Obstetrics & Gynecology TEAM

Multiple Pregnancy

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◆very important ◆mentioned by doctor ◆team notes ◆not important

Multiple pregnancy

Objectives:

-Incidence

-Diagnosis of multiple pregnancy

-Mechanism of twinning & Zygosity

-Complication of multiple pregnancy

-Causes of perinatal mortality & morbidity

-Twin to twin transfusion

-Antenatal management of multiple pregnancy

-Assessment of chorionicity by ultrasound

- WHAT THE DOCTOR MENTIONED
- The sentences in red were already red in the doctor's slides

Incidence of multiple pregnancy

- The natural rate of twinning is 1:90
- Slightly higher in blacks than whites
- In USA the incidence is 3%
- The incidence is increasing due to Assisted reproduction technique(ART)and ovulation induction
- The incidence of monozygotic twins is constant and is 4:1000 pregnancies
- The incidence of dizygotic twins increase with age, parity, weight (obesity) , height, and is higher in some families
  Dizygotic twins are higher in families with history of twins

Diagnosis of multiple pregnancy

Suspected if:

- Large for date uterine size

  For example: if the patient comes to the clinic and you calculate the gestational age according to the last menstrual period and you find that she is 16 weeks and when you do the examination the findings tell you that she is 20 weeks.
- Multiple fetal heart rates are detected
- Multiple fetal parts are felt
- HCG & maternal serum alpha-fetoprotein is elevated for gestational age

- Pregnancy with ART

Confirmed by ultrasound

Zygosity

Dizygotic: The commonest

- Diamniotic/Dichorionic
- 70-80% of all twins
- Fertilization of two ova
- Each fetus will be surrounded by amnion & chorion (each fetus has its own placenta)

Monozygotic:

- 20-30% of all twins
- Result from cleavage of a single fertilized ova
- The timing of cleavage determines placentation

1- Dichorionic/diamniotic monozygotic twins: This type behave like dizygotic

- Cleavage in the first 3 days after fertilization
- Each fetus will be surrounded by amnion & chorion(each fetus has its own placenta)like dizygotic twins
- Has the lowest mortality rate of monozygotic twins <10% of all monozygotic twins

2-Monochorionic/diamniotic:

- Cleavage between day 4 and 8 after fertilization
- Share single placenta but separate amniotic sac
- The mortality is 25%

3-Monochorionic/monoamniotic: The worst type

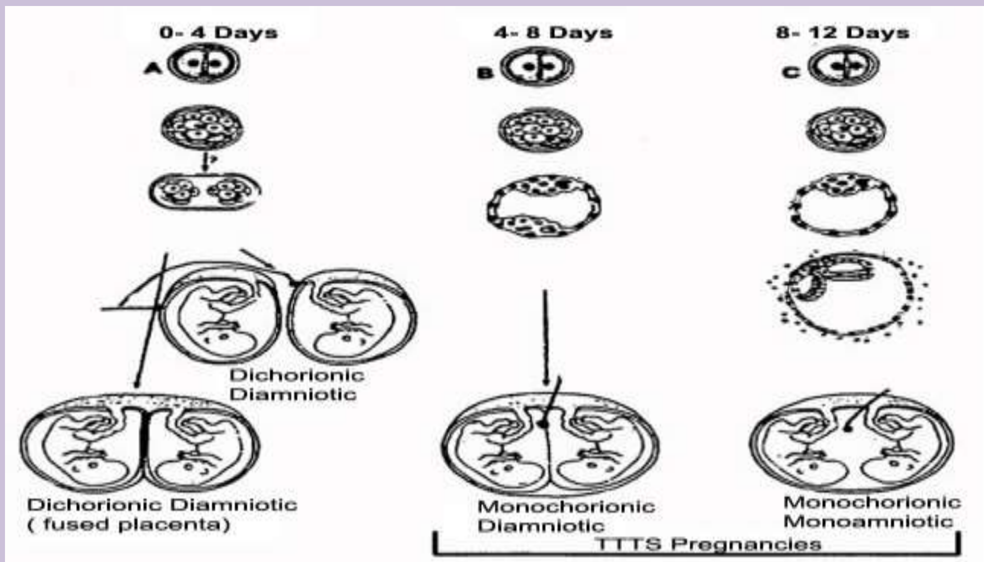
- < 1% of cases
- Cleavage after the 8th day (day 9-12)
- Share single placenta & single sac
- Mortality is 50-60%, usually before 32 weeks

4-Conjoined twins:

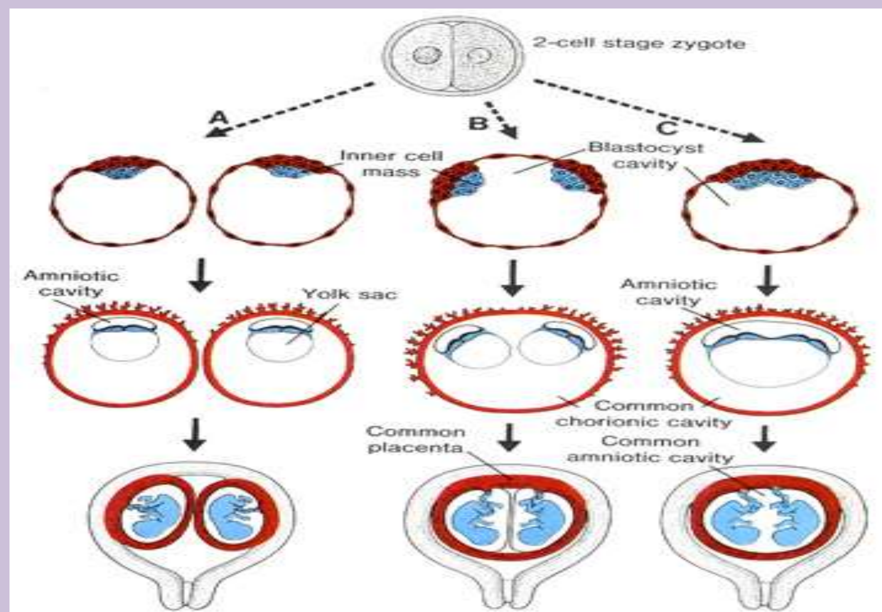
- Cleavage after day 12
- Incidence is 1: 70,000deliveries

- **The fetuses may fuse in a number of ways, <u>most commonly chestand/or abdomen</u>**

Mechanism of twining



Monozygotic twins



Complications of multiple pregnancy

- **High perinatal mortality & morbidity (3-4 times higher than singleton pregnancy)**
- **Abortion(<50% of twins diagnosed in the first trimester result in live**
  - **Nausea & vomiting "Hyperemesis gravidarum"**

    Because of the high level of HCG

    They come to the emergency very dehydrated + high ketone and some time the sever vomiting cause lower GI bleeding
  - **IUGR (Intrauterine growth restriction)**

    The weight should be less than 2.5 at term delivery
- **Preterm labour (50%)(twins delver at 37 weeks, triples at 33 weeks, Quadruplets at 29 weeks extreme prematurity)**
- **PET (3 times higher than singleton)**
- **Polyhydramnios (in 10%)**
- **Congenital anomalies**
  - **Postpartum hemorrhage**

    Many mechanism one of them : OVER STRETCHING UTERINE → UTERINE ATONY

    Normally contraction of the uterine muscle compresses the vessels and reduces flow and when the uterus is not contracted, the mother's blood vessels continue to pump "bleeding"
- **Placental abruption, placenta previa caused by abnormal placentation site**

-Discordant twin growth (more than 20%discrepacy in fetal weights)

In multiple pregnancy do more frequent ultrasound after 24 weeks because it may at any time discordant growth happens and when it happenes they are at higher risk that the placenta is feeding only one fetus so you have to observe closely and deliver her before intrauterine fetal death happens

-Malpresentation, cord prolapse, Operative delivery

Causes of perinatal mortality & morbidity

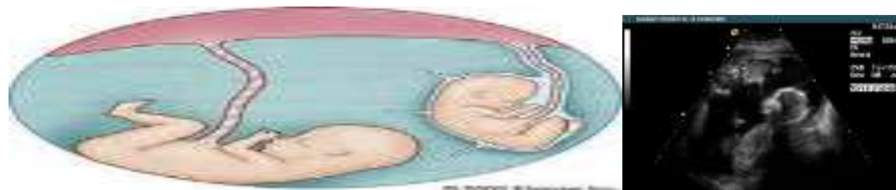
- **Prematurity (Respiratory distress syndrome)**
- **Birth trauma**
- **Cerebral hemorrhage**
- **Birth asphyxia**
- **Congenital anomalies**
- **Still birth**

The second twin carry risk more than first twin

Twin-twin transfusion (TTN)

- Occur in 20-25% of monochorionic twins
- One fetus donate blood to the other due to vascular anastomosis
- The recipient fetus will have heart failure "too much fluid:, polyhydramnios, and hydrops
- The donor will have IUGR & oligohydramnios

  if the gestational age close to the maturity give dexamethasone and deliver them

- 

Management:

- includes amnio-reduction of the receipient twin

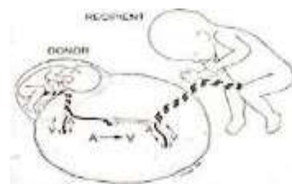
-intra-uterine blood transfusion for the donor twin

-selective fetal reduction

This happens when patients go to IVF center and they give her injection to stimulate the ovulation. in result to stimulation one ova gives 6 or 7 , instead of placing 3 , which is the maximum number , they place 6 because they think only one or two will be implanted surprisingly all the 6 get implanted and they decided to kill some of them

* لم يجزها العلماء

-fetoscopic laser ablation of placental anastomosis



Antenatal management of multiple pregnancy

Adequate nutrition (300 additional calories per day per fetus)

Prevent anemia

- More frequent antenatal visits

Normally in single pregnancy antenatal visits should be every month until 28 weeks then every 2 weeks until 36 weeks then every week , while in multiple pregnancy must be more frequent.

Ultrasound:

- Assess chorionicity at 9-10 weeks
- Nuchal translucency at 12-13+ weeks

  Measure the thickness of the skin at the back of baby's neck. "screening test for down syndrome"
- Assessment of fetal growth & fetal wellbeing every 3-4 weeks from 23 weeks onward
- Multifetal reduction may offered for high order multiple gestation in the first trimester

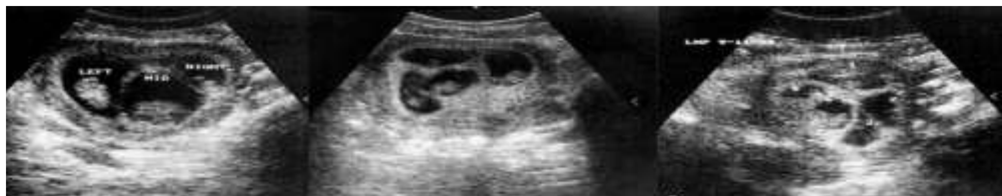
Preterm labour risk:

Serial cervical length assessment

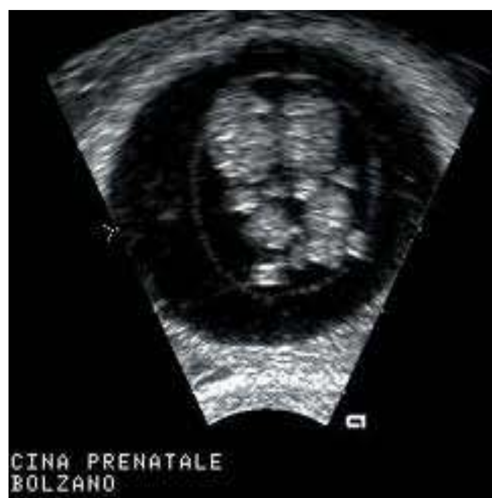
Steroids for fetal lung maturation

Assessment of chorionicity by ultrasound Not important

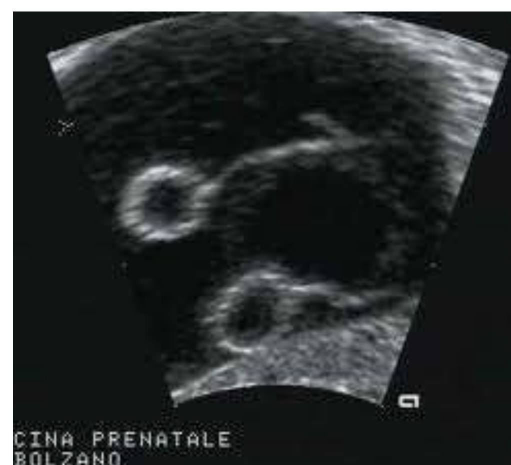
Multiple gestational sacs in first trimester



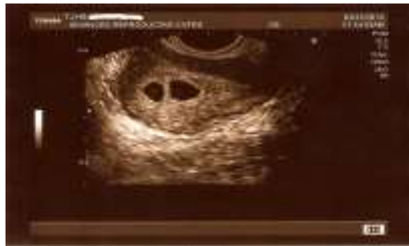
Conjoined twins



2 yolk sacs



2 gestational sacs

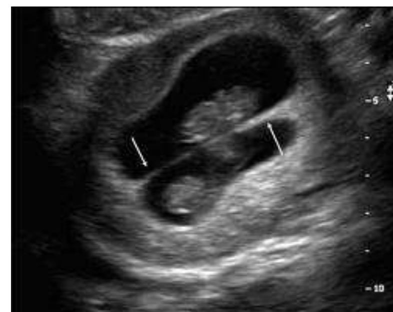


T sign

Monochorionic twin

Twin Peak Sign (Lambda)

Dichorionic twins



Management of labour in multiple pregnancy important

-Controversial

-Depends on presentation ex: breech→ CS, gestational age ex: preterm +rupture membrane +twins → CS , presence of fetal complications, experience of the obstetrician

-usually if the first fetus is cephalic →normal delivery

patient with assisted reproduction and prolonged infertility it is better to do CS because the second twin is at risk to change the position

-Non vertex first twin → cesarean section

-Locked twins: Breech-vertex twins → cesarean section

- Active management of third stage to prevent PPH

Pre-requisite for intra-partum management of multiple pregnancy

- Secondary or tertiary center
- Well-functioning large-bore IV line
- Availability of emergency C/S –anesthesia- blood bank
- Continuous simultaneous fetal heart rates monitoring
- Availability of NICU beds- paediatrician
- Imaging technique (ultrasound)

- **Recommended books:**

- -Essentials of obstetrics & gynecology (Hacker and Moore's) P 160-172
- -Current diagnosis & treatment –Obstetrics & gynecology (p301-3100)

- **TRY TO READ IT FOM THE BOOK**

summary

-The incidence of Multiple pregnancy is increasing due to Assisted reproduction technique(ART)and ovulation induction

-The incidence of dizygotic twins increase with age, parity, weight (obesity) , height, and is higher in some families

-**Suspected if:** Large for date uterine size , Multiple fetal heart rates are detected ,Multiple fetal parts are felt ,HCG & maternal serum alpha-fetoprotein is elevated for gestational age, Pregnancy with ART **Confirmed by ultrasound**

-There are two types :

1-Dizygotic: •The commonest •Fertilization of two ova • Each fetus will be surrounded by amnion & chorion (each fetus has its own placenta)

2-Monozygotic: •Result from cleavage of a single fertilized ova •The timing of cleavage determines placentation

Tming of cleavage	first 3 days after fertilization	between day 4 and 8 after fertilization	-Cleavage after the 8th day (day 9-12)	Cleavage after day 12
placentation	Dichorionic/diamniotic monozygotic	Monochorionic/diamniotic	Monochorionic/monoamniotic	Conjoined twins
	-behave like dizygotic -Each fetus will be surrounded by amnion & chorion -Has the lowest mortality rate of monozygotic twins	-Share single placenta but separate amniotic sac	-The worst type -Share single placenta & single sac	-most commonly chestand/or abdomen

Twin-twin transfusion •Occurs in 20-25% of monochorionic twins •One fetus donate blood to the other due to vascular anastomosis • recipient fetus will have heart failure hydrops •The donor will have IUGR & oligohydramnios

Management:

•amnio-reduction of the receipient twin •uterine blood transfusion for the donor twin

•fetoscopic laser ablation of placental anastomosis

Management of labour in multiple pregnancy •Controversial•Depends on presentation ex: breech→ CS, gestational age ,presence of fetal complications, experience of the obstetrician •usually if the first fetus is cephalic →normal delivery