**Multiple Pregnancy**

**Definition**

Pregnancy carrying more than one fetus.

**Incidence**

According to Hellin’s formula: twins 1:80, triplets 1:802, quadruplets 1:803 etc...

The following factors are associated with higher incidence:

* Racial: more in black women.
* Familial: whether the wife’s or the husband’s family has a history of multiple pregnancies.
* Induction of ovulation: particularly with gonadotrophins.
* Multiparas than primiparas.
* Maternal age: incidence increases with increasing age up to 40.
* Previous multiple pregnancy: the incidence of another multiple pregnancy is 10 times the normal incidence.

**Varieties**

* Binovular (dizygotic = non-identical) twins:
	+ developed from two separate ova which may or may not come from the same ovary and fertilised by two separate spermatozoa.
	+ The twins are of the same or different sex.
	+ The similarity between them is not more than that between members of the same family.
	+ They have: two placenta, two chorions, two amnions, two umbilical cords.
	+ Binovular twins are 4 times more common than the uniovular variety.
* Uniovular (monozygotic = identical) twins:
	+ developed from a single ovum which after fertilisation, by a single sperm, has undergone division to form two embryos.
	+ The twins are of the same sex.
	+ They have similar physical and mental characters as well as the blood group but not finger prints.
	+ The foetal circulations often communicate in the placenta which results in foetofoetal transfusion with one twin having polycythaemia, hypervolaemia,dominant heart, polyuria and polyhydramnios. While the other twin will have anaemia, hypovolaemia, microcardia, oligouria and oligohydramnios. The latter twin may die and retained till term where it is seen flat and compressed and called fetus papyraceous. The retained dead fetus may cause disseminated intravascular coagulation.
	+ The placentation and development in uniovular twins depend on the time when division occurs as follow:

|  |  |  |
| --- | --- | --- |
| Day post- fertilisation | Placentation | Incidence |
| 0-3 | 2 placentas, 2 chorions, 2 amnions & 2 umbilical cords as binovular twins but 2 identical twins (monozygotic). | 23% |
| 4-7 | One placenta, one chorion, 2 amnions & 2 umbilical cords with vascular connections. | 75%  |
| 8-11 | One placenta, one chorion, one amnion & 2 umbilical cords (monoamniotic monochorionic).Higher foetal loss due to cord entanglement. | 1% |
| >11 | Conjoined twins (monsters), joined by the head (craniopagus), chest (thoracopagus), abdomen (omphalopagus), back (pygopagus) or pelvic (ischiopagus). Sometimes the viscera or limbs are shared. | <1% |

**Superfecundation**: is fertilisation of two ova produced in the same menstrual cycle by two spermatozoa deposited in two separate acts of coitus.

**Superfetation**: is fertilisation of two ova produced in two different menstrual cycles by two separate spermatozoa. Actually, this cannot occur in human as ovulation is suppressed once pregnancy occurs.

**Diagnosis**

*History*

* Family history of multiple pregnancy (wife and/ or husband).
* Recent intake of ovulatory drugs.
* Increased foetal movement.

*Inspection*

More enlargement of the abdomen.

*Palpation*

* Fundal level: higher than that corresponds to the period of amenorrhoea.
* Fundal, umbilical and first pelvic grips: can detect multiple foetal poles. At least, 3 poles should be palpated to diagnose twin pregnancy.
* Foetal limbs: felt as multiple knobs.

*Auscultation*

* Foetal heart sounds: are heard with maximum intensity in 2 separate points by 2 observers with a minimum difference of 10 beats per minute.
* Arnaux sign: occasionally, the superimposition of two foetal heart sounds produces a galloping rhythm.

*Ultrasonography*

* Diagnosis of twins:
	+ At 7th week: two separate gestation sacs can be identified.
	+ At 8th week: separate foetal bodies can be detected.
	+ At 12th week: separate heads can be distinguished.
	+ If routine scanning of all pregnant women is carried out at 16 weeks twins should rarely be missed.
* Detection of:
	+ Presentations and positions.
	+ Gestational age.
	+ Congenital anomalies.
	+ Polyhydramnios.
	+ Placental site.

*X-ray*

If ultrasound is not available it can detect foetal heads and vertebral columns.

Vaginal examination during labour

The presenting part is small if compared to the oversized abdomen.

**Differential Diagnosis**

From other causes of oversized uterus (see before).

Risk of Multiple Pregnancy

* During pregnancy:
	+ Anaemia: because of the increased foetal demand for iron and folic acid.
	+ Hyperemesis gravidarum.
	+ Pregnancy induced hypertension.
	+ Polyhydramnios .
	+ Abortion and preterm labour.
	+ Placenta praevia due to the presence of 2 placentae or one large placenta.
	+ Pressure symptoms: dyspnoea, palpitation and oedema of the lower limbs.
	+ Congenital anomalies: double its incidence in singleton pregnancy.
* During labour:
	+ Complications of malpresentations:
		- In 45% of cases both twins present by head.
		- In 35% one fetus presents by the head and the other by the breech.
		- In 10% both present by breech.
		- In 10% one is transverse lie and the other is cephalic or breech.
		- Very rare that both twins lie transversely.
	+ Premature rupture of membranes.
	+ Cord prolapse.
	+ (Dysfunctional uterine action: of all types may occur due to overdistension of the uterus and malpresentations.
	+ Locked twins: occurs when the after-coming head of the first breech fetus is locked with the head of the second cephalic fetus. This is managed by:
		- Disimpaction: tried under general anaesthesia by grasping the head of the second twin, rotating and pushing it up. If failed do,
		- Sacrification of the first fetus: which is usually dead by decapitation, the second twin can then be delivered followed by extraction of the head of the first twin.
	+ Retained second twin.
	+ Postpartum haemorrhage due to:
		- atony results from overdistended uterus and prolonged labour,
		- large placental site,
		- placenta praevia or early separation of the placenta after delivery of the first twin.

**Management**

*During pregnancy*

* Frequent antenatal visits: to detect early any complication mentioned before and manage it.
* Proper diet: with prophylactic supplementation of iron and folic acid.
* Adequate rest: to improve placental blood flow and avoid preterm labour.
* Prophylactic tocolytics or cerclage: is of no actual benefit.

*During labour*

* Delivery should be in a hospital .
* A team of experienced obstetrician, assistant, anaesthetist and neonatologist is necessary for safety.
* First stage: is managed as usual unless there is an indication for caesarean section (see later).
* Second stage:
	+ Delivery of the first twin:
		- If it is cephalic: proceed as normal usually there is no problem.
		- If it is breech: caesarean section is safer for fear of locked twins, although vaginal delivery may pass without this complication.
		- Immediate clamping of the cord is essential after delivery of the first twin to avoid bleeding from a uniovular second twin.
	+ Delivery of the second twin: It depends upon its presentation;
		- Longitudinal lie (vertex or breech):
			* Amniotomy is done during uterine contraction which may be delayed up to 5 minutes.
			* If delay is more than 5 minute, start oxytocin drip.
			* Delivery of the second twin is usually easy due to dilatation of the maternal passages by delivery of the first twin.
			* If there is foetal distress or cord prolapse, rapid delivery is indicated by:
				+ breech extraction in breech presentation.
				+ Forceps delivery in engaged vertex presentation.
				+ Vacuum extraction or rarely internal podalic version and breech extraction may be indicated in non-engaged head.
		- Transverse or oblique lie:
			* a. External cephalic or podalic version is done then do amniotomy and deliver the fetus as cephalic or by breech extraction respectively or,
			* b. Internal podalic version and breech extraction under general or epidural anaesthesia.
	+ Caesarean section is indicated in:
		- The first baby is transverse lie.
		- Prolapsed pulsating cord or foetal distress in the first stage.
		- Retained second twin when it is;
			* transverse lie,
			* membranes are ruptured,
			* uterus is retracted and
			* cervix is not fully dilated.
		- Conjoined twins.
		- Triplets or more are safer delivered by C.S.
		- Other indications of C.S. as placenta praevia, contracted pelvis, etc.
* Third stage of labour:
	+ Active management and observation is indicated to guard against postpartum haemorrhage.