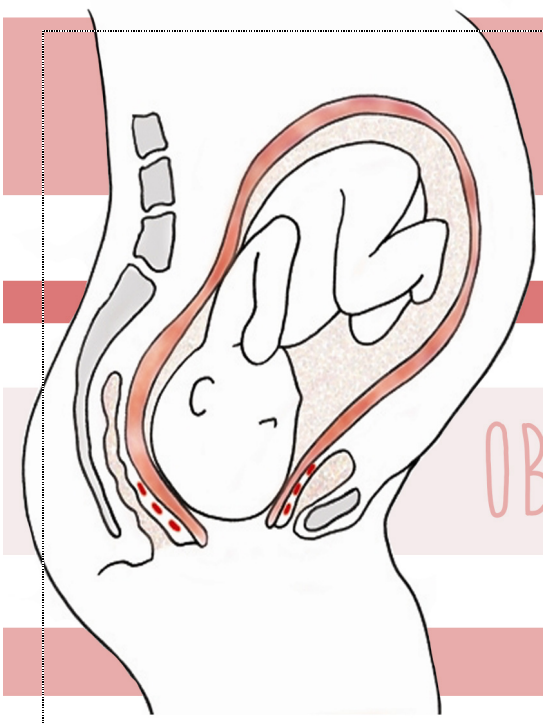

OBSTETRICS AND GYNECOLOGY

10- Multiple Gestation

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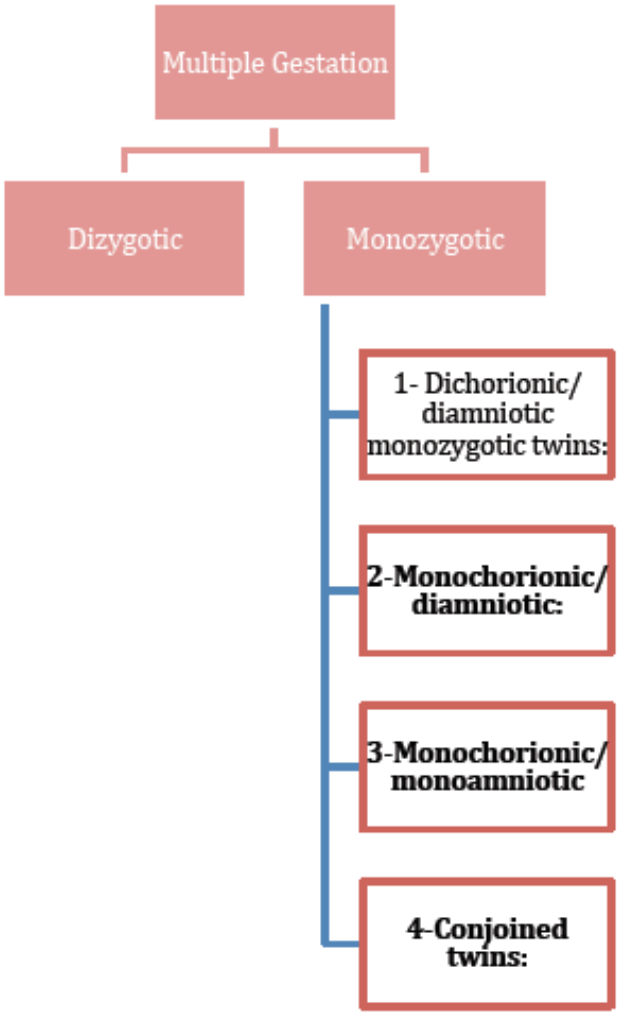
Doctor's note Team's note Not important Important 431 teamwork

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



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

Diagnosis of multiple pregnancy

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 ex:limbs
HCG & maternal serum alpha-fetoprotein is elevated for gestational age
Previous hx , family hx
Drugs induced fertility
Uterus is larger in comparison to previous pregnancies >> bigger abdomen but the commonest cause is a wrong date given by the pregnant woman
Exaggerated pregnancy symptom
- Pregnancy with ART
Confirmed by ultrasound

Zygosity

memorize the % of monozygotic and dizygotic twins
Dizygotic: The commonest
- Diamniotic (2 amino sacs) /Dichorionic (2 placentas)
- 70-80% of all twins
- Fertilization of two ova

- Each fetus will be surrounded by amnion & chorion (each fetus has its own placenta lower complications

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

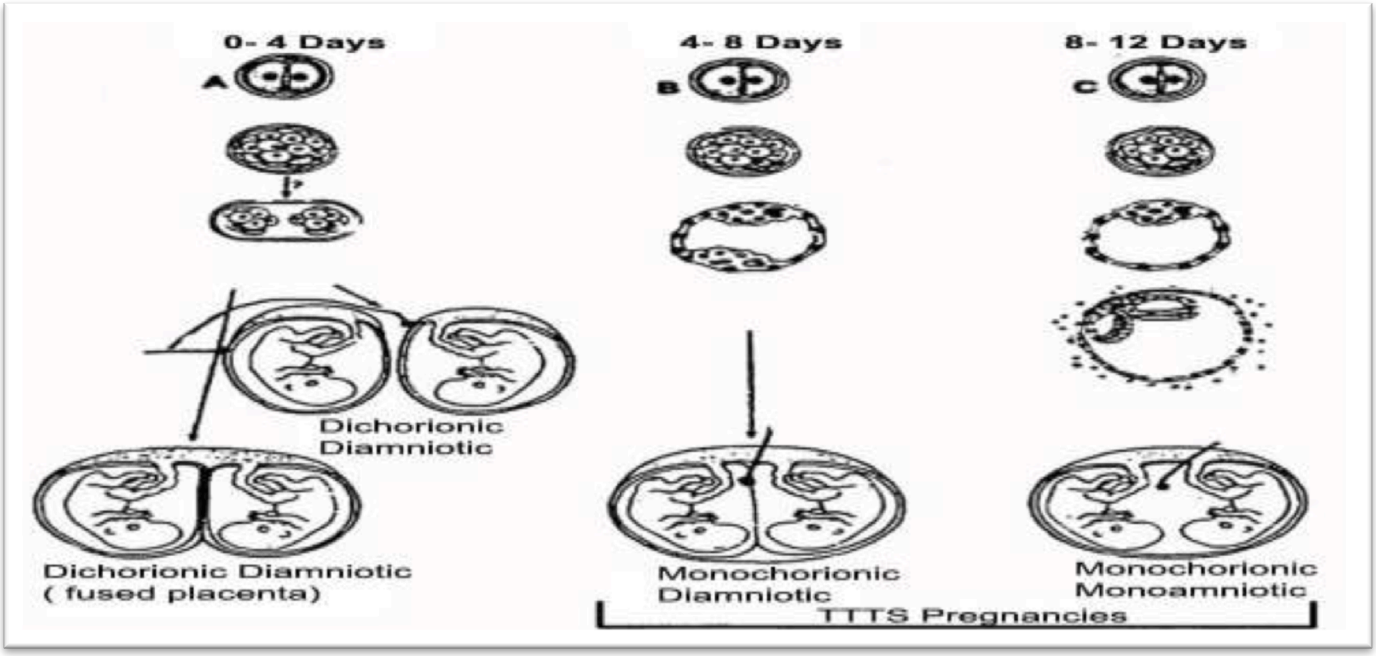
2-Monochorionic/diamniotic:
- **Cleavage between day 4 and 8 after fertilization**
- **Share single placenta but separate amniotic sac**
- **The mortality is 25%**

3-Monochorionic/monoamniotic: The worst type
- **< 1% of cases**
- **Cleavage after the 8th day (day 9-12)**
- **Share single placenta & single sac**
- **Mortality(of the fetus) is 50-60%, usually before 32 weeks**

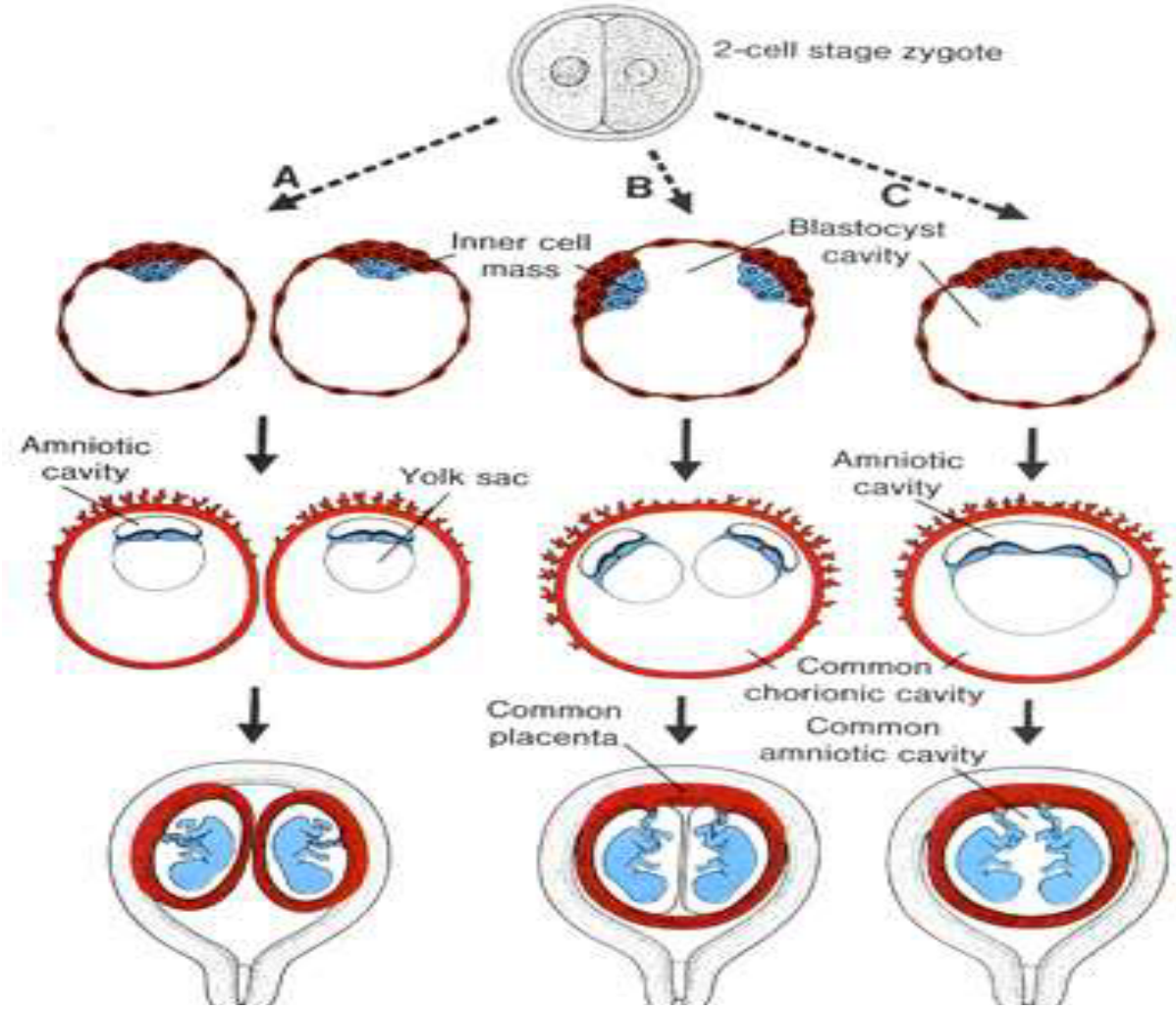
4-Conjoined twins:
- **Cleavage after day 12**
- **Incidence is 1: 70,000deliveries**

The fetuses may fuse in a number of ways, most commonly chest and/or abdomen **monozygotic but division occurs later**

Mechanism of twining



Monozygotic twins



Complications of multiple pregnancy

High perinatal mortality & morbidity (3-4 times higher than singleton pregnancy)

- Abortion(<50% **,50%will live** of twins diagnosed in the first trimester result in live **incidence increased due to early detection by US**

- 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 the higher the number of the twins, the higher chance of prematurity > more morbidity and mortality)

- PET (3 times higher than singleton) =HTN+protienurea

- 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" Rx: IV lines

- 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

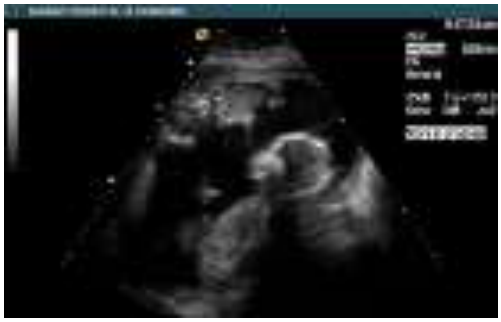
Prematurity (Respiratory distress syndrome)
- Birth trauma
- Cerebral hemorrhage
- Birth asphyxia
- Congenital anomalies
- Still birth

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

-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"

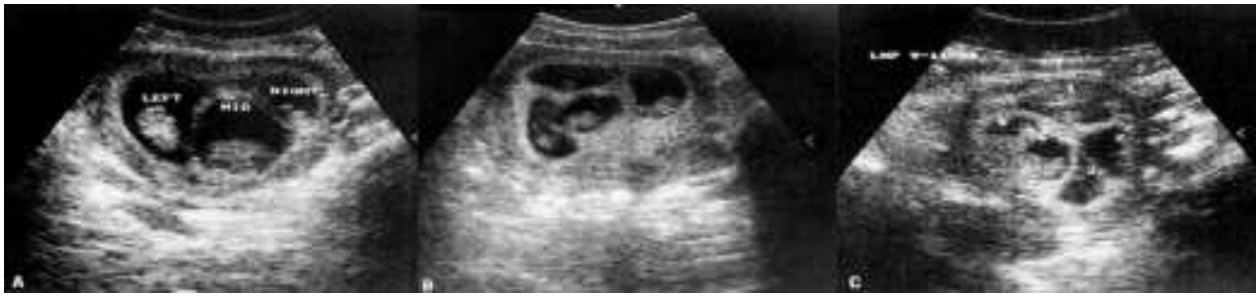
- Assessment of fetal growth & fetal wellbeing every 3-4 weeks from 23 weeks onward
- Multifetal reduction may offered for high order multiple gestation in the first trimester

Preterm labor risk:

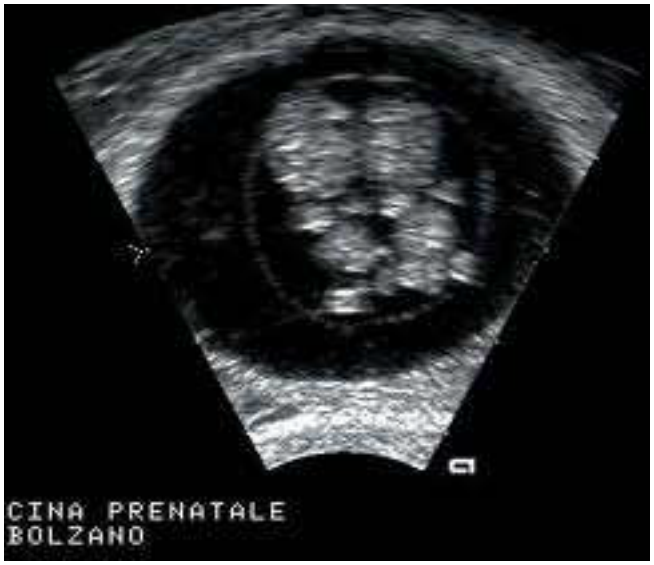
Serial cervical length assessment

Assessment of chorionicity by ultrasound

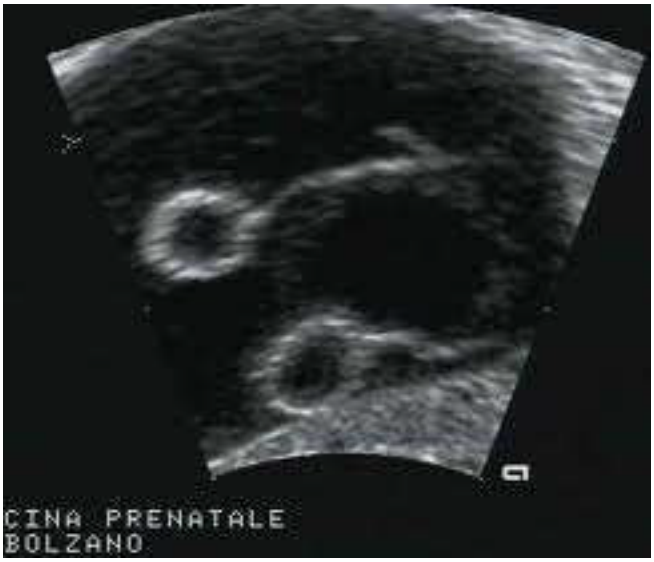
Multiple gestational sacs in first trimester



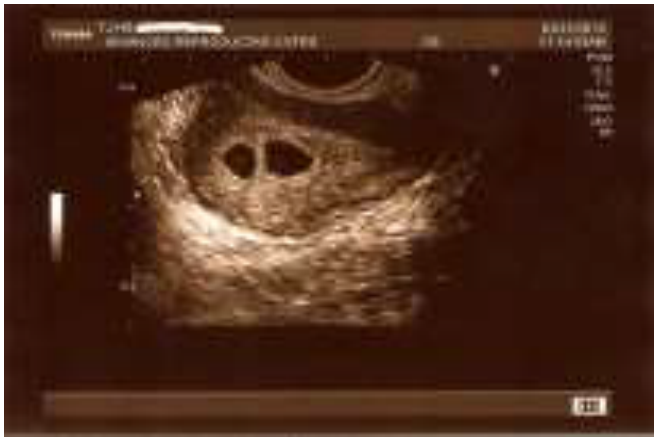
Conjoined twins



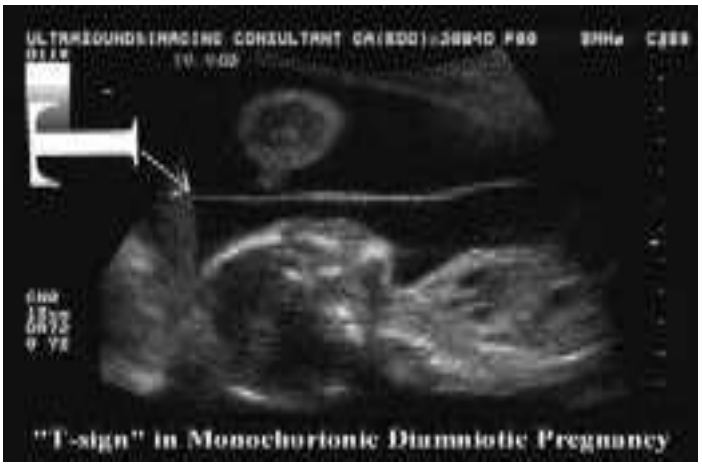
2 yolk sacs



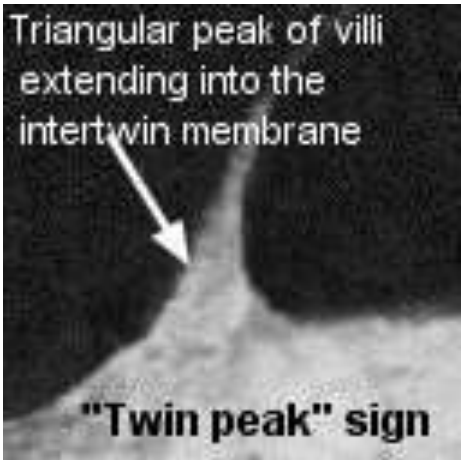
2 gestational sacs

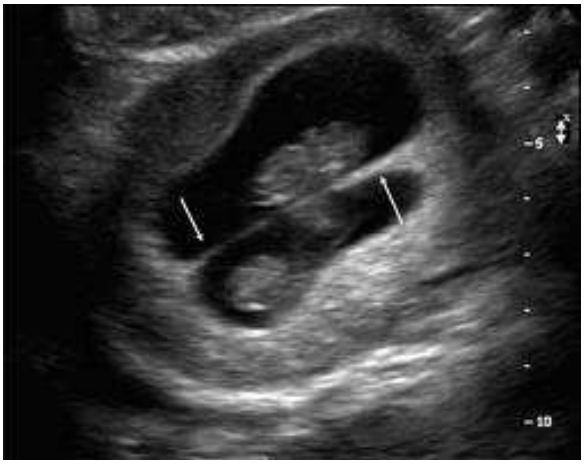


T sign(Monochorionic twin)



Twin Peak Sign (Lambda), Dichorionic twins





Management of labour in multiple pregnancy

-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)

Summary:

Multiple Gestation

Questions	Answer	Risks
Diagnosis	Suggested by: ↑ FH, AFP, hCG	SONO
Genders *different*	Di Di Di Zygotic, Chorionic, Amnionic	Lowest
TWO placentas	Mono Di Di Day 0 - 3	Anemia, HTN PTD, CS, PPH
Septum *present*	Mono Mono Di Day 4 - 8	TTTS
Septum *absent*	Mono Mono Mono Day 9 - 12	Cords entangled
Method of Delivery	Both ceph→VD	1st non-ceph→CS

For mistakes or feedback

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