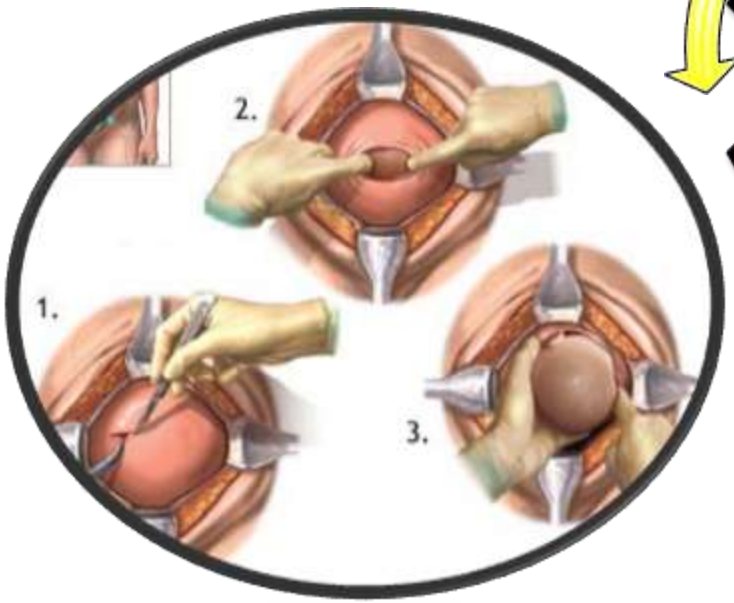
Management of third stage

- Methergin IV to reduce the risk of PPH
- Placenta is to be delivered by CCT
- A blood loss of more than average should be replaced by blood transfusion
- Careful monitoring for about 2 hours after delivery



Indication of caesarean section



For twins

Obstetric causes

Indications for caesarean section

Obstetric indication

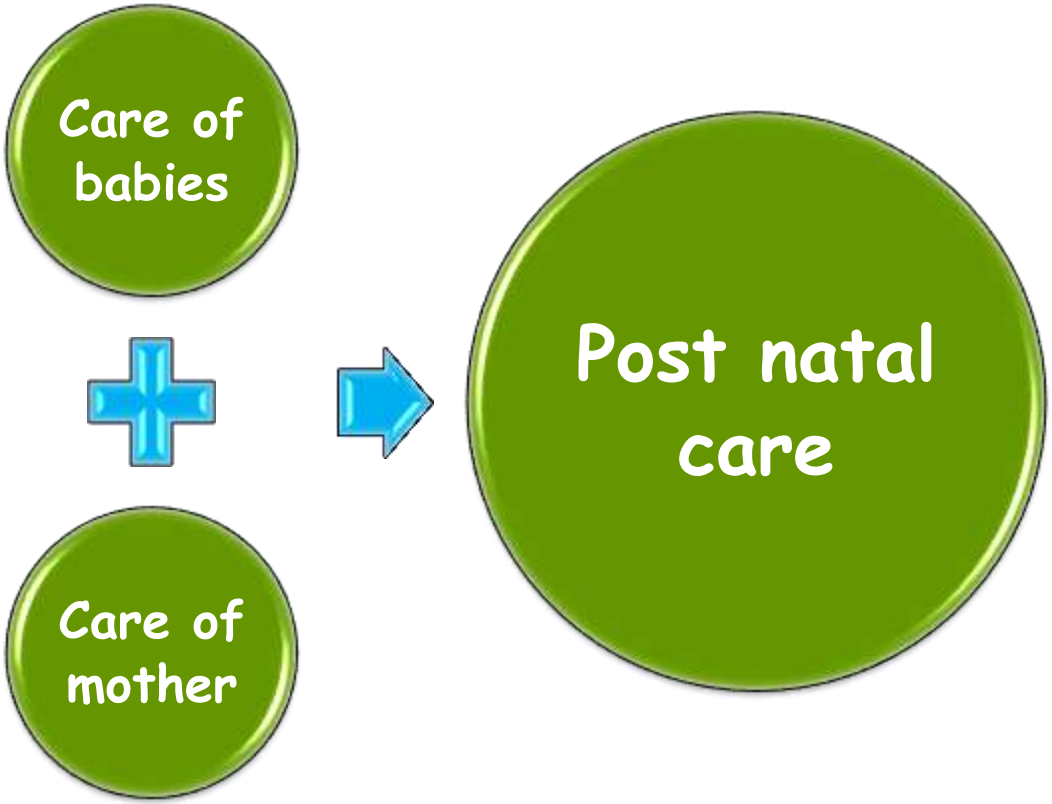
- Placenta praevia
- Severe eclampsia
- Previous caesarean section
- Cord prolapse of first baby
- Abnormal uterine contraction
- Contracted pelvis

Indications for caesarean section

For twins

- Both the fetus or even the first fetus with non cephalic presentation
- Twins with complications
- Mono amniotic twins
- Monochorionic twins with TTS
- Collision of both the heads at brim preventing engagement of either head

Management of postnatal period



Management of postnatal period

Care of babies

- Clear airway
- Maintain body temperature
- Identification
- Admit in NICU

Care of mother

Post natal assessment:

- Involution will be slower because of increased bulk
- After pains may be troublesome
- Postnatal exercise
- Teaching parenting skills
- Contraceptives

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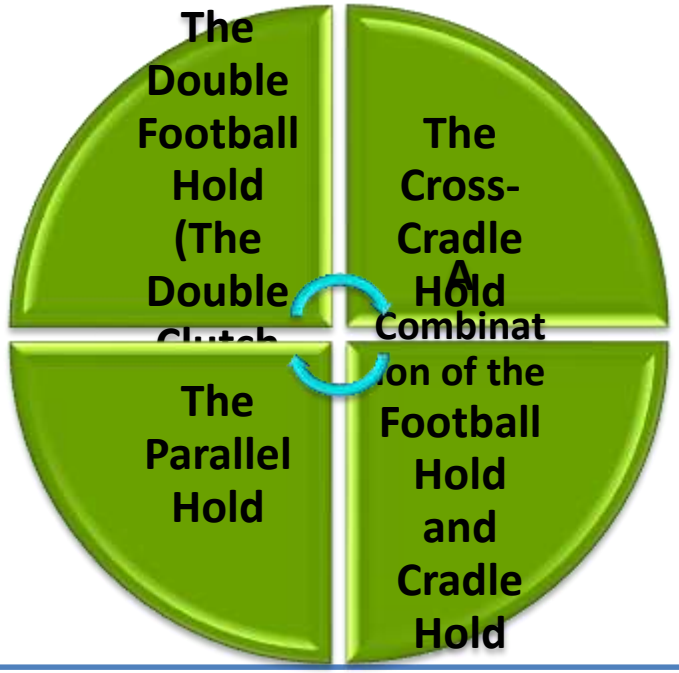
Breast feeding

Babies may be breast feed either simultaneously or separately



Breast feeding

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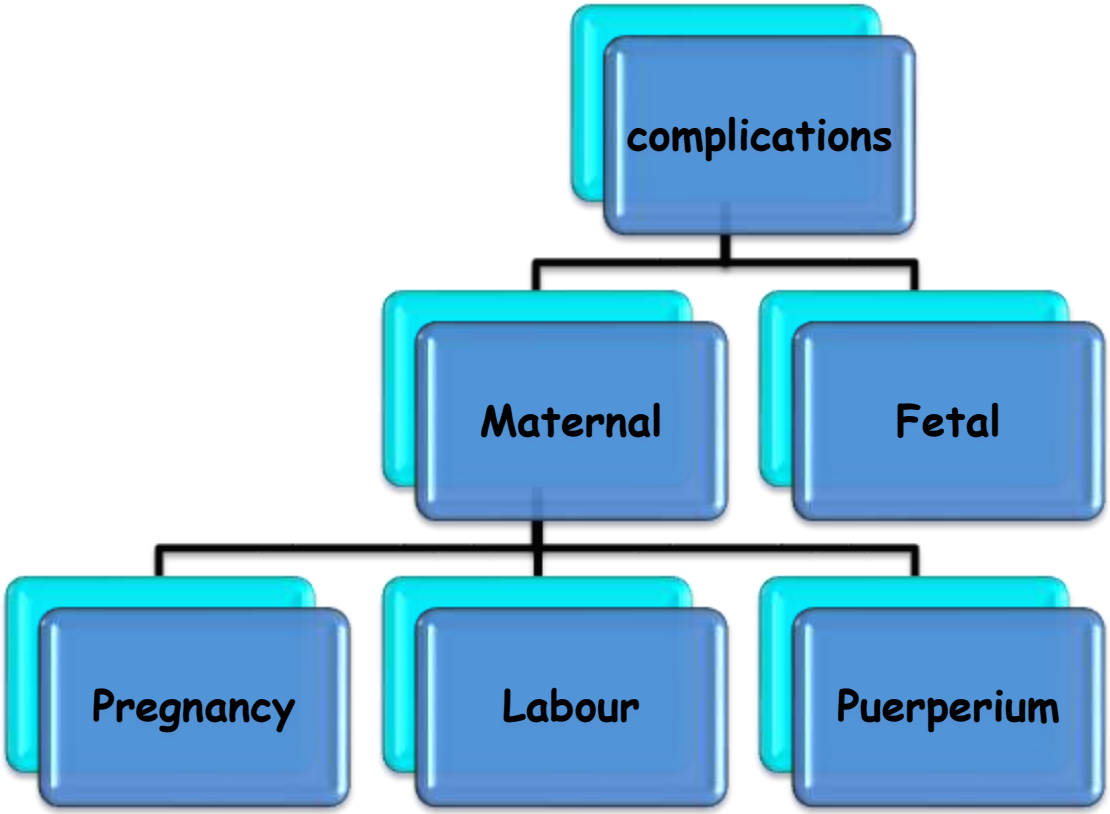
Complications



Complications

Maternal complications: During pregnancy

- APH
- Malpresentation
- Preterm labour
- Hydramnios
- Nausea and vomiting
- Anaemia
- Pre-Eclampsia
- Mechanical distress

Complications

Maternal complications: During Labour

- Increased operative inference
- Prolonged labour
- Cord prolapse
- Bleeding
- Early rupture Of membrane
- PPH

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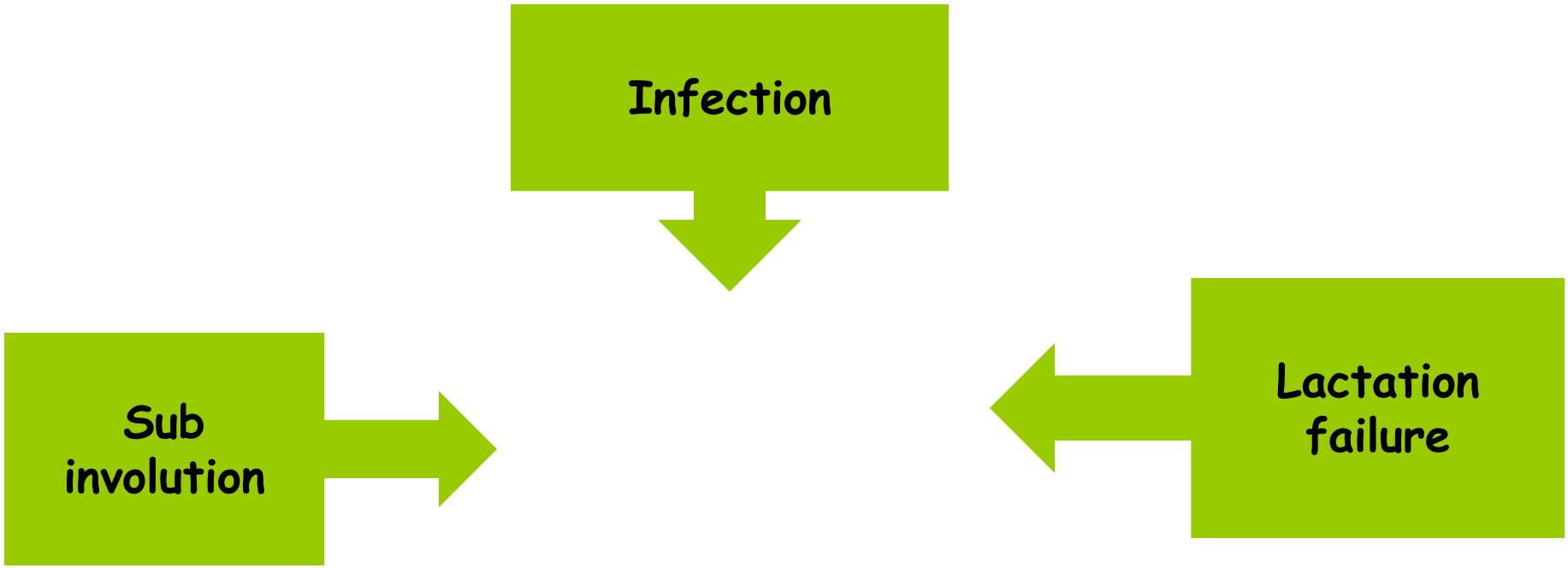
Complications

Maternal complications: During Puerperium



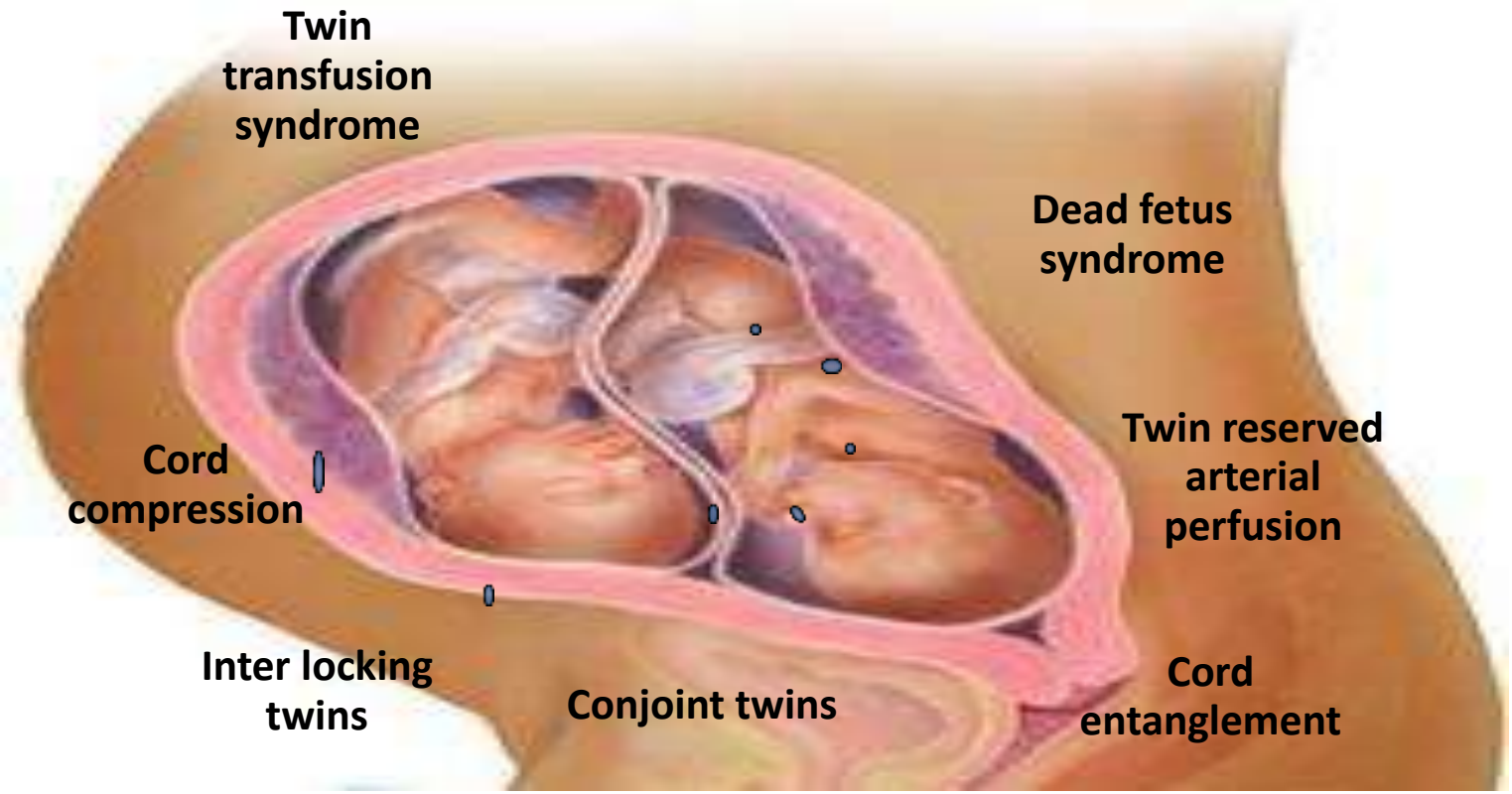
Complications

Fetal complications

- Abortion
- Preterm birth
- Fetal anomalies
- Discordant growth
- Asphyxia
- Still birth
- Locked twins

Complications

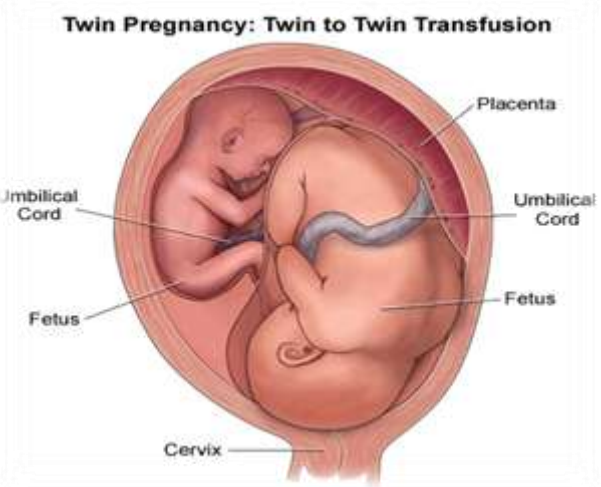
Complications of monochorionic twins



Twin transfusion syndrome

Twin transfusion syndrome:

One twin appears to bleed into the other through some kind of placenta vascular anastomosis



Clinical manifestations

Clinical manifestations occurs when there is haemodynamic imbalance due to unidirectional deep arteriovenous anastomoses

Receptor twin becomes

- Larger with hydramnios
- Polycythemic
- Hypertensive
- Hypervolaemic

Donor twin

- Appear stuck due to severe oligohydramnios
- Anaemic
- Hypotensive
- Hypovolaemic

Difference of haemoglobin concentration between the two usually exceeds 5gm% and estimated fetal weight discrepancy is 25% or more

Twin transfusion syndrome

Management

- Antenatal diagnosis is made by Ultrasound with Doppler blood flow study in the placental vascular bed
- Amniocentesis
- Laser photocoagulation
- Selective reduction

Mortality:70%

- Smaller twin have got better outcome
- The plethoric twin runs the risk of CCF and hydrops

Dead fetus syndrome

Death of one twin is associated with poor outcome of the co-twin

If death occurs in

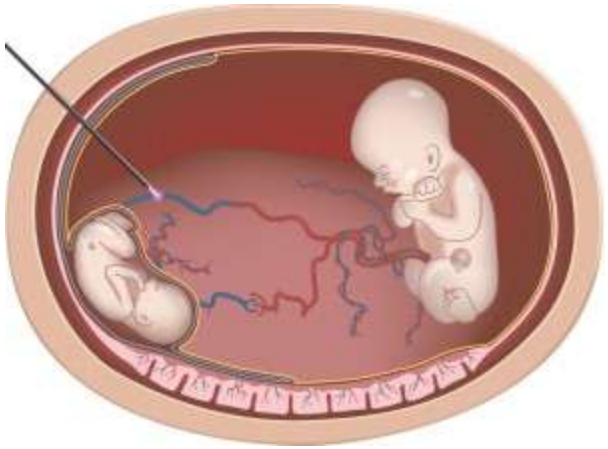
First trimester: Vanishes

Second trimester: Fetus papyraceus or compressus

Third trimester: death of other fetus

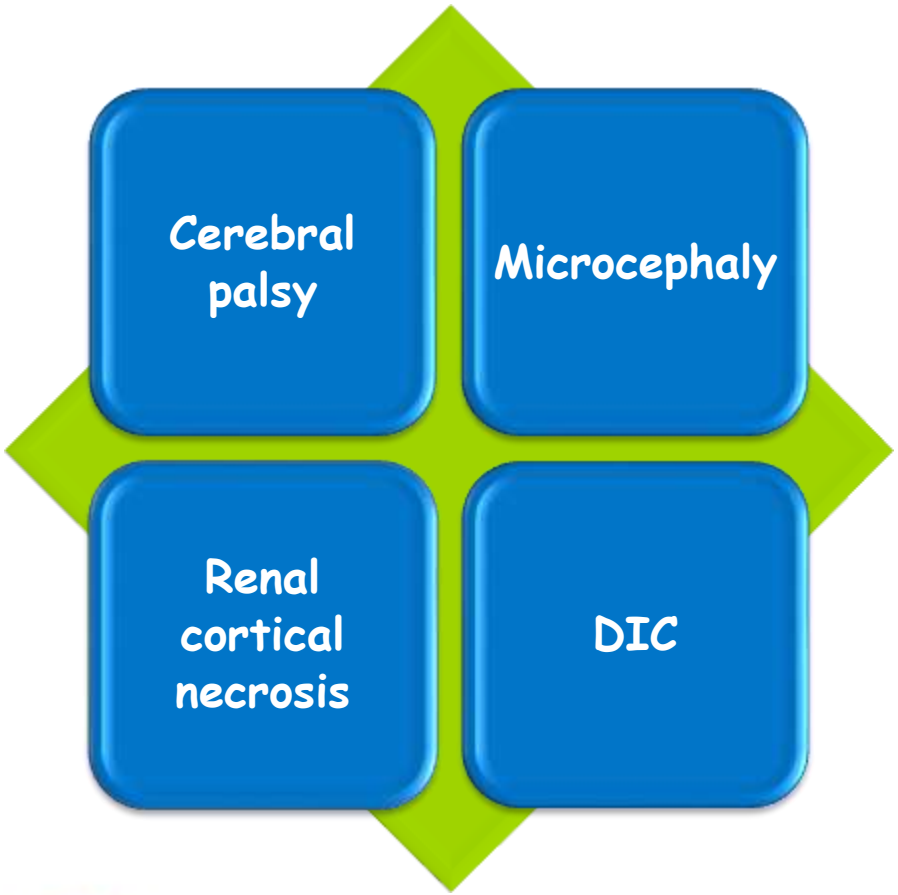
Causes of death

- Cord compress
- Congenital anomalies
- Competition for nutrition



• Dead fetus syndrome

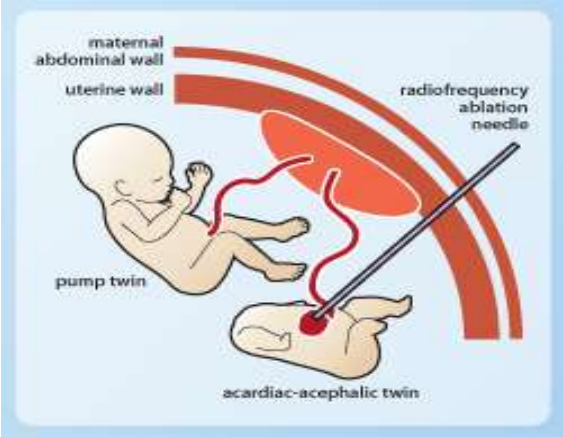
Complications (for surviving twin)



This is due to **THROMBOPLASTIN** liberated from the dead twin that crosses via placental anastomosis to living twin

Twin reversed arterial perfusion

- TRAP is characterized by an acardiac perfused twin having blood supply from a normal co-twin via large arterio-arterial anastomosis
- In majority cases the co-twin dies due to high output



Cord entanglement

The close proximity and absence of amniotic membrane separating the two umbilical cords makes it particularly easy for the twins to become entangled in each other's cords, hindering fetal movement and development. Additionally, entanglement may cause one twin to become stuck in the birth canal during labour and expulsion..

Management:

Sulindac a prostaglandin synthase inhibitor used to reduce the fetal urine output

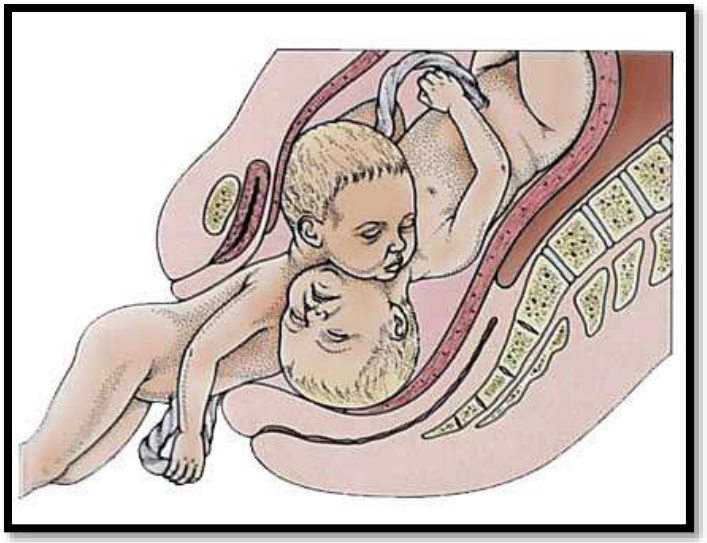
Cord entanglement

Interlocking twins

The after coming head of the first baby getting locked with the fore coming head of the second baby

Management

- Vaginal manipulation to separate chin
- Decapitation



Cord compress

One twin may compress the other's umbilical cord, potentially stopping the flow of nutrients and blood and resulting in fetal death

Conjoint twins

- Division occurs after 2 weeks of developmental of embryonic disc resulting in the formation of conjoined twin
- Perinatal survival depends upon the type of joint
- Major cardio vascular connections leads to high mortality

Conjoint twins

Types:

- **Thoracophagus**: Two bodies fused from the upper thorax to lower belly
- **Pyogopagus**: Two bodies joined at the
- **Craniopagus**: Fused skulls but separate bodies
- **Ischipagus**:Fused lower half of the two bodies
- **Omphalopagus**:Two bodies fused at the lower chest
- **Xiphophagus**:Two bodies fused in the xiphoid cartilage

Conjoint twins

Craniopagus

Thoracopagus

Omphalopagus

Xiphopagus

Ischiopagus

Pygopagus

"HEAL US TO HEAL OTHERS"

Prognosis

- Maternal mortality is increased in twins than in a singleton pregnancy
- Death is mostly due to haemorrhage (before, during, after)
- Pre eclampsia
- Anaemia

Theory application

Penderson Health promotion model

- Prior related behavior
- Personal biological factor
- Personal psychological factor
- Personal socio cultural factor
- Perceived benefits of action
- Perceived barrier of action
- Perceived self efficacy
- Activity related affect
- Interpersonal influences
- Situational influences
- Commitment to plan of action
- Immediate competing demands
- Health promoting behavior

Journal presentation

- BJOG an international journal of obstetrics and Gynaecology

Nursing diagnosis

- Anxiety related to outcome of pregnancy as manifested by increased frequency in asking doubts
- Fatigue related to increased body functioning secondary to multiple pregnancy
- Body image disturbance related to increased physiological demand secondary to multiple pregnancy
- Sleep pattern disturbance related to increased fetal movements
- Imbalanced nutritional status less than the body requirement related to increased demand secondary to multiple pregnancy

Conclusion

Bibliography

- Annama jacob text book of midwifery and gynaecology 3rd edition Jaypee publications pg no:336
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- Lowdermilk textbook of maternity and women health nursing 8th edition Mosby publications pg 336

Thank you!

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