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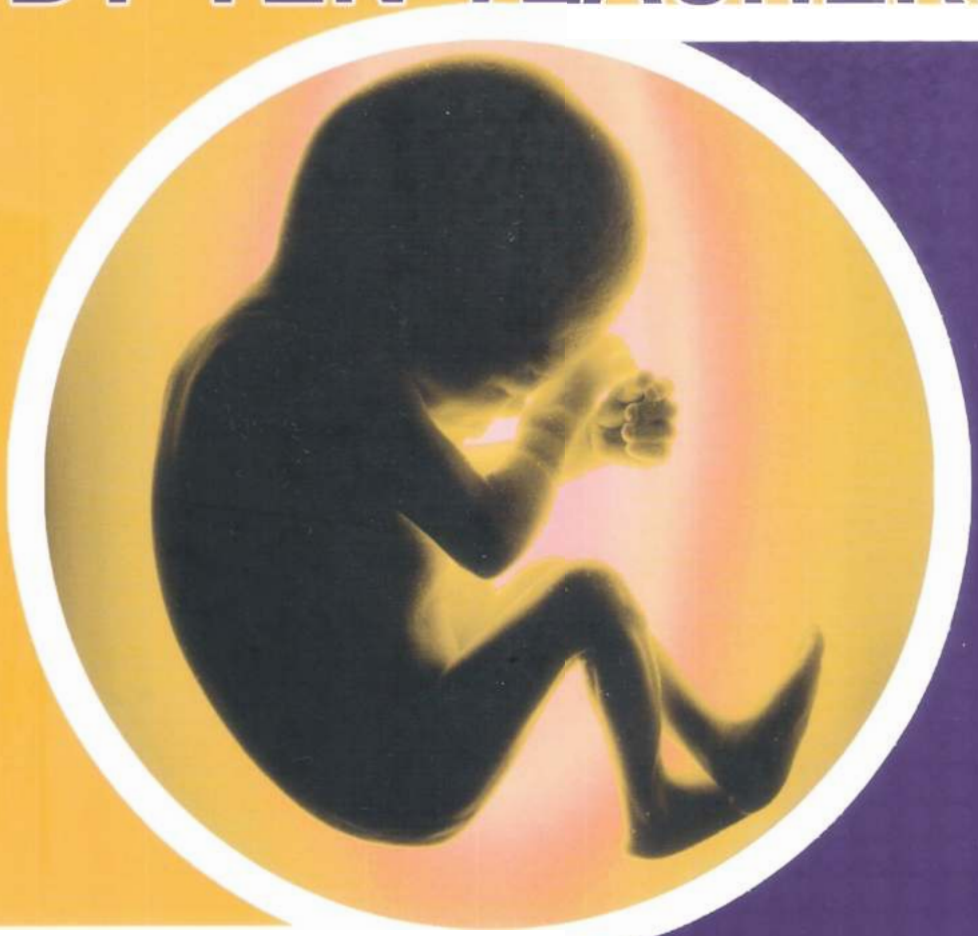
18th edition

INTERNATIONAL STUDENTS' EDITION

OBSTETRICS BY TEN TEACHERS



Edited by Philip N. Baker

Obstetrics by Ten Teachers

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18th Edition

Edited by

Philip N. Baker
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Director of Clinical and Translational Research Centre,
Consultant Obstetrician, St Mary's Hospital,
University of Manchester, Manchester, UK

Hodder Arnold

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Acknowledgements

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[illegible]

Preface

[illegible]

[illegible]

> [illegible]

[illegible]

[illegible]

[

Commonly used abbreviations

Chapter 1

Obstetric history taking and examination

[illegible] 1
[illegible] 2
[illegible] 3
[illegible] 7
[illegible] 9
[illegible] 10
[illegible] 12
[illegible] 14
[illegible] 16

OVERVIEW

[illegible]

Etiquette in taking a history

[illegible]

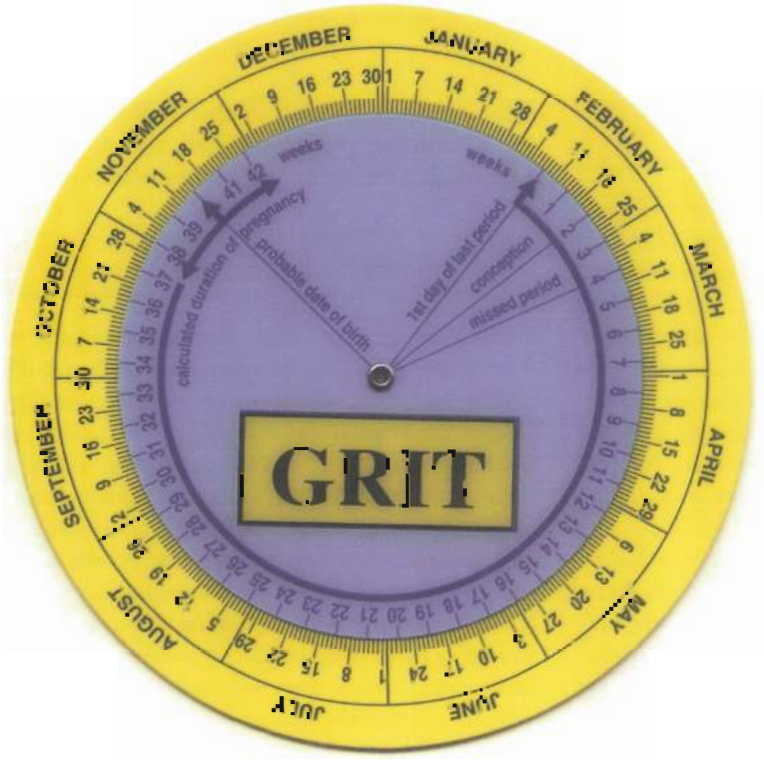
Where to begin

[illegible]

Dating the pregnancy

- the clinical estimation of gestation by palpation of the uterus and measurement of symphysis–fundal height.

Figure 1.1 [illegible]



Taking the history

Social history

-
-
-

Previous obstetric history

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

- [illegible]
- [illegible]

[illegible]

[illegible]

[

BASIC HISTORY

Medical and surgical history

[illegible] medical [illegible] surgical history [illegible] drug history [illegible] [illegible] [illegible]

Examination

Maternal weight and height

Blood pressure evaluation

Urinary examination

General medical examination

Cardiovascular examination

Breast examination

Abdomen

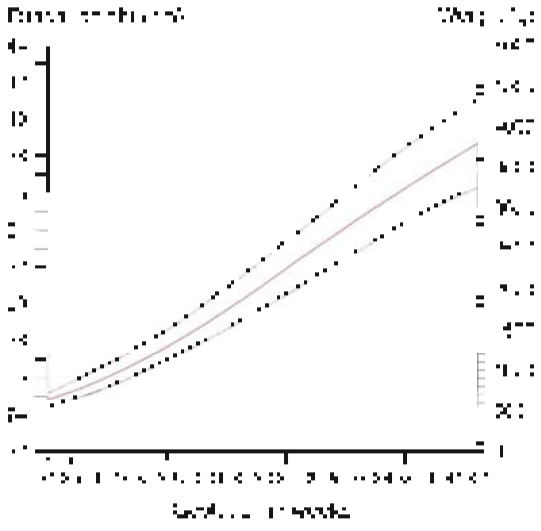


Figure 2

Fetal presentation and engagement

If the presenting part is palpable, the fetal lie is longitudinal. A large SFH raises the possibility of

- twins
- multiple pregnancy
- polyhydramnios

Remember to consider maternal obesity

- small SFH could be caused by
- wrong dates
- oligohydramnios

Other causes of a large or small SFH, including fetal growth restriction, are discussed on page 13. A palpable head or breech that is not engaged in the pelvis may be due to a malpresentation or malposition, placenta praevia or polyhydramnios. Abdominal examination is rarely sufficient to diagnose placenta praevia.

Abdominal palpation is the first step in detecting fetal abnormality. Most abnormalities

Ultrasound is the most accurate method of assessing fetal growth and is used routinely in the third trimester. Fetal growth restriction is suspected when

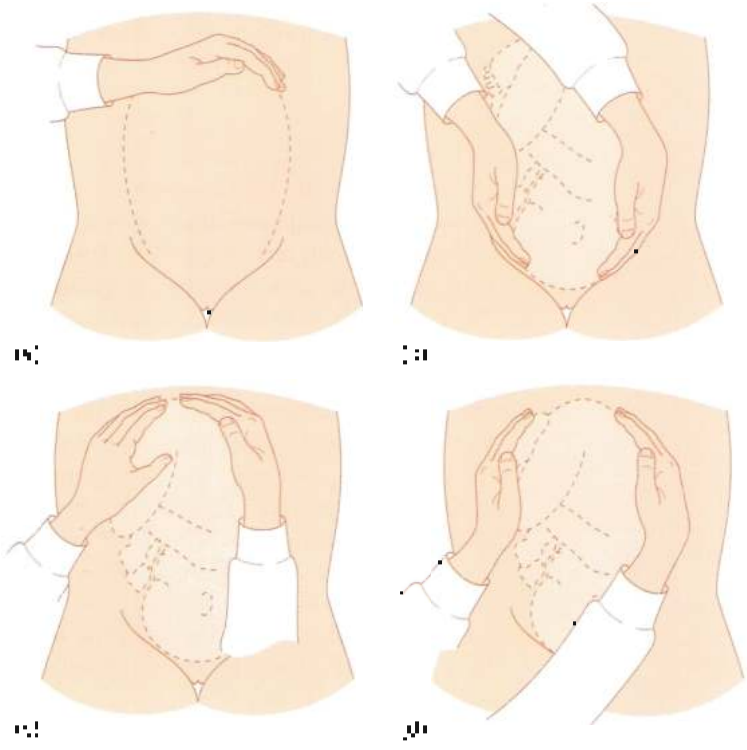


Figure 1.3 a–d

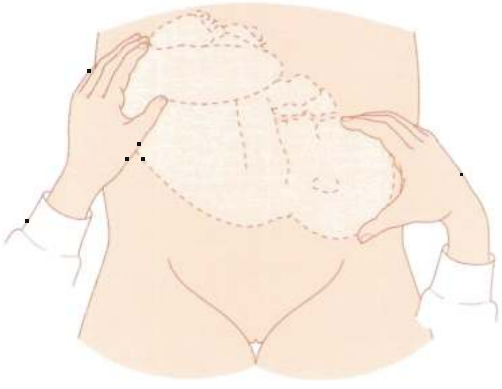


Figure 1.4

[illegible]

[illegible]

[illegible]

Figure 1.6

Pelvic examination

Other aspects of the examination

Table 1.1 [illegible]

	Low			
	[illegible]	[illegible]	[illegible]	[illegible] more
[illegible]	Plain [illegible]	Medium [illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Presentation skills

Key Points

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

History template

Demographic details

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

This pregnancy

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Ultrasound

- [illegible]
- [illegible]
- [illegible]

Past obstetric history

- [illegible]
- [illegible]
- [illegible]

Contraceptive history

- [illegible]
- [illegible]
- [illegible]

Past medical and surgical history

- [illegible]
- [illegible]

Psychiatric history

- [illegible]
- [illegible]
- [illegible]

Family history

- [illegible]

Social history

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Drugs

- [illegible]
- [illegible]

Allergies

- [illegible]
- [illegible]

Chapter 2

Modern maternity care

[illegible]	11	[illegible]	1
[illegible]	17	[illegible]	1
[illegible]	18	[illegible]	1

OVERVIEW

[illegible]

History of maternity care

[illegible]

The Introduction of the National Health Service [illegible]

[illegible]

[illegible]

[

[illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

Research into patterns of maternity care provision

[illegible]

[illegible]

[illegible]

Co-ordination of research: the Cochrane Collaboration (Fig. 2.1)

Involvement of professional bodies and consumer groups in maternity care

National Institute for Clinical Excellence

National Screening Committee

Royal College of Obstetricians and Gynaecologists

Clinical Negligence Scheme for Trusts

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

Consumer groups

[illegible]

[illegible]

[illegible]

Chapter 3

Maternal and perinatal mortality: the Confidential Enquiries

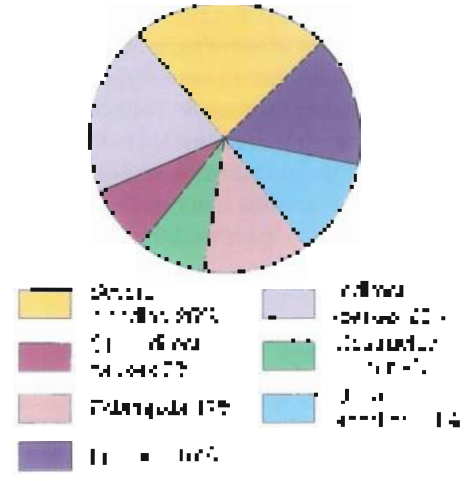
[illegible] study 31 [illegible] mortality 37
[illegible] mortality 3 [illegible] 32

OVERVIEW

[illegible]

Worldwide causes of maternal mortality

[illegible]



[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

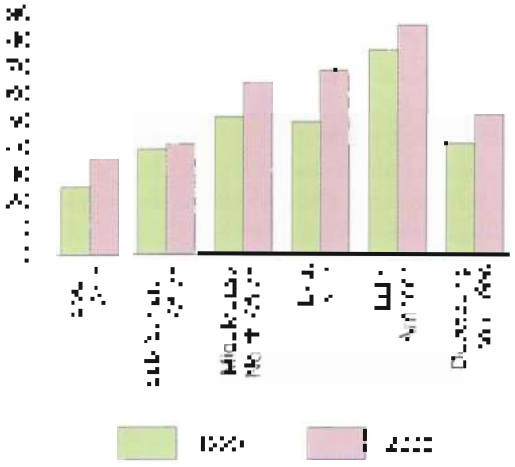


Figure 3.2

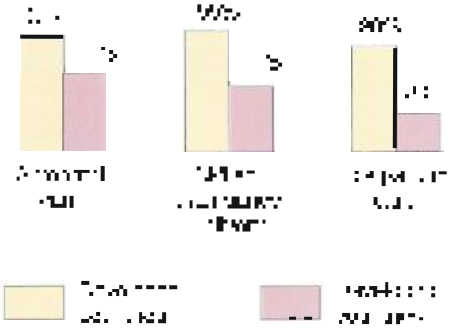


Figure 3.3

...reduction in ...Sub-Saharan Africa needs to take ...epidemic into account. In countries ...South Africa and Zambia, AIDS and ...contribute significantly ...rates of maternal death (see Fig. 3.1).

...launched at a conference ...Nairobi, Kenya, in 1987. Its aim was to draw ...attention to the thousands of deaths and ...disabilities suffered by women every ...year. The Nairobi conference was co-sponsored by ...organizations, including the Safe ...Motherhood Interagency Group.

The ... Safe Motherhood Project are to ...encourage ... that all women can ...look forward to ...pregnancy, maternal health ...services, ... during pregnancy, childbirth ...and ... The Safe Motherhood ...Project ... to:

- ...
- ...
- ...
- ...
- ...
- ...

...

Maternal and perinatal mortality in the UK

...

- [illegible] previously existing [illegible] during [illegible] to direct [illegible] but which was aggravated by the [illegible] of pregnancy that are due to [illegible] maternal causes (e.g. death from [illegible] such as Ebstein's anomaly)
- [illegible] occurring between 42 days and 1 year [illegible] delivery that are due [illegible] maternal causes.
- [illegible] Conditions [illegible] unrelated [illegible] pregnancy [illegible] in pregnancy or the [illegible] aggravated [illegible].

Maternal mortality rate

[illegible] UK [illegible] number of deaths [illegible] [illegible] [illegible]

- In 1935 [illegible] making it [illegible] responsible [illegible] limiting the previous [illegible] of birth attendants.
- [illegible] during the 1940s.
- [illegible] treatment and prevention of [illegible] introduced in the [illegible].
- [illegible] and the [illegible] and Gynaecologists [illegible].
- [illegible] [illegible] [illegible].
- [illegible] [illegible] [illegible] [illegible].

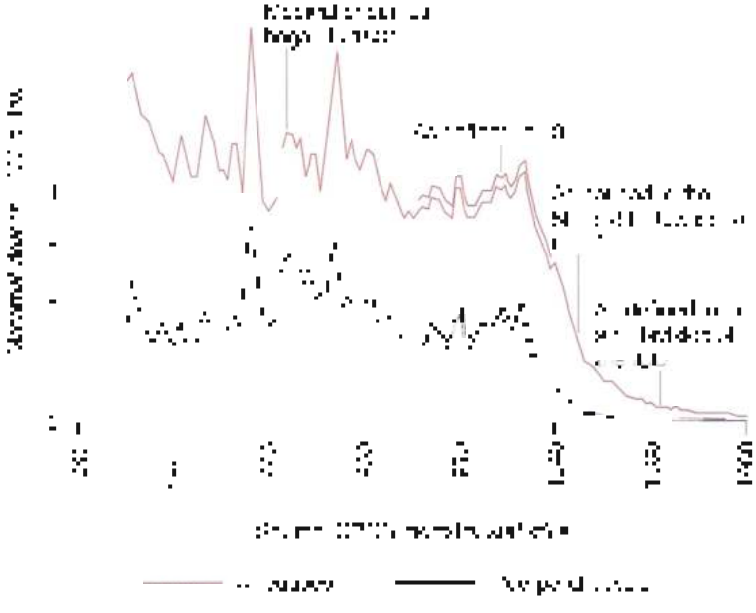


Figure 3.4 [illegible]

[illegible]

[illegible]

[illegible]

[illegible] deaths [illegible]

[illegible]	[illegible] deaths
[illegible]	
[illegible]	13
[illegible]	12
[illegible]	7
[illegible]	6
[illegible]	4
[illegible]	4
[illegible]	3
[illegible]	3
[illegible]	2
[illegible]	1
[illegible]	1
Other direct causes	
Indirect causes	
[illegible]	13
[illegible]	11
[illegible]	10
[illegible]	7

[illegible] [illegible] [illegible] [

[illegible]

[illegible]

[illegible]

[illegible] contributed to the [illegible] deaths in the [illegible] contributed to the death of the woman. [illegible] [illegible] [illegible]

Perinatal mortality

Definitions

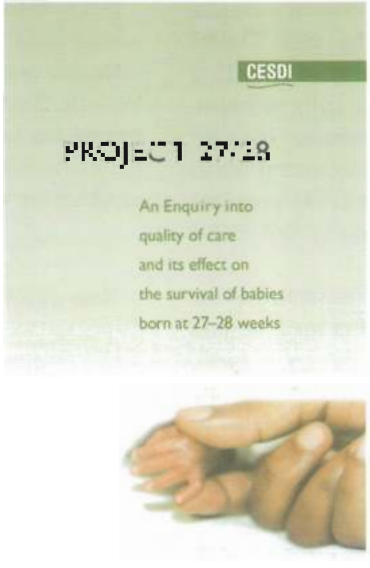


Figure 3.6

- [illegible]
- [illegible]
- [illegible]
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[illegible]

- [illegible]
- [illegible]
- [illegible]

[illegible]

The worldwide picture

[illegible]

[illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

[illegible]

History in the UK

[illegible]

[illegible]

[illegible]

[illegible]

Method of the confidential enquiry

[illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]

- Uterine rupture
- Amniotic fluid embolism
- Eclampsia
- Unexplained antepartum haemorrhage
- Unexplained intrapartum haemorrhage
- Unexplained postpartum haemorrhage
- Puerperal pyrexia

Anaesthetic problems
- Failed intubation
- Cardiac arrest
- Awareness during anaesthesia

Other problems
- Maternal collapse
- Unexpected admission to intensive care unit

The special programmes at CESDI

CESDI undertook work in individual units to collect more detailed information on the causes of perinatal mortality. The programmes of work and studies are listed below.

Programme 1
- Antenatal and intrapartum stillbirths
- Intrapartum and neonatal deaths
- Unexpected neonatal deaths in term infants
- Antenatal and intrapartum deaths in preterm infants
- Congenital abnormalities

Programme 2
- Sudden unexpected postnatal deaths
- Congenital abnormalities
- Unexpected deaths in term infants

Programme 3
- Stillbirths
- Unexpected deaths

- Unexpected neonatal deaths
- Antenatal and intrapartum deaths
- Deaths due to unfavourable onset of labour
- Infections

Applying multidisciplinary work
- Case-note screening
- Case-note abstraction
- Classification of perinatal care
- Establishment of monitoring

Classification systems

Classification systems are used to group deaths into categories for analysis. The Confidential Enquiry into Stillbirths and Deaths in Infancy (CESDI) used the Wigglesworth classification and the Obstetric Classification. These are described briefly below.

Wigglesworth classification
- Group 1: antepartum haemorrhage, pre-eclampsia, placental insufficiency
- Group 2: congenital malformations
- Group 3: infection, including intrapartum infection
- Group 4: immaturity
- Group 5: birth trauma, including intracranial haemorrhage and hypoxia
- Group 6: miscellaneous
- Group 7: unexplained
- Group 8: unclassified, for those deaths with insufficient information

Obstetric Clinical classification
Mothers are classified into one group by considering the following in order:
- Congenital anomaly
- Rhesus isoimmunisation
- Hydrops fetalis
- Antepartum haemorrhage
- Pre-eclampsia and eclampsia
- Maternal medical disorders
- Uterine rupture
- Other obstetric
- Unexplained

Additional information recorded
The following are also recorded for each baby:
- Congenital anomalies
- Post-mortem findings
- Antenatal abnormalities

- Birthweight
- Socioeconomic deprivation
- Hypertensive disease
- Intrauterine haemorrhage
- Infection
- Malformations
- Unknown/unascertained

In the Confidential Enquiry into Stillbirths and Deaths in Infancy (CESDI) [1], the cause of death was unascertained in 30% of cases. The high proportion of unexplained deaths is partly due to the fact that many of the antenatal deaths occurred in women who had had no antenatal care.

The causes of stillbirth in the CESDI study are shown in Table 3.2.

Table 3.2 Causes of stillbirth in the CESDI study (1994–95 births)

	Number	Percentage
Congenital malformation	37	11
Infection	120	20
Antepartum haemorrhage	102	16
Hypertensive disease	4	1
Other	62	13
Total	325	

Source: CESDI Eighth Annual Report [1]

The potential for reduction in perinatal mortality depends on the proportion of deaths that are due to avoidable factors.

Congenital malformations

Congenital malformations are the most important cause of perinatal mortality in the UK.

Some malformations are lethal in early pregnancy and result in miscarriage. Others are incompatible with survival after birth. Some malformations are detectable antenatally and may be amenable to treatment in utero or to termination of pregnancy.

Some malformations, such as spina bifida and anencephaly, are associated with poverty, ethnic origin and maternal age. In addition, [illegible] should take action to reduce the incidence of these malformations. [illegible] decline in the numbers [illegible] NTD.

Antenatal screening for chromosomal abnormalities and malformations is widely available. Screening tests involving ultrasound or biochemical testing are, in some cases, very effective. The most common chromosomal abnormality, Down's syndrome, does not usually have any associated structural abnormalities that can be detected by routine antenatal ultrasound.

Antepartum fetal death

Antepartum stillbirth is usually defined as [illegible]

During the 1994–95 period, CESDI reported [illegible] of the 325 stillbirths [illegible] were associated with [illegible] Other causes included [illegible] and placental abruption. [illegible] were unexplained. [illegible] were potentially avoidable [illegible]

[illegible] CESDI [illegible] of stillbirths, [illegible] of the most common causes [illegible] are considered.

- Infection
- Antepartum haemorrhage
- Hypertensive disease
- Fetal abnormalities
  - Fetal growth restriction
  - Congenital malformations
  - Chromosomal abnormalities
- Fetal movements
- Maternal medical conditions (especially diabetes mellitus)
- Unexplained antepartum stillbirth (including those associated with normal fetal growth)

Intrapartum asphyxia

The [illegible] of [illegible] intrapartum [illegible] is [illegible]

[illegible] [illegible] [illegible] [

Key Points

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Additional reading

[illegible]

[illegible]

Conception, implantation and embryology

Somatic and germ cells
Mitosis and meiosis
Pathophysiology: clinical importance

OVERVIEW

This chapter introduces embryology, describing the formation of the gametes, fertilization and the development of the embryo and fetus. It also describes the development of the placenta and the fetal membranes, and the changes that occur in the mother during pregnancy.

Somatic and germ cells

The human body consists of two types of cells: somatic cells and germ cells. Somatic cells are the cells of the body, such as skin cells, muscle cells and nerve cells. They are diploid, meaning they contain two sets of chromosomes, one set inherited from each parent. Germ cells are the cells that are passed on to the next generation. They are haploid, meaning they contain only one set of chromosomes. The germ cells are the sperm cells in males and the egg cells in females. When a sperm cell fertilizes an egg cell, the resulting cell is diploid and contains two sets of chromosomes.

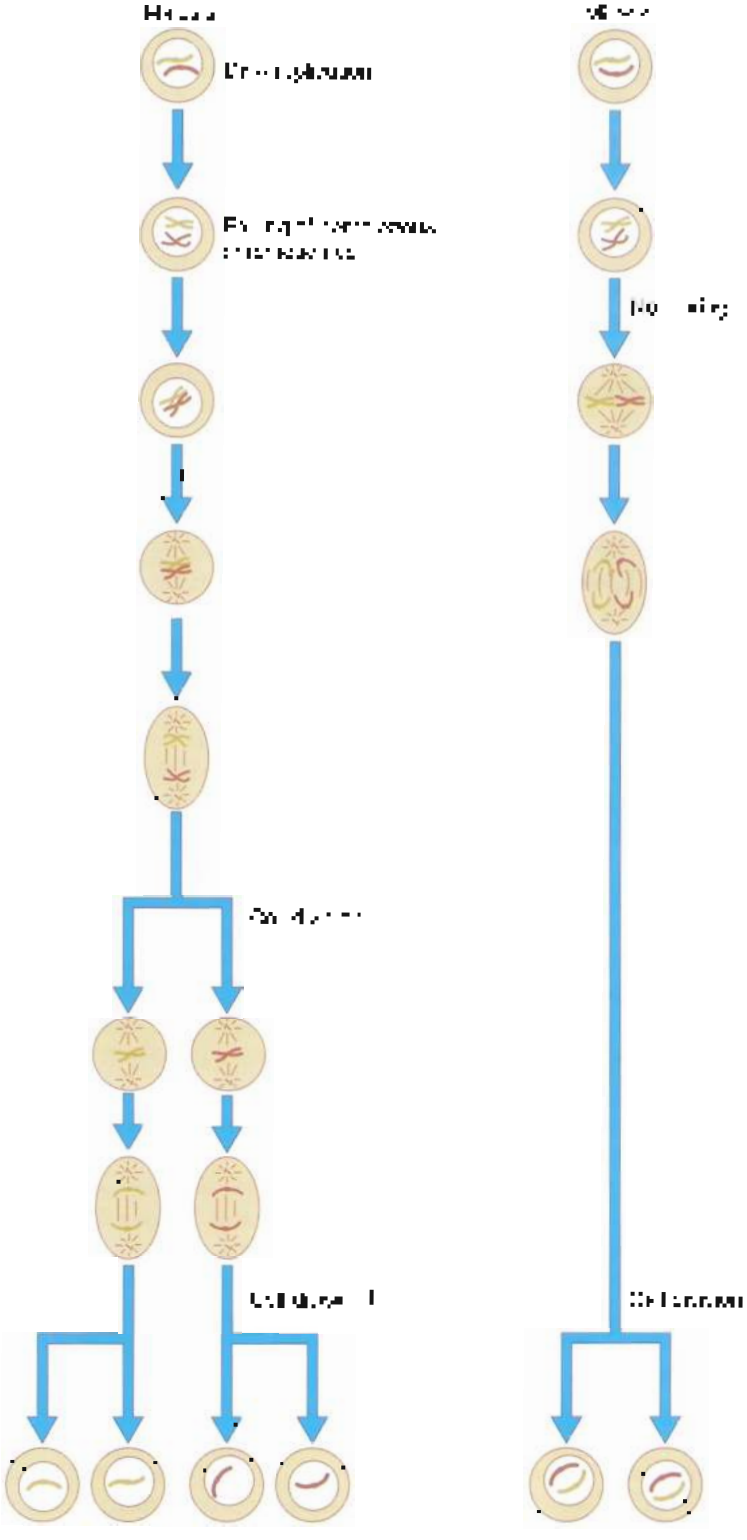
The human germ cells are the sperm cells in males and the egg cells in females. The sperm cells are produced in the testes and the egg cells are produced in the ovaries. The sperm cells are small and motile, while the egg cells are large and non-motile. The sperm cells are produced in large numbers, while the egg cells are produced in small numbers.

Mitosis and meiosis

Cell division is the process by which cells reproduce themselves. There are two types of cell division: mitosis and meiosis. Mitosis is the process by which somatic cells divide. It results in two daughter cells that are genetically identical to the parent cell. Meiosis is the process by which germ cells divide. It results in four daughter cells that are genetically different from the parent cell and from each other.

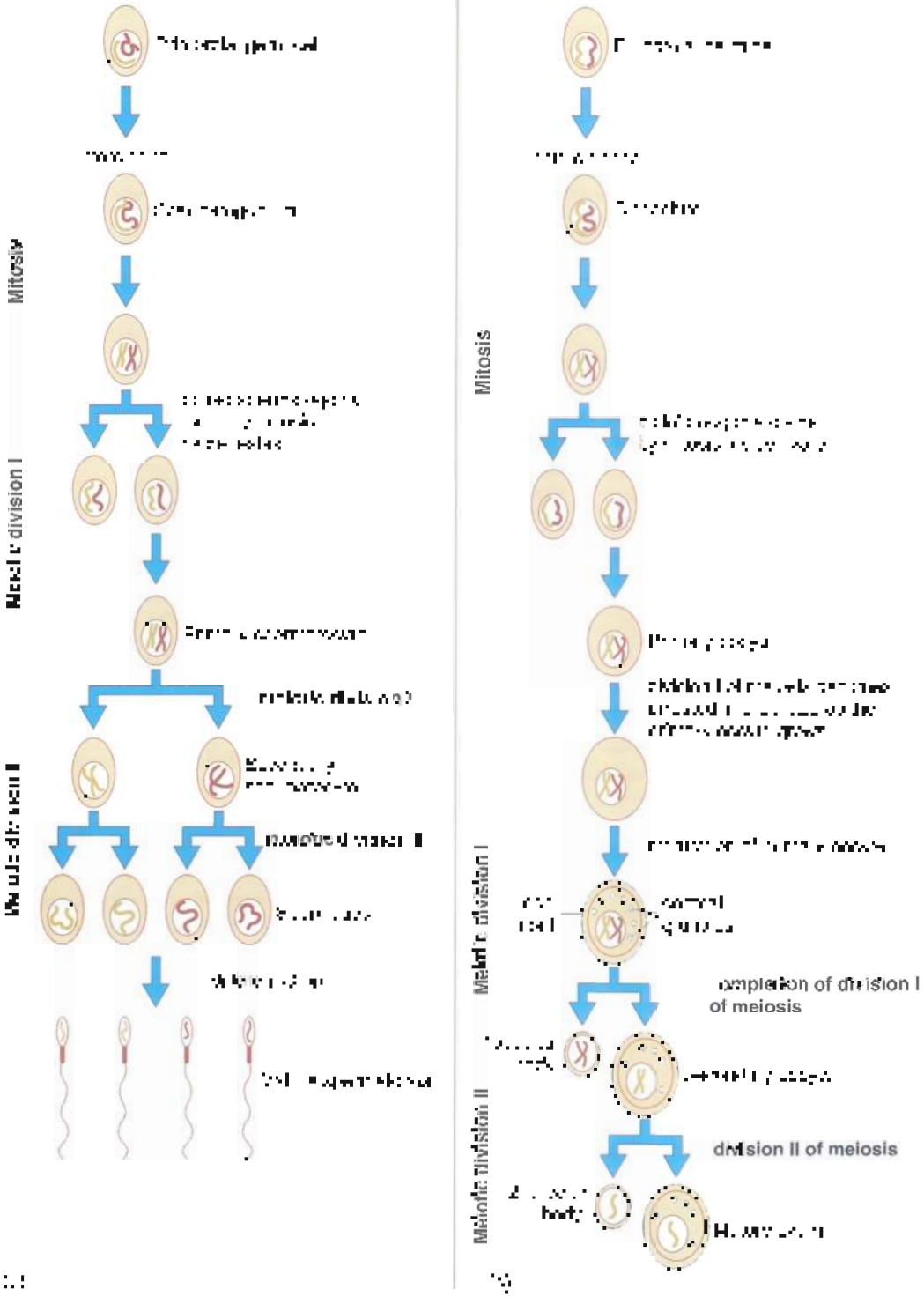
Pathophysiology: clinical importance

Understanding the formation of gametes, fertilization, and embryonic development is essential for understanding many clinical conditions, including infertility, miscarriage, and congenital abnormalities.



Conception, implantation and embryology

Conception


Mitosis
Meiotic division I
Meiotic division II
completion of division I of meiosis
division II of meiosis

Key Points

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
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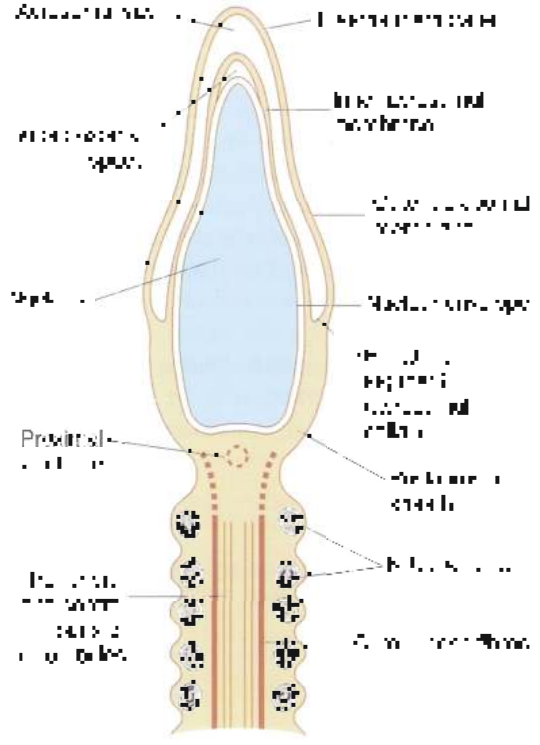


Figure 4.8

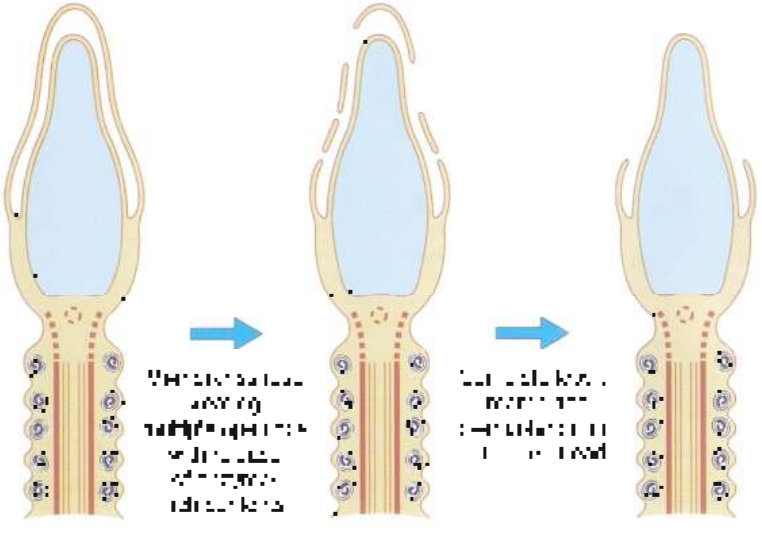


Figure 4.9

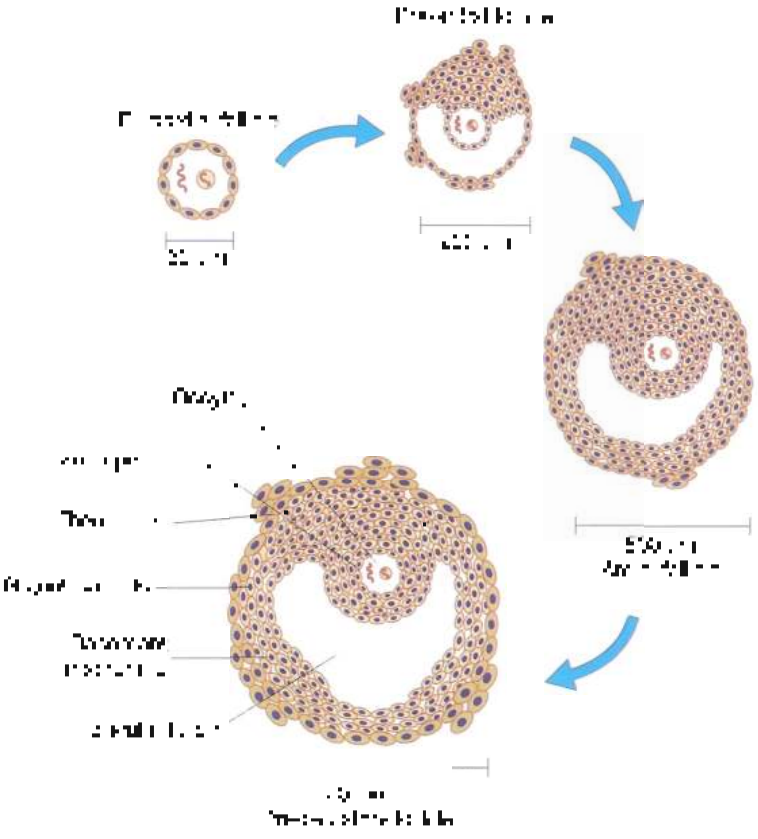
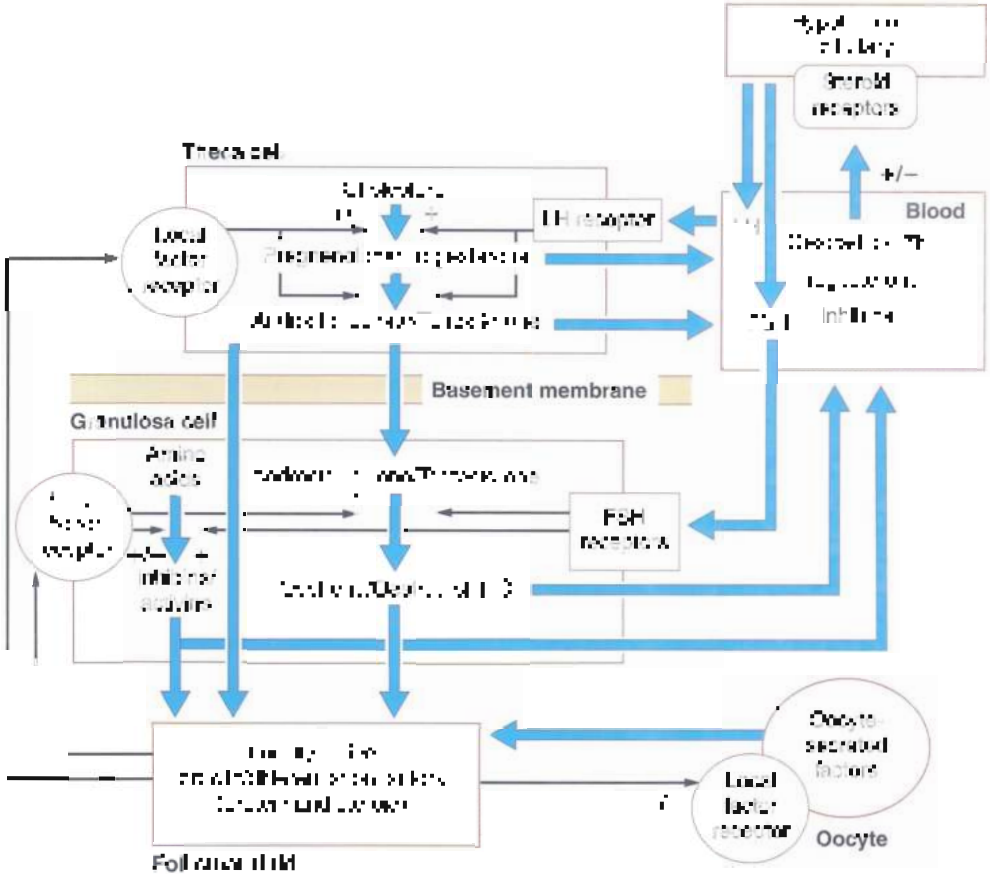


Figure 4.1


Blood
Basement membrane
Granulosa cell
Oocyte

[illegible] in a return to a diploid [illegible]

[illegible] is the final phase of fertiliza- [illegible] and telophase are completed. [illegible] two-cell embryo.

Pathophysiology: clinical importance

[illegible] (IVF) techniques the mature [illegible] sperm on day zero. On day [illegible] that two pronuclei are present, indicating that normal fertiliz- [illegible] day three [illegible] dividing [illegible] for [illegible]

Implantation

[illegible]

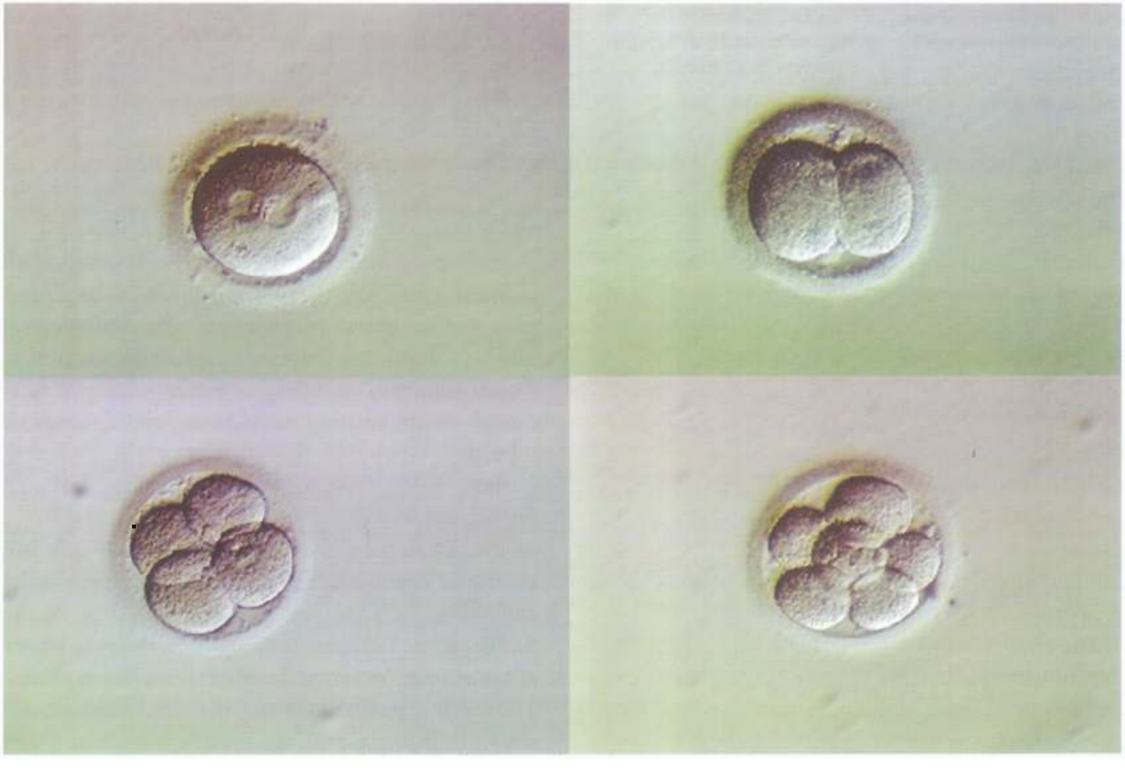


Figure 4.3 [illegible]

Figure 4.9 [illegible]
[illegible]

[illegible]

[illegible]

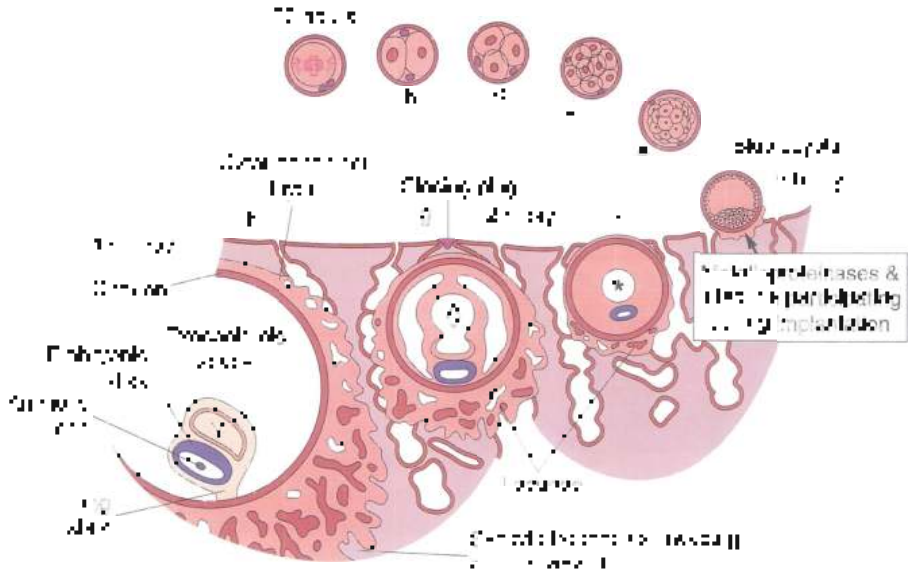


Figure 4.18

Embryology

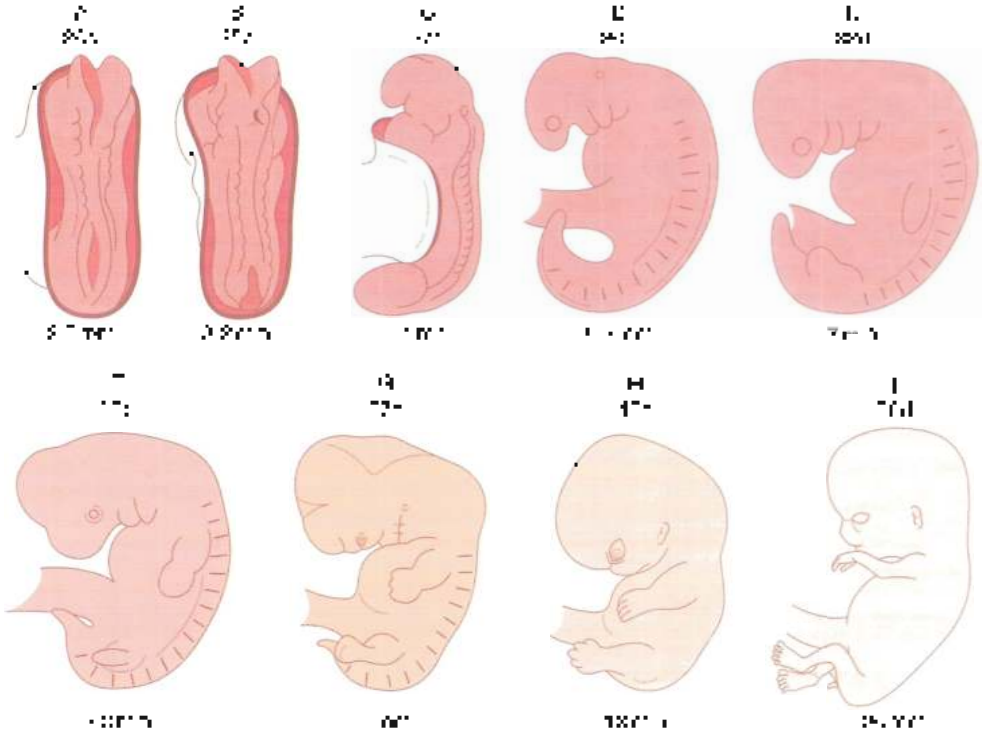


Figure 1.11 Series of diagrams to illustrate embryological development. [illegible]

New developments

Key Points

Chapter 5

Physiological changes in pregnancy

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

OVERVIEW

[illegible]

[illegible]

Systemic changes

Volume homeostasis

[illegible]

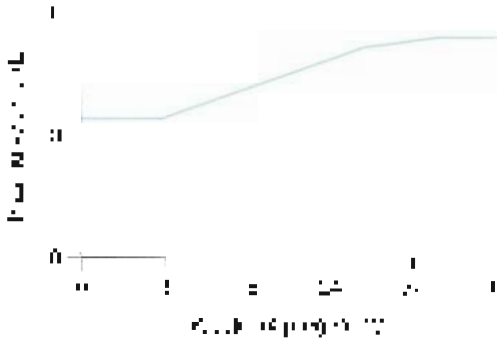


Figure 5.1 [illegible]

[illegible]

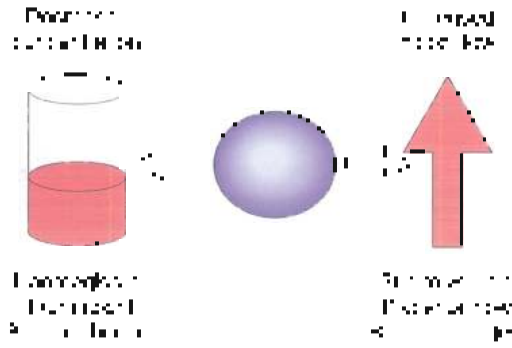


Figure 5.2

Blood

[illegible] the substantial [illegible] sedimentation rate that [illegible] since it enhances rouleaux [illegible]. The [illegible] relative hypercoagulability is [illegible]. One of placental separ[illegible] about 500 mL of blood flows through [illegible] per minute. Without effective and [illegible] would die from exsan[illegible]. Myometrial contrac[illegible] compressing the blood [illegible] placental bed (see Fig. 5.5, p. 59), [illegible] be deposited [illegible] the circulation [illegible] [illegible] [illegible]

Table 5.1

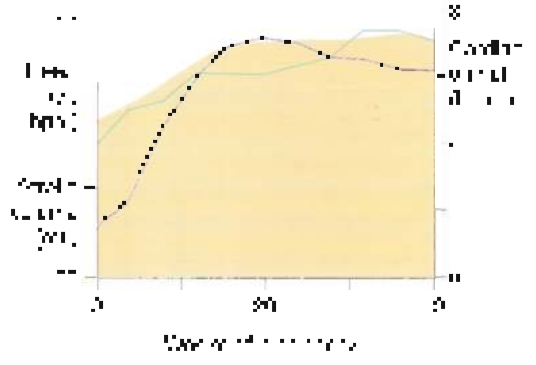


Figure 5.2

Key Points

Cardiovascular changes

Normal changes in heart sounds during pregnancy

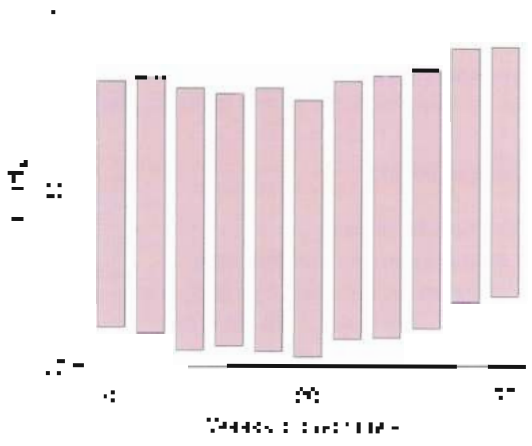


Figure 5.4

Reproductive organs

The uterus

CASE HISTORY

What is the diagnosis?

Why has the woman presented at this time?

What is the treatment?

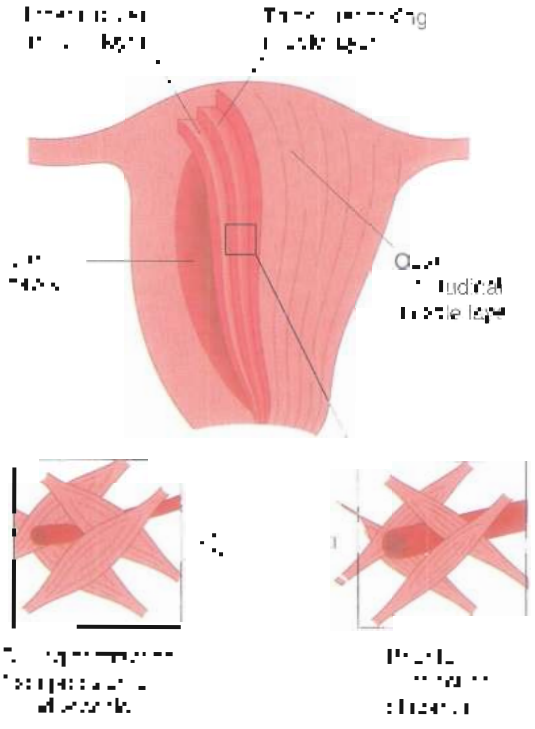


Figure 5.5

The cervix

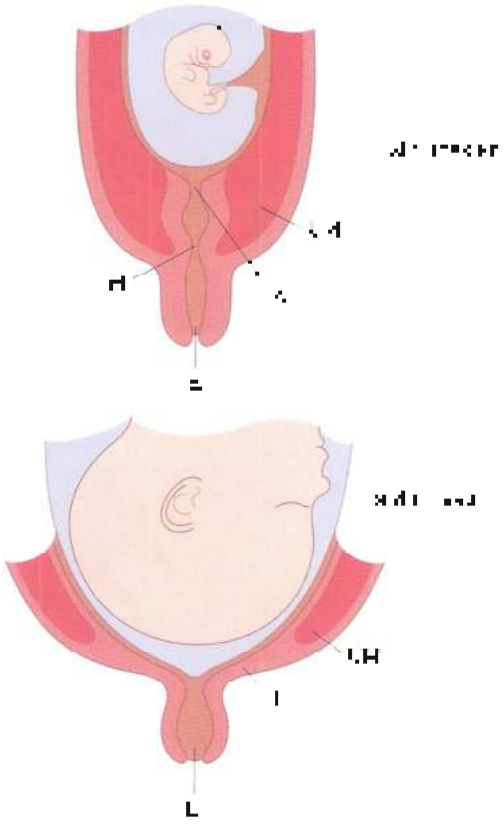
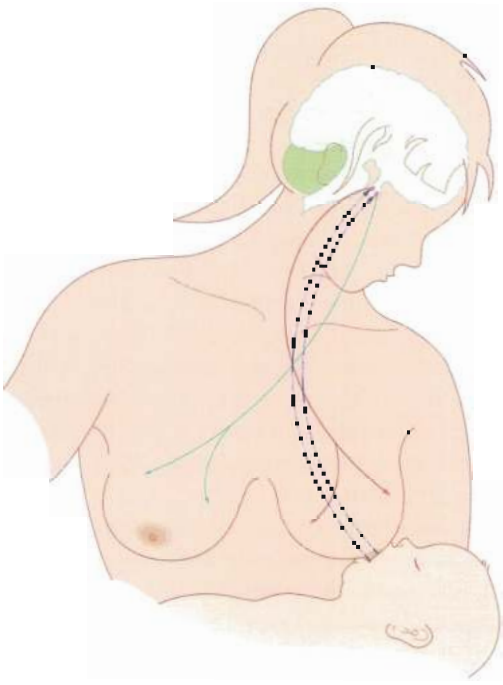


Figure 4.5 [illegible]

Breasts and lactation

[illegible]

The urinary tract and renal function



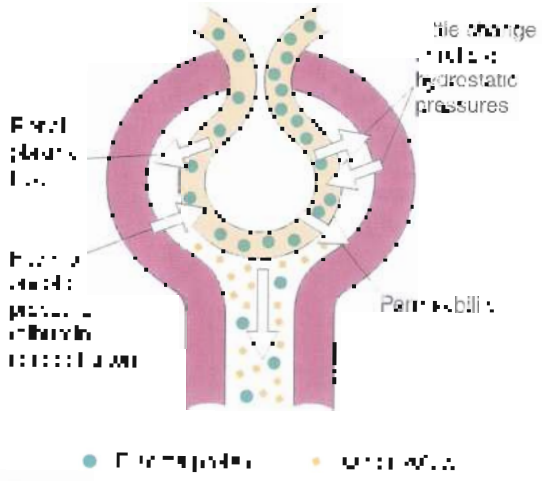


Figure 5.8

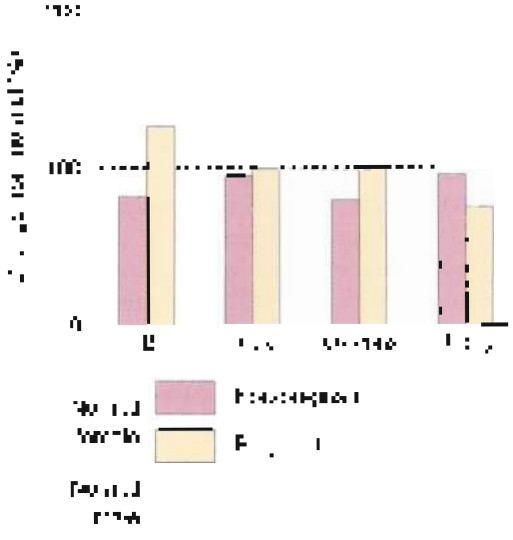
Key Points

Key changes

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Respiratory tract

[illegible]



[illegible]

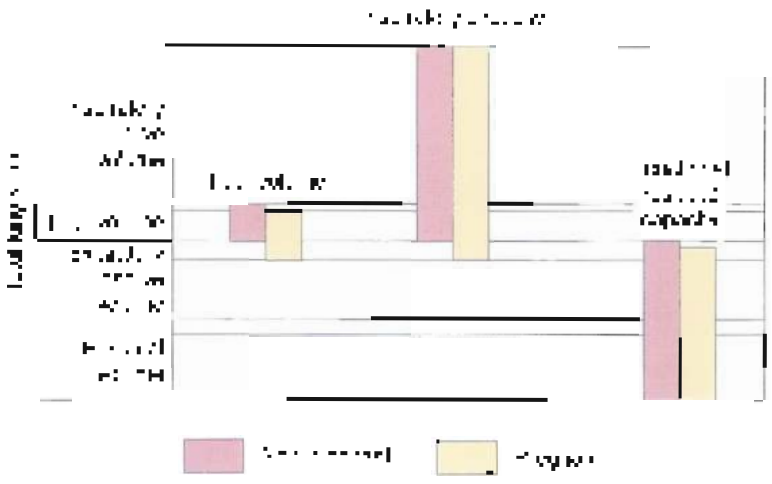


Figure 5.13 [illegible]

Key Points

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Key Points

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

Endocrinological changes

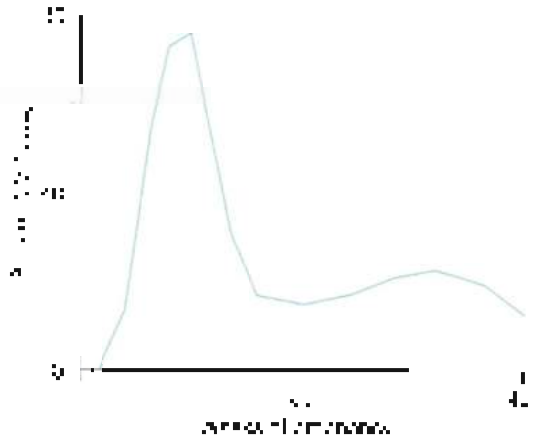


Figure 5.11 [illegible]

Factors controlling carbohydrate metabolism

Thyroid function

Factors controlling calcium metabolism

Placental corticotrophin-releasing factor and the onset of human labour: the placental clock theory

Corticosteroids and the renin–angiotensin system

Mechanisms of change

Maternal homeostasis

Key Points

Endocrine changes

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

CASE HISTORY

What investigations will help with the diagnosis?

What is the management?

How will Sheehan's syndrome affect future pregnancies?

Immune activity

[illegible]

[illegible] expression of anti-[illegible] [illegible] [illegible] [

Chapter 6

Normal fetal development and growth

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		

OVERVIEW

[illegible]

[illegible]

Fetal growth and maturation

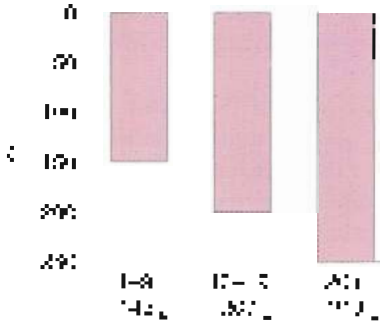
[illegible]

Table 6.1 [illegible]

[illegible]	
[illegible]	
[illegible]	
[illegible]	
[illegible]	

Table 6.2 [illegible] birth weight

[illegible]	9 g/kg
[illegible]	9 g/cm
[illegible]	
[illegible]	+110 g
[illegible]	+15 %
[illegible]	
[illegible]	14 g
[illegible]	[illegible]
[illegible]	
[illegible]	[illegible]



Cardiovascular system

The fetal circulation is quite different from that of the adult. Physiologic distinctive features are as follows.

- Oxygenation occurs in the placenta not the lungs.
- The right and left ventricles work in parallel rather than in series.
- The heart, brain and upper body receive blood from the left ventricle, while the placenta and lower body receive blood from both right and left ventricles.

These unique features ensure that the most oxygenated blood from the placenta is delivered to the most vital tissues. These are:

1. the foramen ovale, which shunts blood away from the lungs
2. the ductus arteriosus, which shunts blood away from the pulmonary circulation
3. the umbilical vein, which delivers blood from the placenta to the fetus.

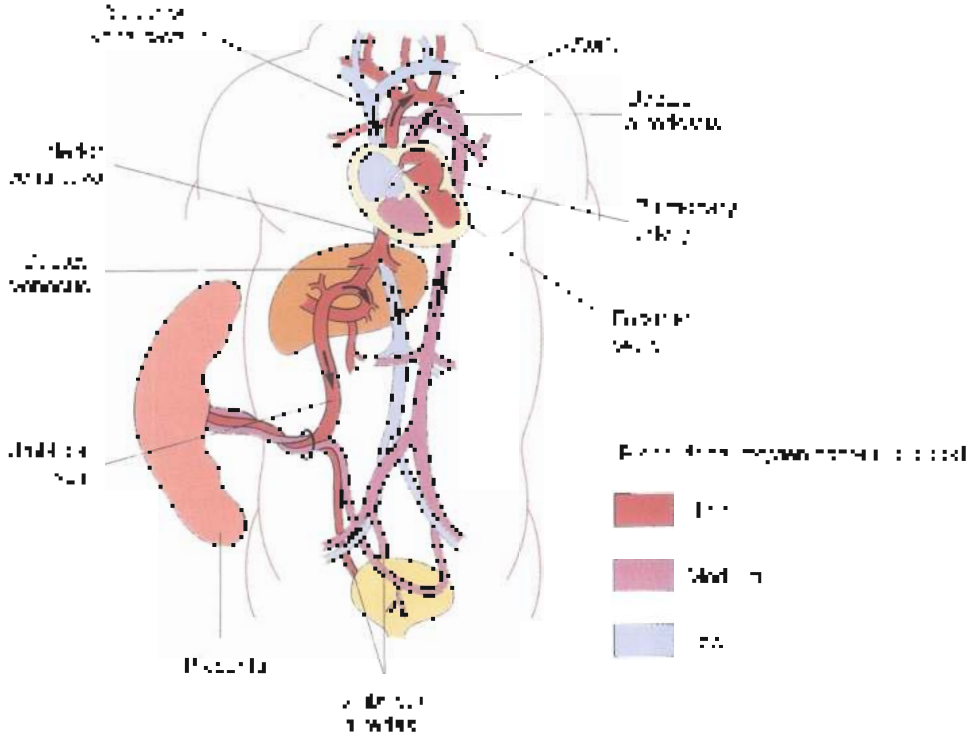


Figure 6.2 Fetal circulation. Blood flow is depicted by arrows. Note that the ductus venosus shunts blood away from the liver, and the ductus arteriosus shunts blood away from the lungs.

Respiratory system: lung

Fetal blood

Immune system

Skin and homeostasis

Alimentary system and energy stores

Liver and gallbladder

Kidney and urinary tract

Fetal behaviour

Amniotic fluid

CASE HISTORY

As a premature infant, which complications is he particularly at risk of?

Which genetic tests should be performed?

Which other investigations are necessary?

Which treatment is appropriate?

BASE HISTORY

[illegible]

Which complications are such severely growth-restricted infants particularly at risk of?

[illegible]

Key Points

[illegible]

- [illegible]
  - [illegible]
  - [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
  - [illegible]
  - [illegible]

Chapter 2

Antenatal care

[illegible] 22 | [illegible] 33
[illegible] 4 | [illegible] 37
[illegible] 41 | [illegible] 47

OVERVIEW

[illegible]

Aims of antenatal care

The aims of antenatal care are:

- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

Classification of antenatal care

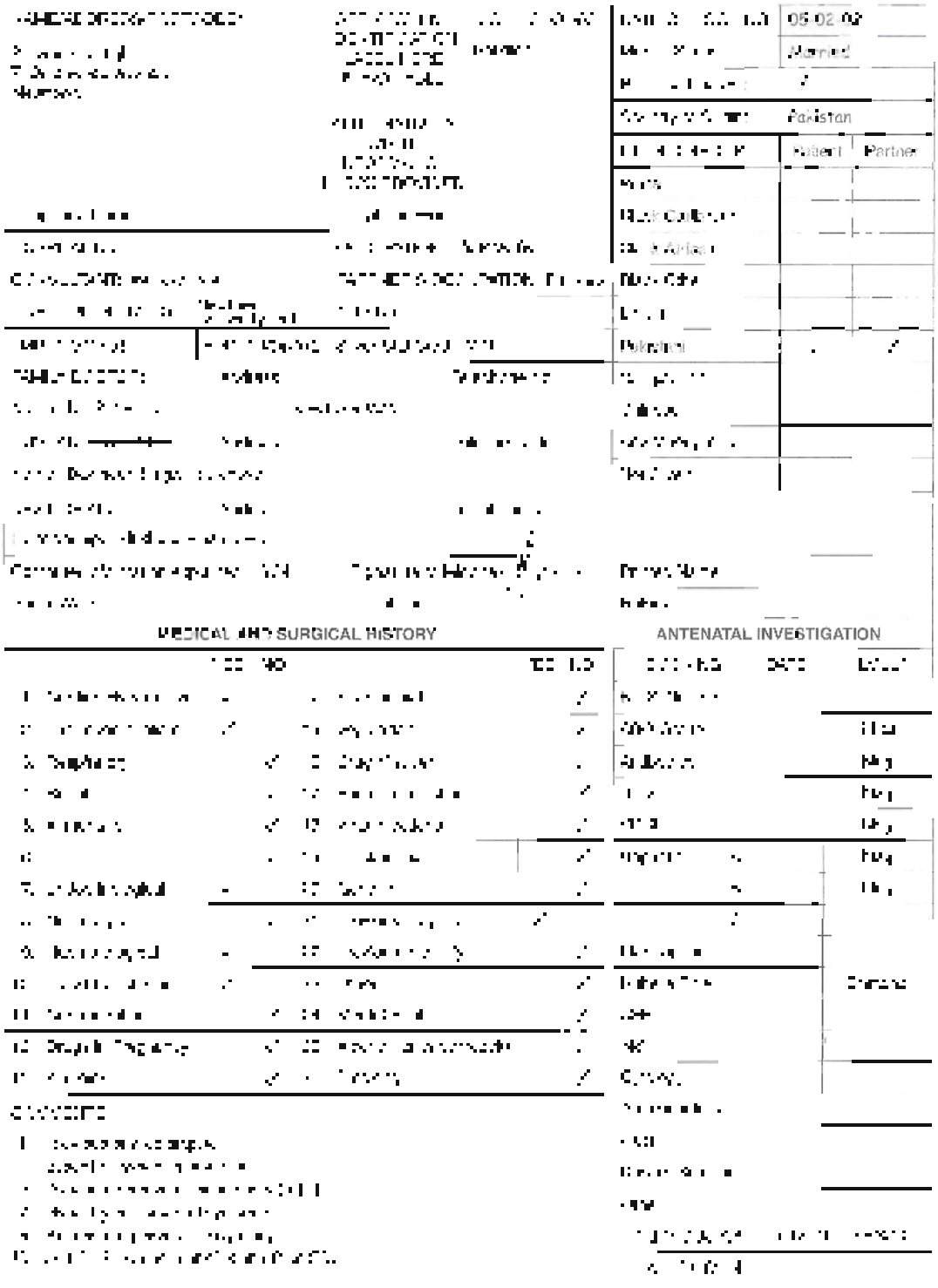
Shared care

[illegible]

Community-based care

Hospital based care

Advice, reassurance and education


05.02.02
Planned
Pakistan
Patient
Partner
MEDICAL AND SURGICAL HISTORY
ANTENATAL INVESTIGATION

FAMILY HISTORY

OBSTETRIC HISTORY

Figure 7.1

The booking visit

Confirmation of the pregnancy

Dating the pregnancy

the date of the first day of the last menstrual period (LMP) ('menstrual dating').

Menstrual EDD

Naegele's rule states that the EDD is calculated by adding 7 days to the first day of the LMP and taking away 3 months. For example, if the LMP was 1 December 2003, the EDD by this rule would be 8 September 2004. This can be more easily determined by counting back 3 months. This rule assumes a 28-day menstrual cycle and ovulation on day 14 of this cycle, with conception predicted by the duration of her LMP. In reality the cycle length is variable with a range and most women have a period every 21–35 days. Furthermore, many women have ovulation outside the middle of the LMP.

Dating by ultrasound

Benefits of a dating scan

- Accurate dating in women with irregular menstrual cycles or poor recollection of LMP
- Reduced incidence of induction of labour for 'prolonged pregnancy' (post-dates) [1]
- Modern day potential for screening for major fetal abnormalities (see Chapter 17)
- Early detection of multiple pregnancies
- Reduction in unnecessary hospital visits for fetal surveillance in pregnancies

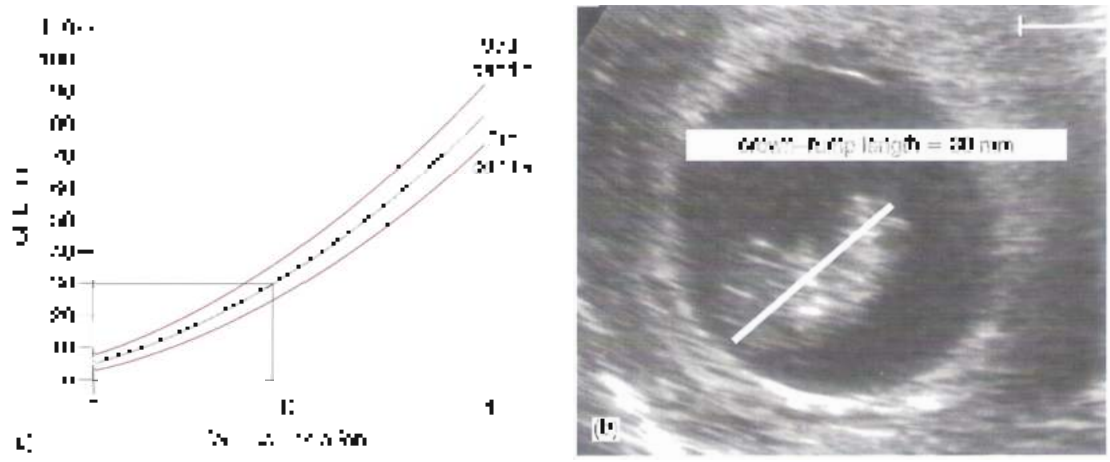


Fig 7.2 (a) Typical [illegible] (b) [illegible]

CASE HISTORY

[illegible]

The smoking history

[illegible]

[illegible]

[illegible] history

[illegible] [illegible] [illegible] [

The booking examination

Booking investigations

Rubella

Hepatitis B

Screening for fetal abnormalities

[illegible] antenatal care, offered to all [illegible]. Initial discussion of [illegible] occurs at the booking [illegible] couple. The tests [illegible] between 11 and 22 weeks' [illegible]:

- [illegible] (11–14 weeks) or [illegible] (15–18 weeks) for Down's [illegible]
- [illegible] (18–20 weeks) [illegible]
- [illegible] weeks) [illegible]

[illegible] in Chapter 9. However, it is important to [illegible] these screening [illegible] be [illegible] [illegible]

Follow-up visits

Pattern of follow-up visits

[illegible]

The content of follow up visits

- [illegible]
- [illegible]
- [illegible]

Antenatal complications dealt with in customized antenatal clinics

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

Key Points

- [illegible]
- [illegible]
- [illegible]
- [illegible]

Chapter 8

Antenatal imaging and assessment of fetal well-being

[illegible]

OVERVIEW

[illegible]

Diagnostic ultrasound

[illegible]

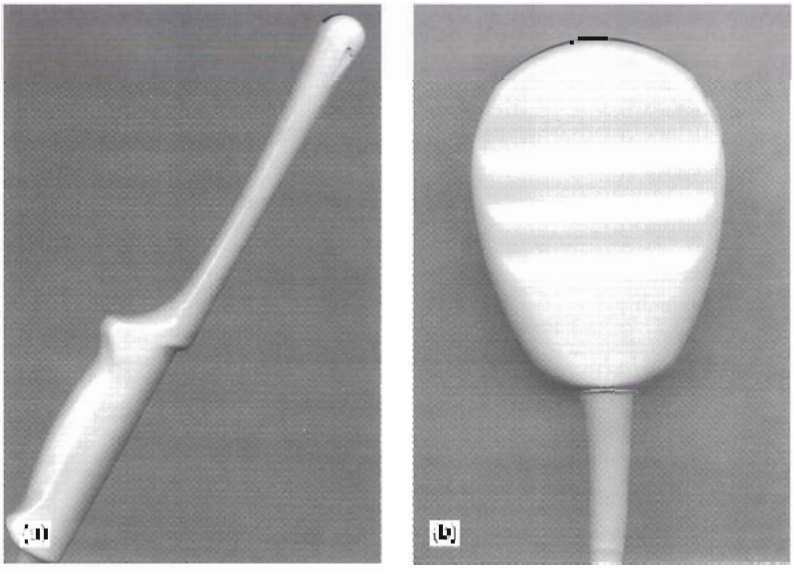


Figure 8.1 [illegible]

Clinical applications of ultrasound

Ultrasound in the first trimester

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Estimation of gestational age

[illegible]

Figure 8.2 [illegible]

[illegible]

Figure 8.3 [illegible]

[illegible]

[illegible]

[illegible] cardiac and [illegible] abnormalities [illegible]

[illegible] mid-pregnancy [illegible] improved opportunities to [illegible] increased risk of pre-eclampsia and [illegible] by measurement of the uterine artery [illegible] measurement of the cervical length increase the risk of premature delivery.

[illegible]

- [illegible] accurate estimation of gestational [illegible] assessed, through measurement of the BPD, HC and FL.
- [illegible] for the [illegible] surveyor [illegible] abnormalities or [illegible] for choroid plexus cysts. At the [illegible] time, the baby by the principal [illegible] scan. [illegible] unexpected [illegible] anomaly, [illegible] with the [illegible]
- [illegible] [illegible] gestational [illegible] [illegible] and to [illegible]
- [illegible] [illegible] [illegible] of the [illegible] [illegible] A [illegible] [illegible] [illegible]
- [illegible] the [illegible]
- [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
- [illegible] [illegible] [illegible]

Fetal anatomy

[illegible] [illegible] [illegible] [illegible] [illegible] [

Table 5.1 Fetal measurements and abnormalities that can be assessed by ultrasound between 18 and 24 weeks' gestation

Standard fetal measurements	Spine
Biparietal diameter	Heart and great vessels: four-chamber view, left and right outflow tracts, aortic root and arch, pulmonary artery and ductus
Head circumference	Lungs
Abdominal circumference	Abdomen
Femur length	Diaphragm
Fetal anatomical and biometric measurements	Liver and gallbladder
Face	Bowel, echogenic and dilated
Normal appearance, presence of cleft lip, nasal bone, nuchal translucency	Kidneys and ureters, hydronephrosis, pelvic dilatation
Orbits and eyes: presence, position and size	Bladder
Lens, choroid plexus	Genitalia
Nose and mouth: cleft lip and palate, micrognathia, macroglossia	Male or female
Neck: nuchal translucency, cystic hygroma, goitre	Limbs
Brain	Number of digits
Normal appearance of cerebral hemispheres, cerebellum, cisterna magna, choroid plexus, corpus callosum, midline falx	Normal appearance of limbs

...ormal, may be associated with fetal anomalies, chromosomal abnormalities or fetal growth restriction. Persistent isolated echogenic bowel is associated with cystic fibrosis, congenital infection and fetal growth restriction. Echogenic bowel is also a common finding in normal fetuses.

Placental location

...placenta is usually located in the upper part of the uterus. Placenta praevia is the term used when the placenta is implanted in the lower segment of the uterus, close to or overlying the internal cervical os. Placenta praevia is associated with an increased risk of antepartum haemorrhage, malpresentation, preterm labour and caesarean section. Transvaginal ultrasound is the most accurate method of assessing the relationship between the placenta and the internal cervical os. Transabdominal ultrasound is used to assess placental position at the mid-pregnancy anomaly scan. If the placenta is seen to be low-lying, a transvaginal scan is performed later in pregnancy to assess placental position in relation to the internal cervical os. Transvaginal ultrasound is safe and well tolerated by women. Transvaginal ultrasound is also used to assess placental appearances in suspected placental abruption, placenta accreta and vasa praevia.

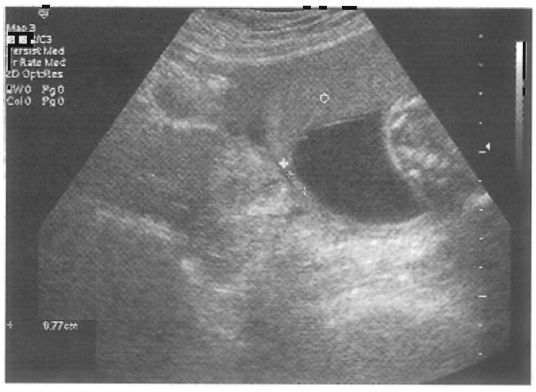


Fig. 8.4

[illegible]

[illegible]

[illegible]

the vasculature is dilated [illegible]

[illegible] the uterine arteries [illegible] the placental bed [illegible] This is particularly important in the uterine artery because it indicates the [illegible] which are downstream from the [illegible] and compliant and, therefore, the trophoblast invasion of these arteries is [illegible] inadequate.

The proposed pathogenic model of pre-eclampsia is one of inadequate trophoblastic invasion of the spiral arteries by the trophoblast, with a resultant increase in uteroplacental vascular resistance; this is reflected in the uterine artery waveforms obtained from the maternal uterine arteries. Doppler ultrasound [illegible] abnormal uterine artery waveforms and the identification of uteroplacental insufficiency (Fig. 8.7), [illegible] have provided evidence of an association between high-resistance uterine artery waveforms and [illegible] pre-eclampsia, [illegible] intrauterine growth restriction [illegible] [illegible] [illegible]

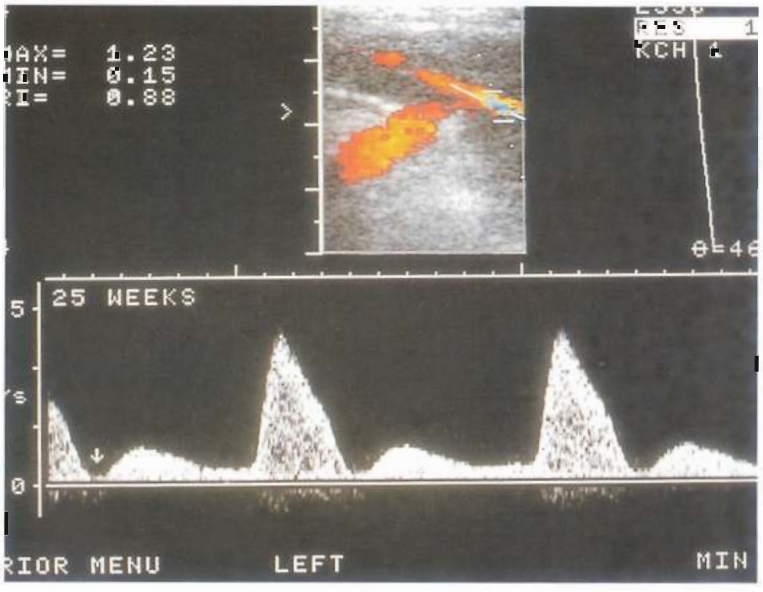
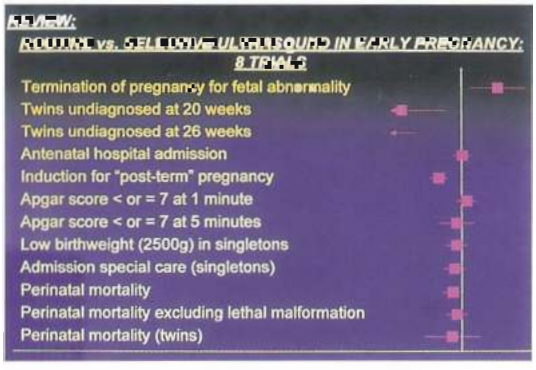


Figure 8.7

Measurement of cervical length

The importance of the routine scan



Ultrasound in the third trimester

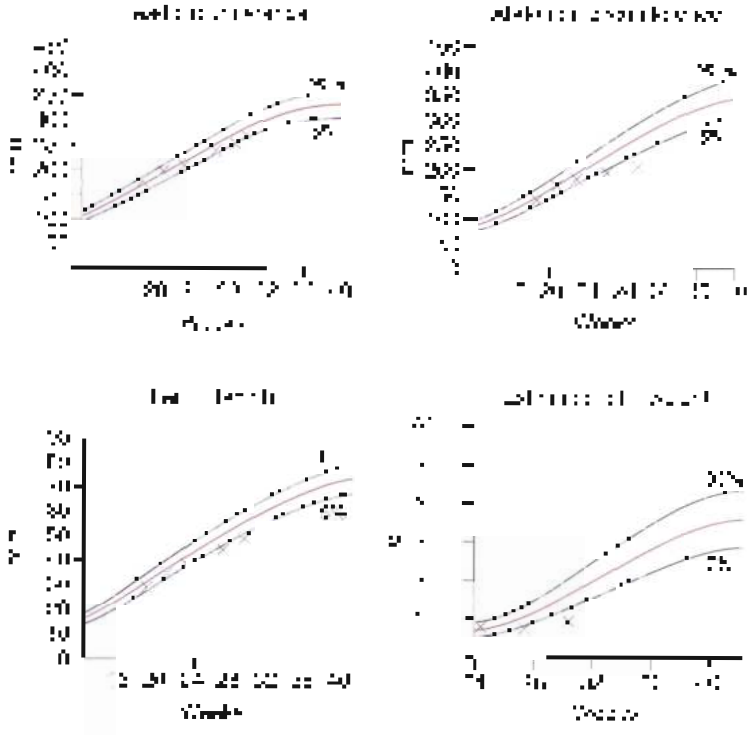


Figure 8.9

Fetal morphology

Amniotic fluid volume

The cardiotocograph

Fetal cardiac physiology

Fetal heart rate variability

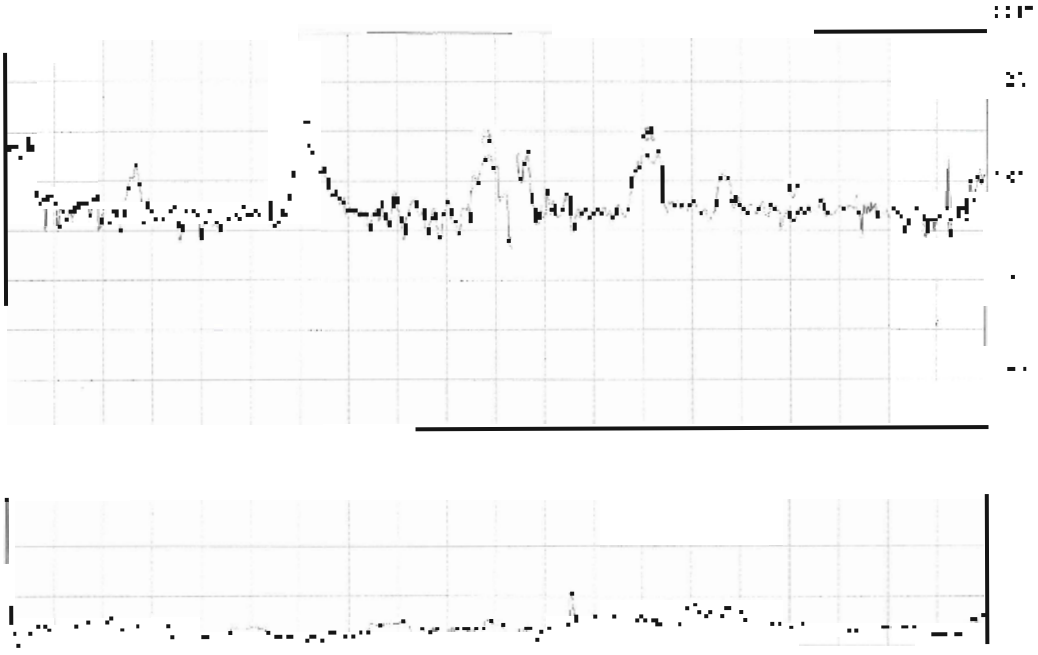
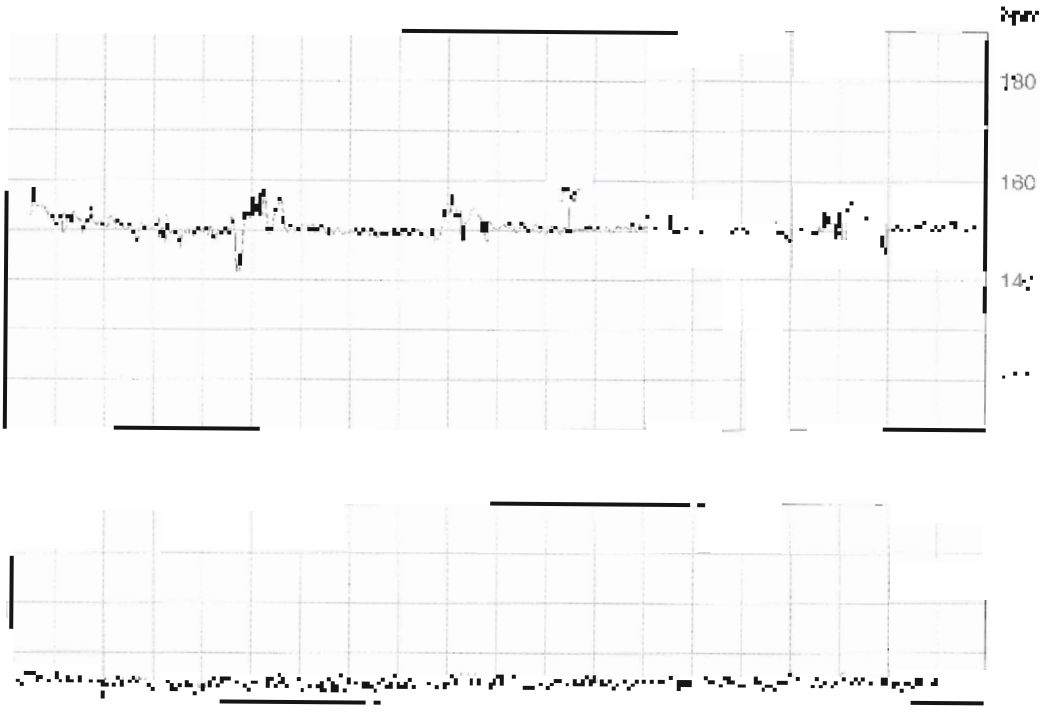


Figure 8.10



Fetal heart rate accelerations

Fetal heart rate decelerations

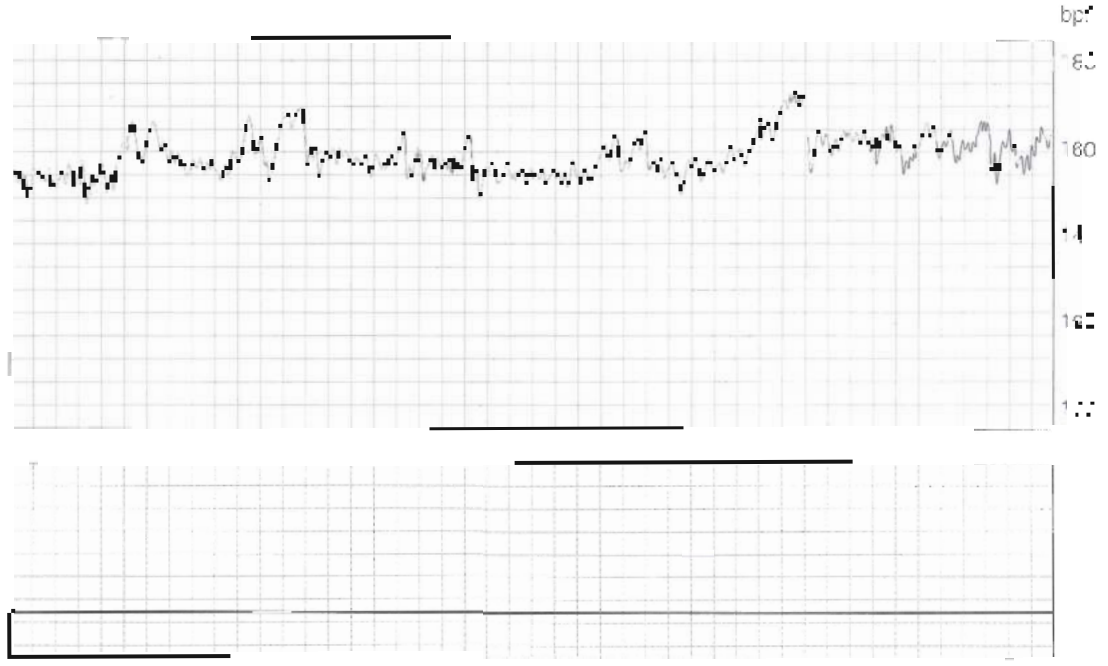


Figure [illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]

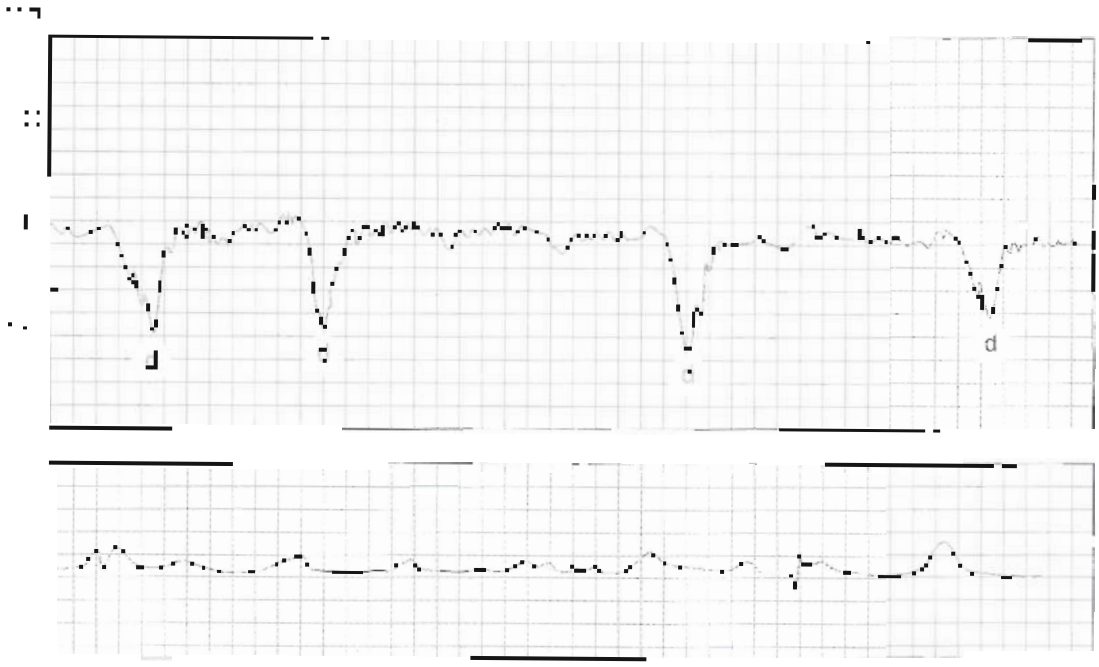


Figure 8.12

Stress and non-stress cardiotocography

The computerized cardiotocograph

[illegible]

[illegible]

[illegible] biophysical profile [illegible] fetal hypoxia [illegible] fetal surveillance [illegible] fetal hypoxia [illegible] fetal surveillance [illegible] fetal hypoxia [illegible] fetal surveillance

[illegible]

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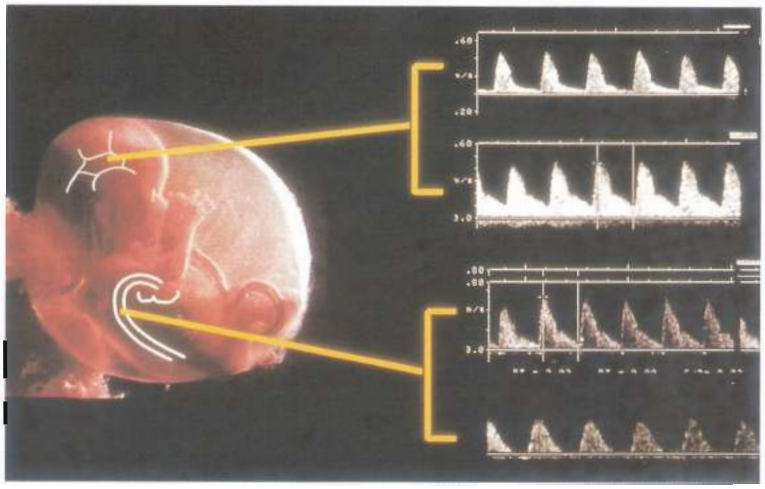


Figure 8.15

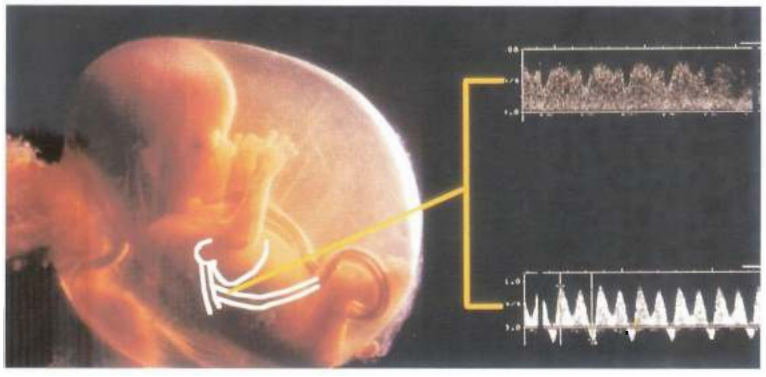


Figure 8.16

New developments

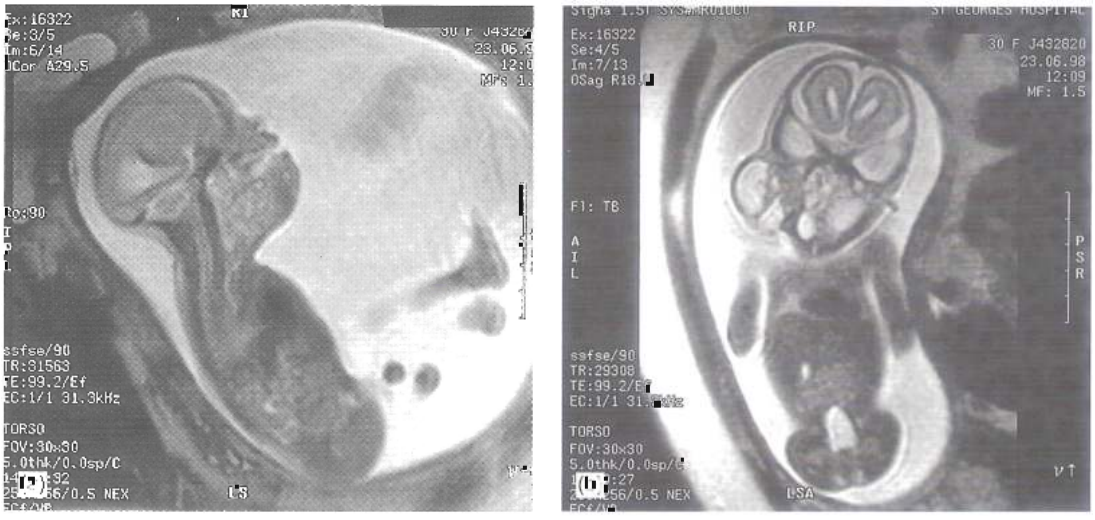


Figure 8.17 [illegible]

Figure 8.18 [illegible]

[illegible]

[illegible]

Key Points

- [illegible]
- [illegible]

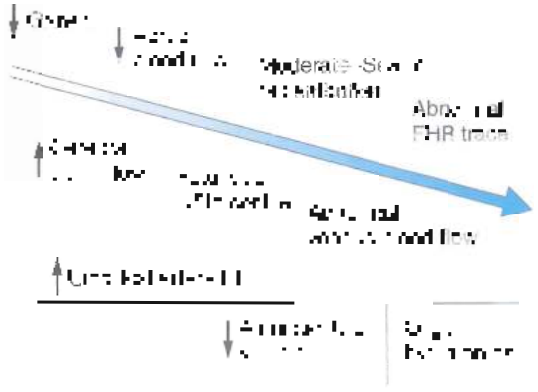


Figure 8.19

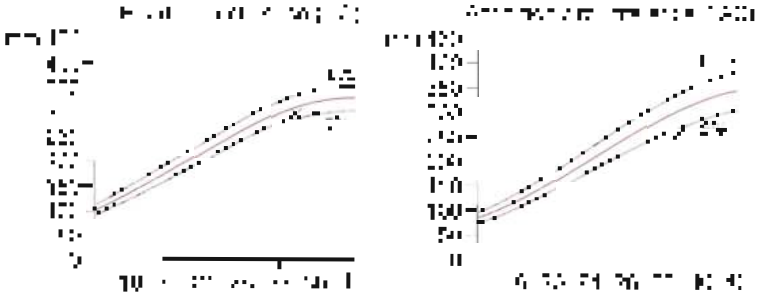


Figure 8.20

CASE HISTORY

What additional features/measures on ultrasound assessment could give an indication of fetal well-being?

Chapter 8

Prenatal diagnosis

[illegible]		[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		

OVERVIEW

The clinical presentation of genetic disorders is highly variable. Some disorders are apparent at birth, while others may not present until adulthood. Some disorders are inherited, while others occur as a result of new mutations. Some disorders affect only a single organ system, while others affect many organs. Some disorders are caused by a single gene defect, while others are caused by multiple genetic factors. Some disorders are caused by chromosomal abnormalities, while others are caused by environmental factors. Some disorders are treatable, while others are not. Some disorders are preventable, while others are not. Some disorders are common, while others are rare. Some disorders are severe, while others are mild. Some disorders are progressive, while others are stable. Some disorders are fatal, while others are not. Some disorders are hereditary, while others are not. Some disorders are genetic, while others are not. Some disorders are congenital, while others are not. Some disorders are acquired, while others are not. Some disorders are inherited, while others are not. Some disorders are genetic, while others are not. Some disorders are congenital, while others are not. Some disorders are acquired, while others are not.

Table 8.1 [illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]

continued

Table 8.1 [illegible]

[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

Prenatal screening and diagnostic tests

[illegible] diagnostic tests are relatively high prevalence and [illegible] are available prenatal diagnostic tests. Diagnostic tests, on the other hand, are [illegible] They are usually [illegible] and carry a risk to the fetus. Therefore the [illegible] should be [illegible]

Table 8.2 [illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

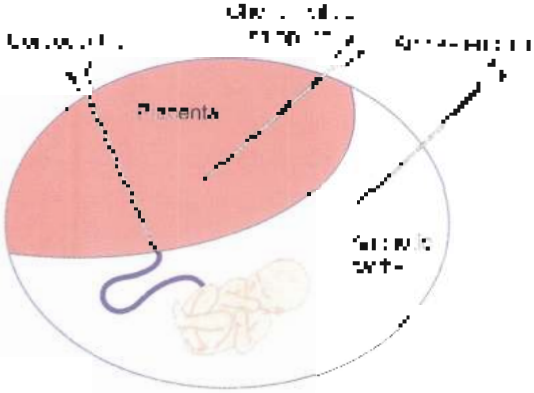
Invasive diagnostic tests

[illegible] Table 8.3. [illegible] [illegible] [illegible]

Table 8.4 [illegible]

	[illegible]	[illegible]	Cordocentesis
[illegible]	[illegible]	[illegible]	20–40
[illegible]	[illegible]	[illegible]	Transabdominal
[illegible]	[illegible]	[illegible]	Fetal white blood cells
[illegible]			
[illegible]	[illegible]	[illegible]	Not good
[illegible]	[illegible]	[illegible]	[illegible] Hours
[illegible]	[illegible]	[illegible]	None

[illegible]



[illegible]

[illegible]

[illegible]

Diagnosis of structural abnormalities

Neural tube defects

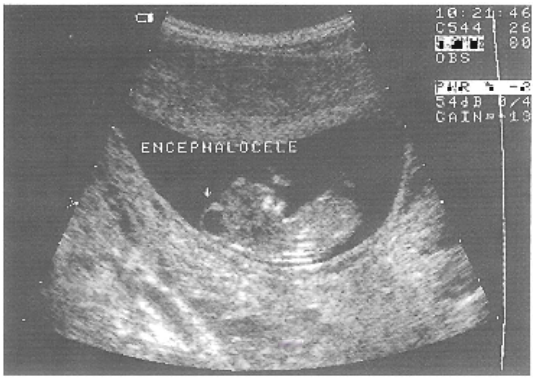


Figure 9.2

Congenital heart defects

Figure 9.3

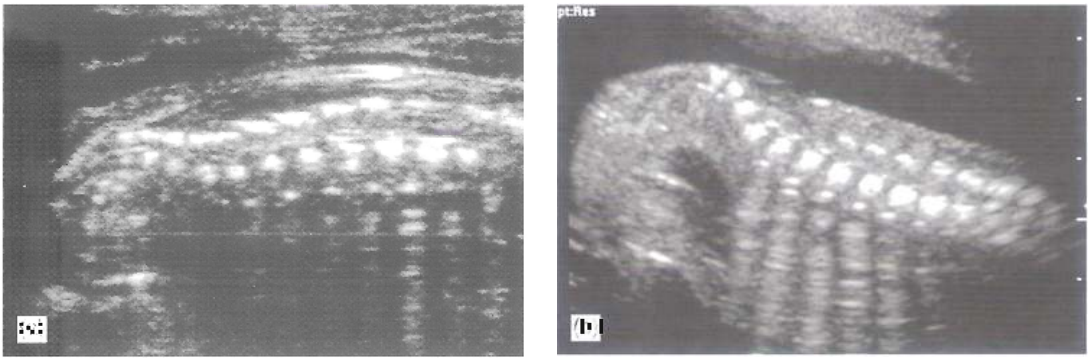


Figure 9.4

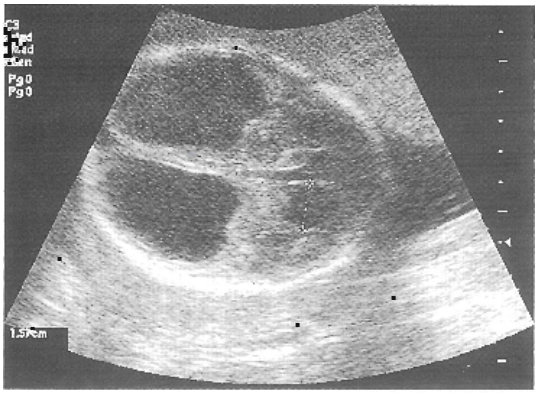


Figure 9.5 [illegible]

Table 9.4 [illegible]

[illegible]	[illegible]
[illegible]	[illegible]
	[illegible]
	[illegible]
[illegible]	[illegible]
	[illegible]
	[illegible]
[illegible]	[illegible]
	[illegible]
	[illegible]
	[illegible]
	[illegible]
[illegible]	[illegible]
	[illegible]

[illegible]

[illegible] [illegible] [illegible] [

[illegible]

[illegible]

[illegible]

Renal tract abnormalities

[illegible]

[illegible]

[illegible]

Other structural abnormalities

[illegible]

[illegible]

[illegible]

[illegible]	[illegible]
Hurler's syndrome	Mucopolysaccharidosis [illegible]
Progeria	[illegible]
Rubinstein–Taybi syndrome	[illegible]

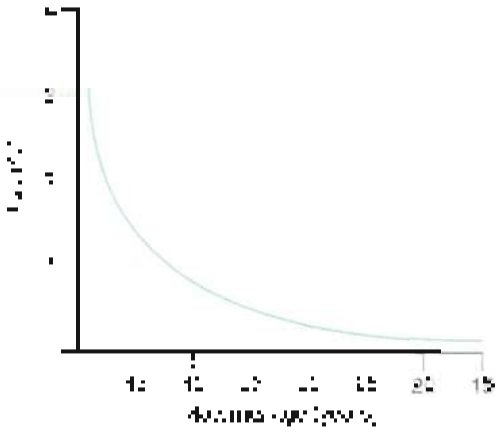


Figure 9.7 [illegible]

Fragile X

Screening tests for Down's syndrome

Maternal age and risk

[illegible]

[illegible]

[illegible]

Genetic disorders

Cystic fibrosis

Haemoglobinopathies

Congenital viral and parasitic infections

Screening for congenital viral and parasitic infections

Table 9.1 [illegible]

	Rubella	Cytomegalovirus	Toxoplasmosis	Parvovirus
[illegible]	[illegible]	[illegible]	Children	Infected children
[illegible]	[illegible]	[illegible]	Hydrocephaly	Aplastic anaemia
[illegible]	Growth restriction	Cerebral calcification	Cerebral calcification	Hydrops
	Hydrocephaly	Growth restriction	Hydrocephaly	
	Mental retardation	Hydrocephaly	Growth restriction	
			Hydrocephaly	

Prenatal diagnosis of congenital viral and parasitic infections

[illegible]

New developments

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Three-dimensional ultrasound

[illegible]

Fetal magnetic resonance imaging

[illegible]

Key Points

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

CASE HISTORY

[illegible]

What issues would you wish to discuss with her?

Details of the accident

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Your investigations

- [illegible]

- [illegible]
- [illegible]
- [illegible]

After the accident (continued)

- [illegible]
- [illegible]

Antenatal care

- [illegible]
- [illegible]
- [illegible]
- [illegible]

Chapter 10

Second trimester miscarriage

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

OVERVIEW

[illegible]

Definition

[illegible]

Classification (Table 10.1)

[illegible]

Prevalence

[illegible]

Aetiology

[illegible]

Table 10.1 Clinical presentation and investigations

	Symptoms	Signs
[illegible]	Bleeding Contractions Abnormal vaginal discharge	Uterine overstretching Uterine tenderness Offensive vaginal discharge
[illegible]	[illegible]	[illegible] Fever Uterine tenderness Offensive vaginal discharge
[illegible]	[illegible]	Pallor Tachycardia Hypotension Signs of shock
[illegible]	[illegible]	[illegible]

[illegible] [illegible] [illegible] [

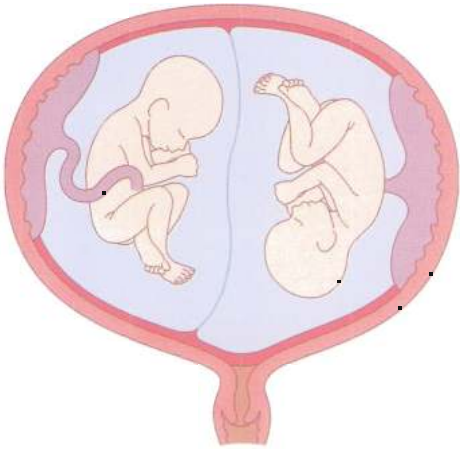


Figure 10.2

Figure 10.5

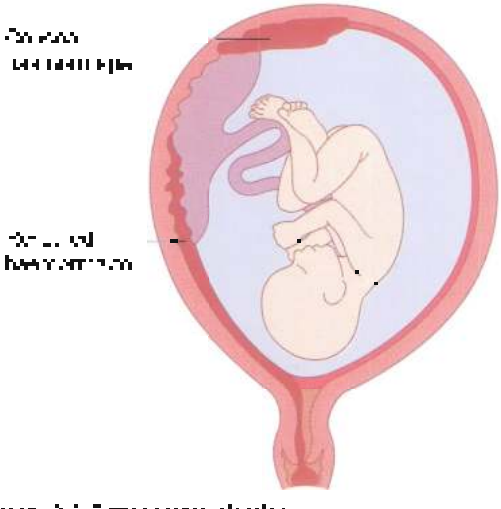


Figure 10.3

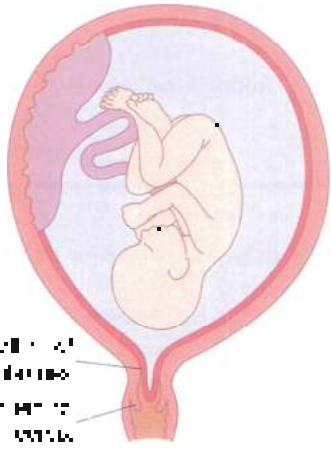


Figure 10.6

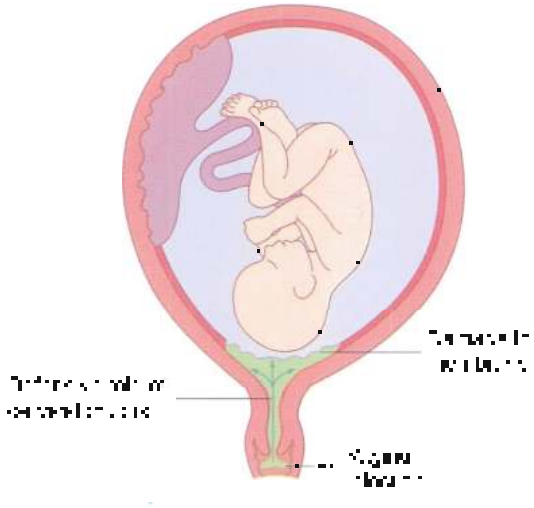


Figure 10.4

Clinical features

History

Examination

Investigations

- [illegible]
- [illegible]
- [illegible]
- [illegible]

- [illegible]
- [illegible]

Differential diagnosis

- [illegible]
- [illegible]
- [illegible]
- [illegible]

Treatment

Support

Pre-viable membrane rupture

Antibiotics

Tocolytics

Emergency cervical cerclage

Augment contractions

Delivery

Figure 10.7

Later implications

New developments

Bacterial infection

Transvaginal ultrasound measurement of cervical length

Fibronectin

Key Points

BASIC HISTORY

[illegible]

What is the likely diagnosis?

[illegible]

What are the key points in the examination and investigation of Mrs M?

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Further management

[illegible]

Termination of pregnancy

[illegible]

Medical treatment

[illegible]

Surgical treatment

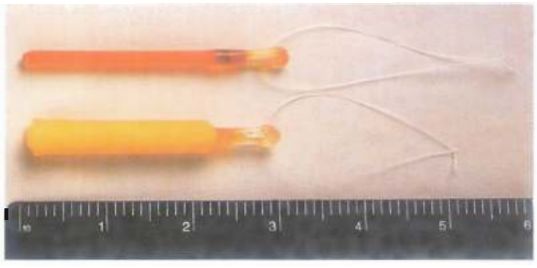


Figure 10.12

Chapter 11

Antenatal obstetric complications

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

OVERVIEW

[illegible]

'Minor' problems of pregnancy

Backache

[illegible]

Symphysis pubis dysfunction

[illegible]

Constipation

[illegible]

Hyperemesis gravidarum

Heartburn

Varicose veins and piles

Skilful conditions should be treated surgically if symptoms cannot be improved with local anaesthetic/anti-irritant creams and a high-fibre diet. Acute conditions including symptoms of tenesmus, rectal fullness, discomfort in the anal and back passage disappearance of any obvious rectal carcinoma: a rectal examination should be carried out if these symptoms are present.

Varicose veins in the vagina may be symptomatically relieved by pressure stockings, avoidance of prolonged standing, and local anaesthetic ointments. Varicosities in the perineum may be unsightly and if traumatized by tight clothing or sexual intercourse may bleed profusely. Pressure applied by the fingers or a sanitary towel will usually control the bleeding. Varicosities in the vulva may be relieved by elevation of the legs and pressure applied by a tight pad. Varicosities may persist or recur after delivery.

Carpal tunnel syndrome

Oedema

Other common 'minor' disorders

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Key Points

[illegible]

Problems due to abnormalities of the pelvic organs

Fibroids (leiomyomata)

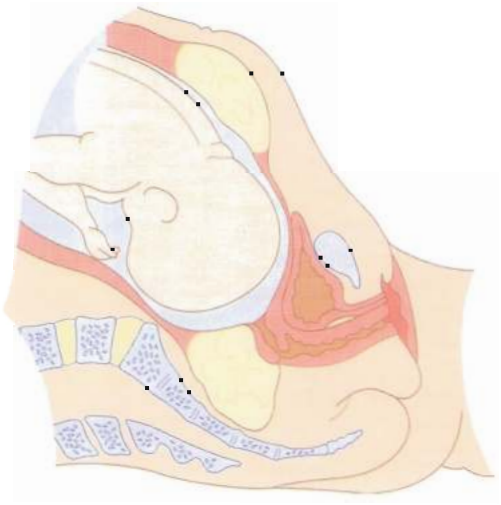


Figure 11.1 [illegible]

Retroversion of the uterus

Congenital uterine anomalies

Ovarian cysts in pregnancy

Cervical cancer

Urinary tract infection

[illegible] UTI [illegible] pregnancy [illegible] [illegible] [illegible]

Table 11.1 Continued

		Key investigation
Renal causes	Acute renal failure, chronic renal impairment, proteinuria	Urine microscopy: haematuria, precipitated crystals, renal tubular acid, limited IVU
Urological	Acute urinary retention, hydronephrosis	UTI, ultrasound upper abdomen and renal tract, abdominal ultrasound, may require CT/MRI
Hypertension	Chronic vascular disease, gestational hypertension, pre-eclampsia	Retinopathy, renal cell contrast abdominal ultrasound
Thromboembolism	Deep vein thrombosis, pulmonary embolism	Ultrasound scan, CT pulmonary angiography
Liver disease	Acute fatty liver of pregnancy, HELLP syndrome, hepatitis, cholestasis of pregnancy	LFTs, amylase, U&Es, FBC, clotting, liver ultrasound, acute HELLP screen, clotting
Uterine/fetoplacental		
Uterine fibroid	Acute red degeneration, fibroid obstructing labour	CTG, ultrasound scan
Placental abruption	Antepartum haemorrhage, pain, fetal distress, coagulopathy, fetal death	Ultrasound scan, clotting screen, cardiotocography
Placenta praevia	Antepartum haemorrhage, malpresentation	Ultrasound scan
Ovarian cyst torsion	Acute pain, nausea, vomiting, peritonism	Ultrasound scan, laparoscopy
Pyelonephritis	Loin pain, fever, rigors, vomiting, dysuria, frequency, urgency	MSU, blood cultures, FBC, U&Es, CRP
Ureteric colic	Loin pain, haematuria	Urine microscopy, ultrasound scan, IVU
Urinary tract infection	Dysuria, frequency, urgency, suprapubic pain, haematuria	MSU, urine microscopy, blood culture
Pharmacological/toxicological	Acute renal failure, hepatic dysfunction, coagulopathy	Urine toxicology, liver function tests, clotting screen
Psychosocial/social	Substance misuse, domestic violence, psychiatric illness	Urine toxicology, liaison with social services, psychiatric assessment
Endocrinological	Diabetes insipidus, hyperthyroidism, hypothyroidism	Serum osmolality, thyroid function tests
Infection	Acute abdominal infection, septicaemia	Ultrasound scan, blood cultures, microscopy

Abbreviations: CT, computed tomography; CTG, cardiotocography; FBC, full blood count; HELLP, haemolysis, elevated liver enzymes, low platelets; IVU, intravenous urography; LFTs, liver function tests; MRI, magnetic resonance imaging; MSU, midstream urine; U&Es, urea and electrolytes; UTI, urinary tract infection.

The differential diagnosis of abdominal pain in pregnancy is extensive. Pain may be caused by pathology in the abdominal wall, peritoneum, gastrointestinal tract, urinary tract, reproductive system, musculoskeletal system or vascular system. Pain may also be referred from the chest. Some causes of pain are specific to pregnancy, while others are more common in the non-pregnant population. Pain may be acute or chronic, and may be associated with other symptoms and signs.

Venous thromboembolism

Risk factors for thromboembolic disease

Thrombophilia

Deep vein thrombosis

Initial management of a non-moribund woman with suspected pulmonary embolism

Always take a careful history

- Examine pulse, blood pressure, temperature, jugular venous pressure and auscultate lung fields
- Investigate arterial blood gases, chest X-ray, ECG, serum creatine kinase, liver enzymes, lactate dehydrogenase and bilirubin
- Consider need to exclude deep vein thrombosis (see Table 1) before starting anticoagulant therapy for PE

Major pulmonary embolism is associated

- Hypoxia
- Hypotension, tachycardia, tachypnoea, cyanosis, syncope, shock, pulseless electrical activity, cardiac arrest
- Right ventricular dysfunction, pulmonary hypertension, right heart failure
- Pulmonary infarction, pleural effusion, haemoptysis, pleural rub

Pulmonary embolus

Anticoagulants

Prophylaxis and treatment issues

Table 11.2 Risk assessment [illegible]

[illegible]	[illegible]	[illegible]
[illegible]	Age ≥ 35 years Obesity (BMI ≥ 30 kg/m²) Parity ≥ 3 [illegible] [illegible] Varicose veins Family history of [illegible]	Obesity, [illegible] more moderate risk factors Emergency surgery, e.g. Caesarean section, hysterectomy Age ≥ 75 years, [illegible] of deep veins of the pelvis or leg, pulmonary embolism (previous or DVT) Dehydration Ongoing [illegible]
Thrombophilia Active medical problem, e.g. [illegible]	Inherited or acquired thrombophilia [illegible]	Pregnancy, [illegible]

Continued opposite ▸ DVT, deep vein thrombosis; BMI, body mass index; [illegible]

[illegible] advice [illegible] risk factors [illegible] [illegible] [illegible]

Examination

- [illegible]
- [illegible]
- [illegible]
- [illegible]

Investigations

- [illegible]
- [illegible]

Placental abruption

[illegible]

Figure 11.2 [illegible]

Placenta praevia

[illegible]

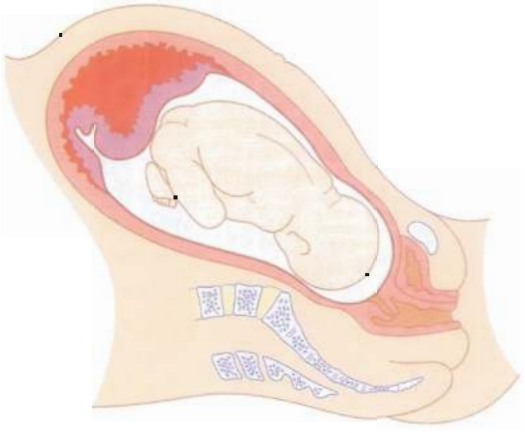


Figure 11.3 [illegible]

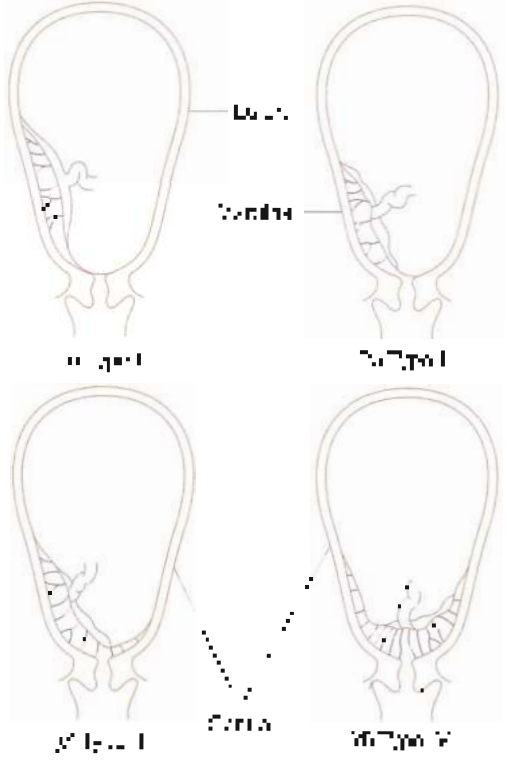


Figure 11.4 [illegible]

Risk factors for placenta praevia

- [illegible]
- [illegible]
- [illegible]
- [illegible]

Key Points

- [illegible]
- [illegible]

Further management

[illegible]

Substance abuse in pregnancy

Drug dependence

[illegible]

Problems frequently encountered amongst drug addicts

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

Alcohol

Smoking and pregnancy

Oligohydramnios and polyhydramnios

Oligohydramnios

Possible causes of oligohydramnios and anhydramnios

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

[illegible]

Polyhydramnios

[illegible]

[illegible]

- [illegible]
- [illegible]

[illegible]

- [illegible]
- [illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

Breech presentation, oblique and transverse lie at term

[illegible]

Predisposing factors for abnormal lie or breech presentation

- Fibroids
- Congenital abnormalities (e.g. uterine septum)
- Previous surgery
- Oligohydramnios
- Polyhydramnios
- Multiple gestation
- Abnormality of amniotic membranes
- Placenta praevia

Abnormal presentation or unstable lie at term

Assessment of a woman with a breech baby

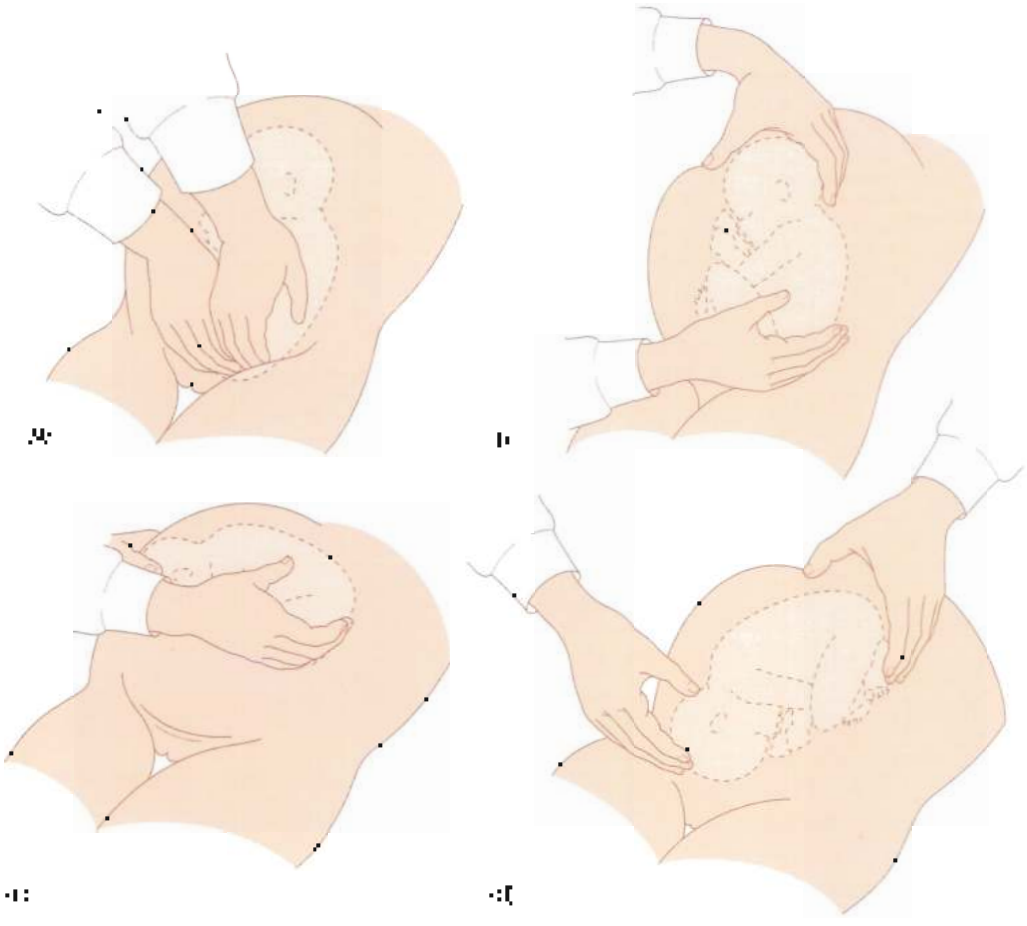
External cephalic version

Factors that strengthen recommendations for a Caesarean section

Factors that increase the likelihood of a successful vaginal breech delivery

Contraindications to ECV

Risks of ECV



Key Points

- [illegible]
- [illegible]
- [illegible]

Post-term pregnancy

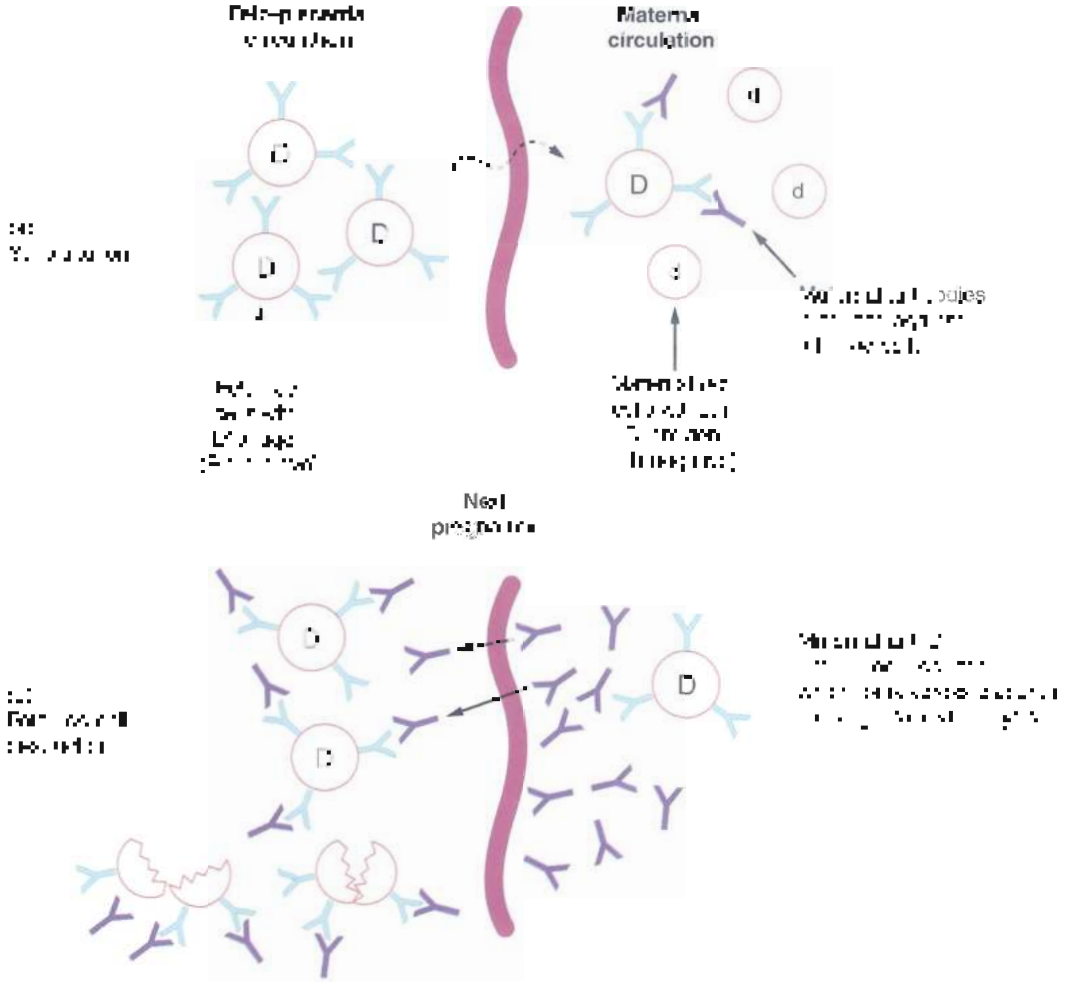
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Rhesus iso-immunization

[illegible]

[illegible]

[illegible]



Antibodies associated with haemolytic disease

- anti
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

The genetics of rhesus disease

- [illegible]
- [illegible]
- [illegible]

Prevalence of rhesus disease

[illegible]

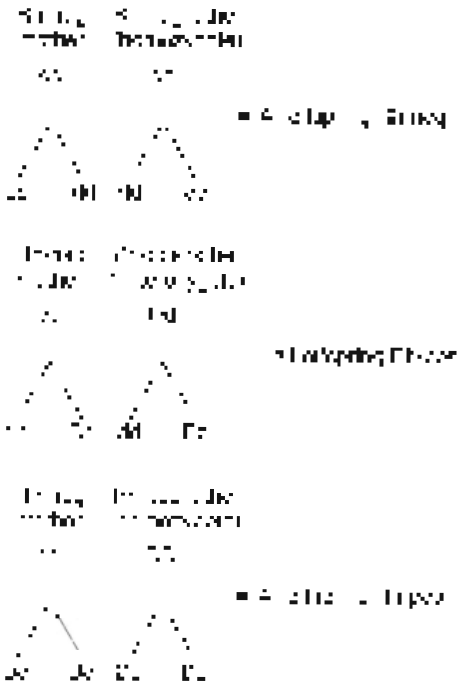


Figure 11.8 [illegible]

[illegible] Rhesus D immunoglobulin is given to the mother at 28 and 34 weeks' gestation and after delivery if the baby is rhesus D positive. Kleihauer test is used to estimate the amount of fetal blood in the maternal circulation.

Preventing rhesus iso-immunization

[illegible] Rhesus D immunoglobulin is given to the mother at 28 and 34 weeks' gestation and after delivery if the baby is rhesus D positive. Kleihauer test is used to estimate the amount of fetal blood in the maternal circulation.

- [illegible]

The management of rhesus disease

[illegible]

- The second D [illegible]
- The second D [illegible]
- The second D [illegible]
- The second D [illegible]

[illegible]

[illegible]

[

Key Points

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

CASE HISTORY

[illegible]

What is your most likely diagnosis?

[illegible]

How would you manage Maria?

[illegible]

- [illegible]
- [illegible]
- [illegible]

[illegible]

Additional reading

[illegible]

Chapter 12

Twins and higher multiple gestations

[illegible] 1
[illegible] 2
[illegible] 3
[illegible] 4
[illegible] 5
[illegible] 6
[illegible] 7
[illegible] 8
[illegible] 9
[illegible] 10
[illegible] 11
[illegible] 12
[illegible] 13
[illegible] 14

OVERVIEW

[illegible]

Definitions

[illegible]

Prevalence

[illegible]

Classification

Key Points

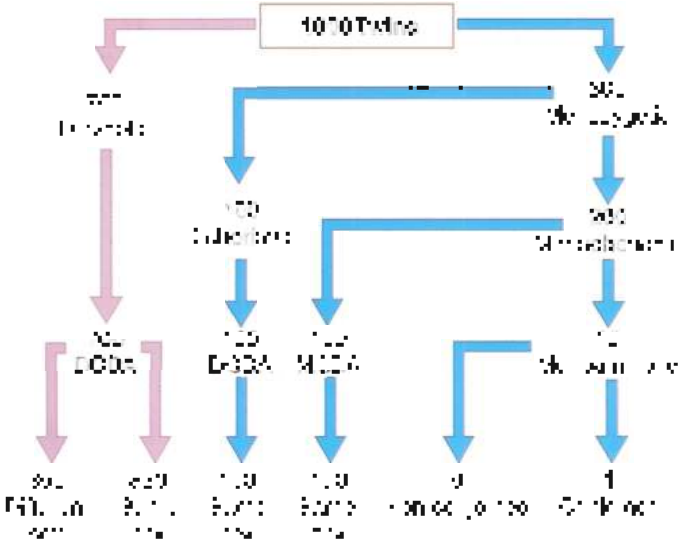


Figure 12.1

Aetiology

Other physiology

Maternal

Fetal

Monochorionic placentas have the unique ability to develop vascular connections between the two fetal circulations. These anastomoses carry the potential for complications discussed in the next section.

Complications relevant to twin pregnancy

Miscarriage and severe preterm delivery

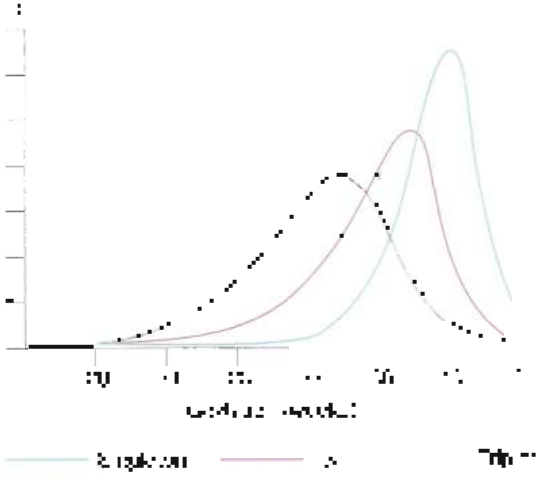


Figure 12.2

Table 9.1 [illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]
[illegible]		[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

Perinatal mortality in twins

General

[illegible]

[illegible]

[illegible]

Death of one fetus in a twin pregnancy

General

[illegible]

[illegible]

[illegible]

[illegible]

Intrauterine growth restriction

General

[illegible]

[illegible]

Fetal abnormalities

Chromosomal defects and twinning

Complications unique to monochorionic twinning

Complications unique to monoamniotic twinning

Differential diagnosis

Antenatal management

Determination of chorionicity

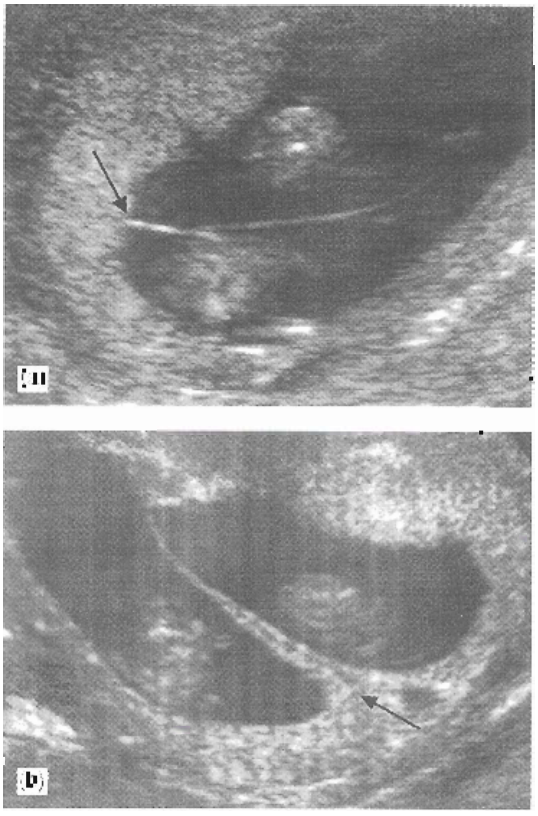


Figure 8.1 [illegible]

Screening for fetal abnormalities

Monitoring fetal growth and well-being

Threatened preterm labour

Multiple pregnancy support groups

Intrapartum management

Preparation

Postpartum haemorrhage

Higher multiples

CASE HISTORY

Was Miss O's gynaecological treatment successful?

What obstetric risks does Miss O face?

Might embryo reduction be considered?

Is there any way of predicting her risk of severe preterm delivery?

How often should Miss O be seen at the hospital?

What other antenatal measures should be taken?

Key Points

- [illegible]
- [illegible]
- [illegible]
- [illegible]

Chapter 13

Disorders of placentation

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

OVERVIEW

[illegible]

The placenta

[illegible]

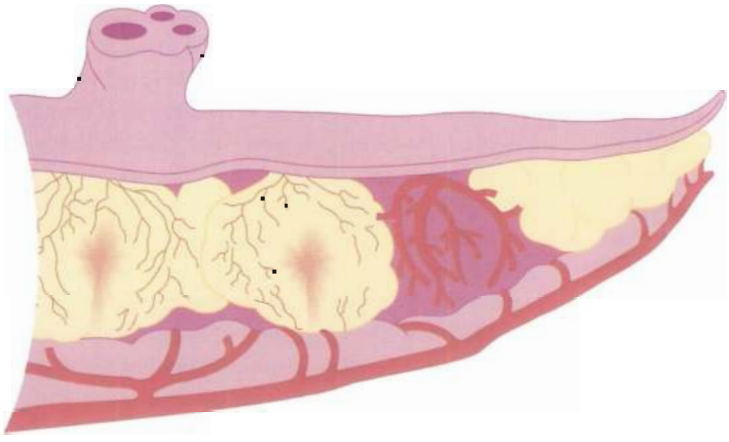


Figure 13.1

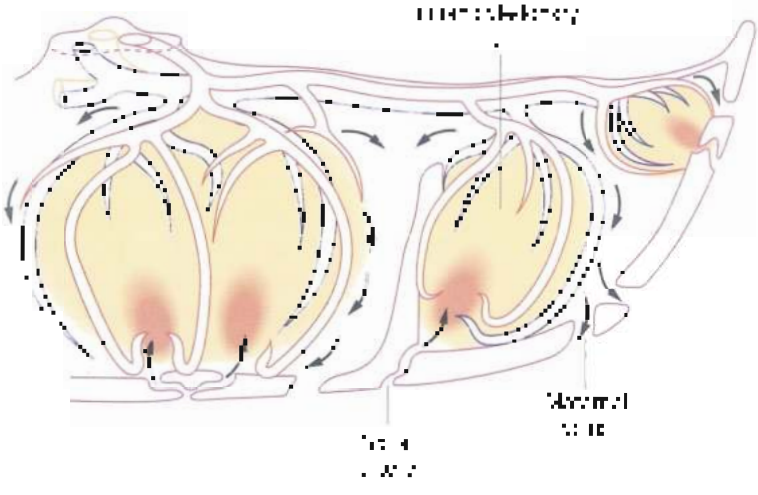


Figure 13.2

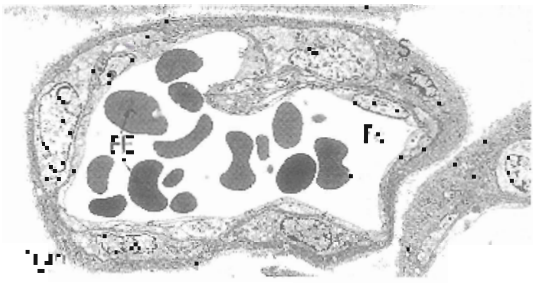
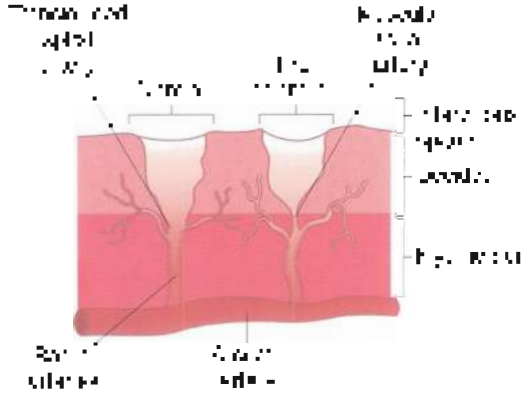


Figure 13.3

Normal placentation



Abnormal placentation

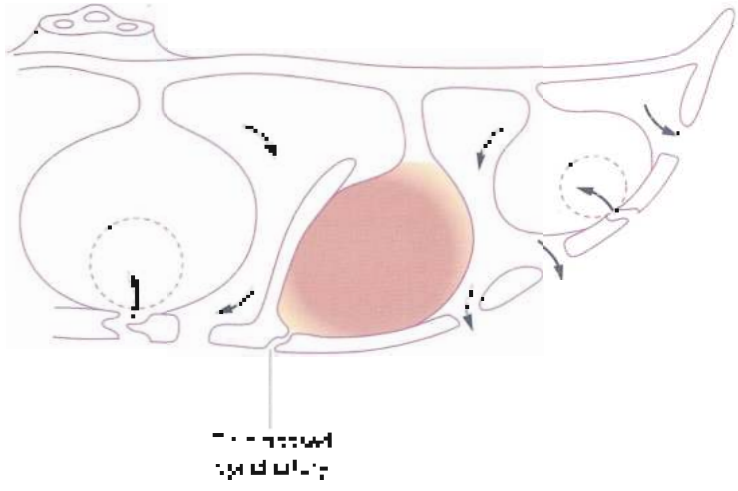


Figure 13.5

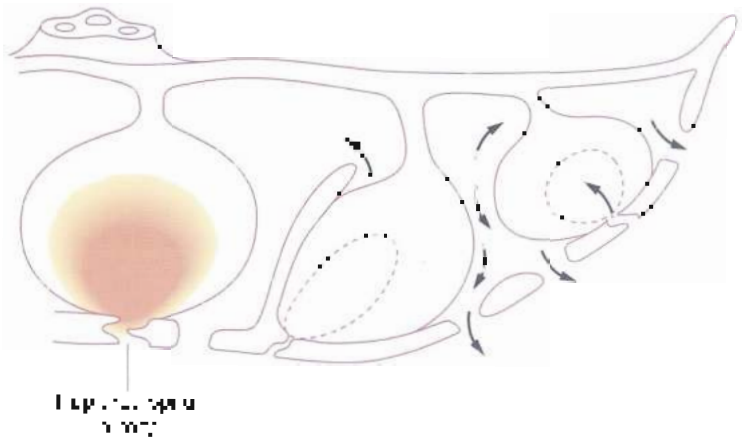


Figure 13.6

Pre-eclampsia

Definition

Incidence

Epidemiology

S Symptoms of pre-eclampsia

Signs of pre-eclampsia

Risk factors for pre-eclampsia

- [illegible]
- [illegible]
- [illegible]

Figure 13.2 [illegible]

Aetiology

Pathophysiology

Organ-specific changes associated with pre-eclampsia

- Decreased uteroplacental perfusion
- Abnormal trophoblast invasion
- Placental infarction, hypoxia, oxidative stress

- Glomerular endotheliosis
- Proteinuria
- Oliguria
- Renal failure

- Hepatic periportal fibrin deposition
- Periportal haemorrhage
- Hepatic infarction

- Cerebral oedema
- Cerebral haemorrhage

- Retinal oedema
- Retinal detachment

- Pulmonary oedema
- Adult respiratory distress syndrome

- Placental abruption
- Disseminated intravascular coagulation

- Haemolysis
- Elevated liver enzymes
- Low platelet count

- Fetal growth restriction
- Oligohydramnios
- Fetal death

- Eclampsia
- Cerebral haemorrhage

Screening tests

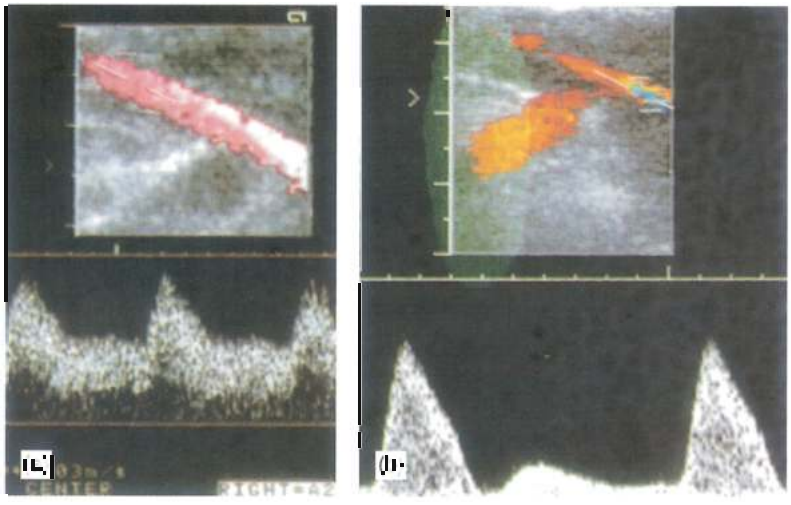


Figure 13.3 [illegible]

Management and treatment

[illegible]

The management of suspected pre-eclampsia

- early recognition of the symptoms and signs
- [illegible]

- [illegible]
- [illegible]
- [illegible]

[illegible]

Investigations for pre-eclampsia

[illegible]

- [illegible]
- [illegible]
- [illegible]

continued

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
  - [illegible]
  - [illegible]

[illegible]

[illegible] adult respiratory distress syndrome and [illegible]. The importance of involving clinicians from other specialties (intensive care, haematology) [illegible]

Additional points in management

[illegible] delivery of the fetus is often [illegible] necessitates [illegible] prior to delivery [illegible] [illegible] [illegible]

Should she be commenced on medications?

If delivery is the main treatment for pre-eclampsia, when should this be carried out?

Intrauterine growth restriction

Significance

Definitions and incidence

Aetiology

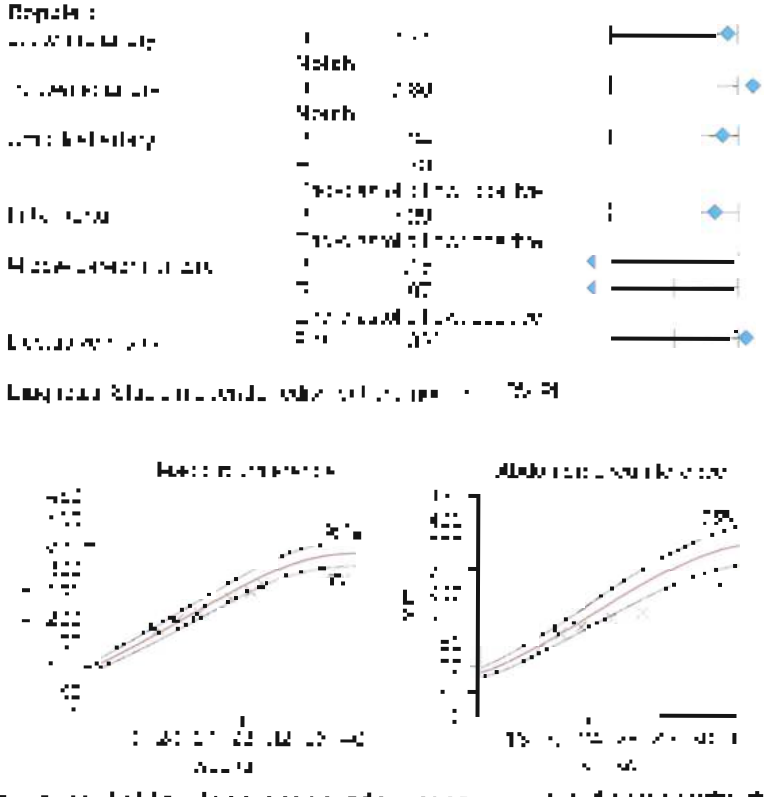


Figure [illegible] [illegible]

Pathophysiology

Investigation

Management

Prognosis

Placental abruption

Definition

Incidence

Aetiology

Risk factors for placental abruption

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Clinical presentation

Clinical features of placental abruption

- [illegible]
- [illegible]
- [illegible]
- [illegible]

Diagnosis

Effects on the mother

Effects on the fetus

Management

Key Points

Additional reading

Chapter 14

Preterm labour

[illegible]	71	[illegible]	72
[illegible]	71	[illegible]	
[illegible]	71	[illegible]	72
[illegible]	72	[illegible]	76
[illegible]	73	[illegible]	
[illegible]	73	[illegible]	1

OVERVIEW

[illegible] preterm labour and prevention of preterm birth [illegible] and management of preterm labour [illegible] and prevention of preterm birth [illegible] and management of preterm labour [illegible] and prevention of preterm birth [illegible] and management of preterm labour [illegible]

Prevalence

Classification

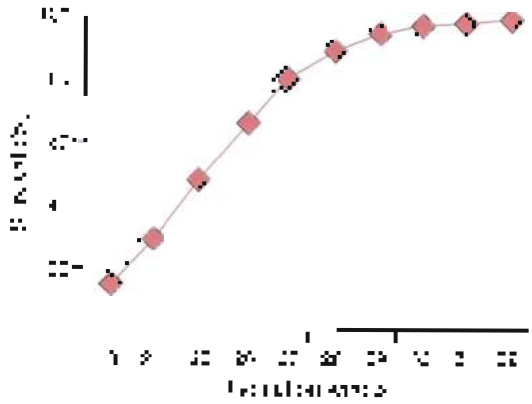
Aetiology

Infection

Over-distension

Vascular

Intercurrent illness



Cervical weakness

Iliopathic

Other physiology

Risk factors

Risk factors for preterm labour/PPROM

Clinical features – preterm labour

History

Examination

Differential diagnosis

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Investigations

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

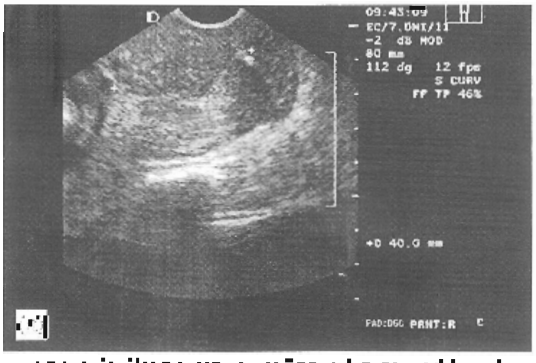
Clinical features – preterm prelabour rupture of the membranes

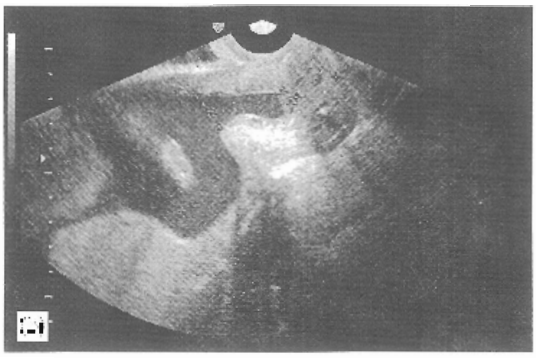
History

[illegible]

Examination

[illegible]





[illegible]

Differential diagnosis

- [illegible]
- [illegible]
- [illegible]

Investigations

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Treatment

Maternal steroids

Tocolytics

Antibiotics

Fetal assessment

Mode of delivery

Type of Caesarean section

Analgesia

Communication

In-utero transfer

Management of high-risk asymptomatic women

Early dating scan

Bacterial vaginosis

Asymptomatic bacteriuria

Group B streptococcal genital colonization

Cervical ultrasound

Fetal fibronectin

Tocolysis

Lifestyle modification

Key Points

New developments

- [illegible]
- Inflammatory products are now thought to be involved in the pathogenesis of specific neonatal problems such as bronchopulmonary dysplasia and cerebral palsy. High levels of these chemicals are found in preterm births complicated by chorioamnionitis.
- Recent studies suggest a possible role for progesterone supplementation in the prevention of preterm birth.

CASE HISTORY

[illegible]

What risk factors does Mrs A have for preterm labour?

[illegible]

[illegible]

What care should Mrs A receive?

[illegible]

How can her risk be more accurately assessed?

[illegible]

Chapter 15

Medical diseases complicating pregnancy

[illegible]	3	[illegible]	98
[illegible]	77	[illegible]	98
[illegible]	78	[illegible]	98
[illegible]	92	[illegible]	97
[illegible]	9	[illegible]	98

OVERVIEW

[illegible]

Contraceptive advice

[illegible]

Heart disease

Prevalence and aetiology

Physiology

Maternal risks

Fetal risks

Pre-pregnancy management

Issues in pre-pregnancy counselling of women with heart disease

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Antenatal management

[illegible]

Risk factors for the development of heart failure

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

Treatment of heart failure in pregnancy

[illegible]

Essential points of examination in pregnant women with heart disease

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Management of labour and delivery

[illegible]

Additional points in management

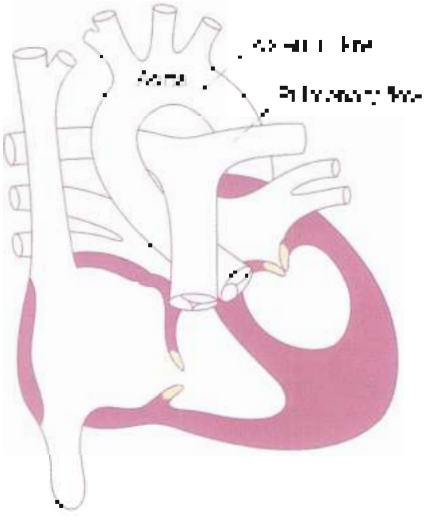
Management of labour in women with heart disease

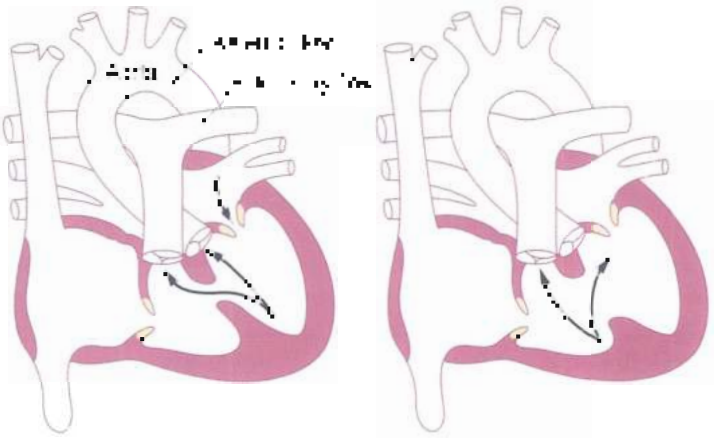
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

Specific heart conditions occurring during pregnancy

[illegible]





Hypertensive disorders

Prevalence and aetiology

Physiology

Chronic hypertension preceding pregnancy

Causes of chronic hypertension

- Essential hypertension
- Renal causes
  - glomerulonephritis
  - polycystic kidneys
  - chronic pyelonephritis
  - renovascular disease
- Collagen vascular disease
  - systemic lupus erythematosus (SLE)
  - scleroderma
- Coarctation of the aorta
- Endocrine causes
  - phaeochromocytoma
  - Cushing's syndrome

Risk factors for developing superimposed pre-eclampsia

- [illegible]

Management

Investigation of hypertension

- [illegible]

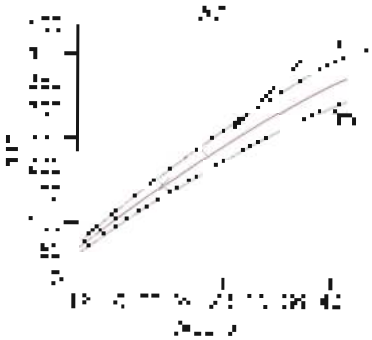
Endocrine disorders

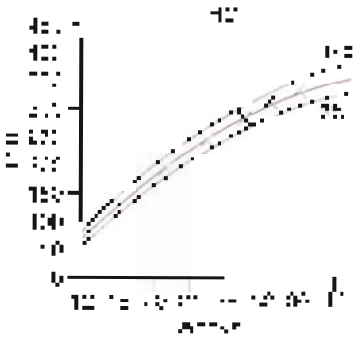
Diabetes

Risk factors for the development of diabetes in pregnancy

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Figure 12.11 [illegible]





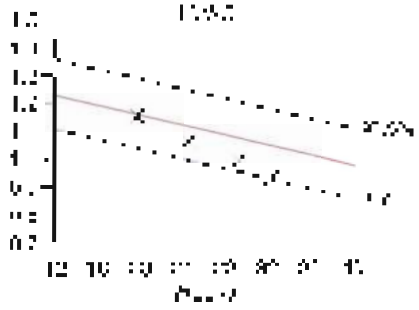


Figure 12.12 [illegible]

Maternal complications of diabetic pregnancy

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

Causes of neonatal morbidity

- [illegible]
  - [illegible]
  - [illegible]
- [illegible]
  - [illegible]
  - [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

[illegible]

[illegible] in pregnancy

[illegible]

[illegible]

[illegible]

Key Points

Diabetes in pregnancy

- [illegible]
- [illegible]
- [illegible]
- [illegible]

CASE HISTORY

Thyroid disorders

[illegible]

[illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

[

Adrenal disorders

Respiratory disorders

Asthma

Sarcoid

Cystic fibrosis

Haematological abnormalities

Anaemia

[illegible]

[illegible]

[illegible]

Thrombocytopenia

Classification of thrombocytopenia

- Increased platelet destruction
- Decreased production
- Decreased production and/or increased destruction
  - Viral infections (HIV)
- Malignant marrow infiltration

Neurological disease

Epilepsy

- [illegible]
  - [illegible]
  - [illegible]
  - [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

Migraine

[illegible]

Bell's palsy

[illegible]

[illegible] day period. Bell's [illegible]

Autoimmune disease

[illegible] disease. It is five to ten [illegible] particularly in [illegible] disease [illegible] but principally [illegible] joints, skin, [illegible] and heart. SLE may [illegible] for the first [illegible] the antiphospholipid [illegible] SLE [illegible] and [illegible] SLE [illegible] during pregnancy. The [illegible] SLE [illegible] SLE [illegible] during pregnancy. The [illegible] [illegible] [illegible]

Liver disorders

Acute fatty liver of pregnancy

Obstetric cholestasis

Investigation of cholestasis

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Complications of obstetric cholestasis

Maternal
- Haemorrhage
- Placental abruption
- Sepsis

Fetal
- Stillbirth
- Respiratory distress
- Meconium staining of liquor

Skin diseases

Polymorphic eruption of pregnancy

Pemphigoid gestationis

Prurigo of pregnancy

Key Points

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Additional reading

[illegible]

[illegible]

Chapter 12

Perinatal infections

Infections associated with congenital abnormality 247
Syphilis 247
Chlamydia trachomatis infection 249
Gonorrhoea 251
Hepatitis B virus infection 252
Hepatitis C virus infection 253
Herpes simplex virus infection 254

OVERVIEW

Infections associated with congenital abnormality

Syphilis

Table 16.1 [illegible]

S	Syphilis
T	[illegible]
O	Other
	[illegible]
	[illegible]
	Group B [illegible]
	[illegible]
	[illegible]
	[illegible]
	[illegible]
	[illegible]
	[illegible]
R	Rubella
C	Cytomegalovirus
H	Herpes
	[illegible]
	Herpes B
	[illegible]
	[illegible]

Plate 16.1 [illegible]

[illegible]

[illegible]

[illegible]

Table 6.1 [illegible]

[illegible]

[illegible]

[

Cytomegalovirus

Rubella

Varicella zoster

Other infections associated with pregnancy loss and preterm birth

Parvovirus B19

Listeria monocytogenes

Malaria

Chlamydia psittaci

Urinary tract infection

Bacterial vaginosis

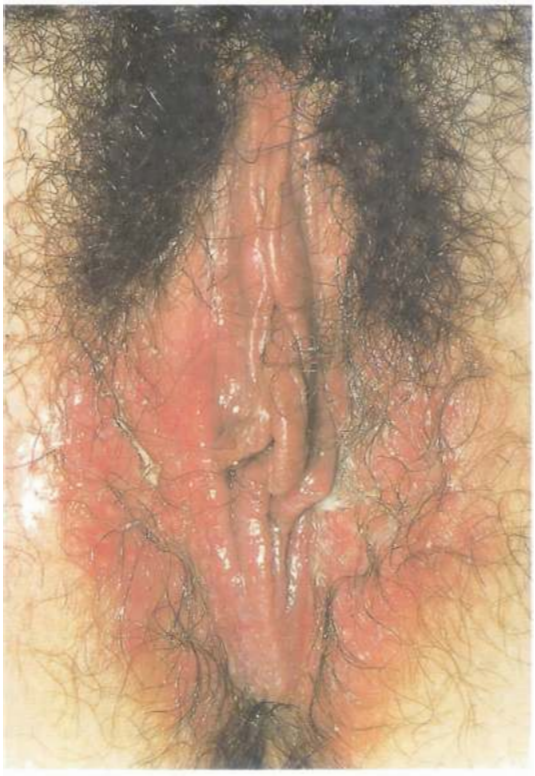


Figure 16.2

Infections affecting the neonate at birth

Herpes simplex virus

Figure 16.3

Group B *Streptococcus*

Chlamydia trachomatis

[illegible]

[illegible]

[illegible]

Table 16.2

Trichomoniasis

Other infections

Infections affecting the mother

Vaginal candidiasis

Genital warts

Figure 16.

Tropical genital ulcer disease

Other infections

Other vertically transmissible viral infections

Human T-cell leukaemia virus-1

Hepatitis A

Table [illegible] Investigations and management of [illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
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[illegible]
[illegible]

[illegible]

[illegible] [illegible] [illegible] [

Hepatitis C

Hepatitis D

Hepatitis E

HIV infection

Figure 16.5

Table 16.5

Pulmonary
Neurological
Gastrointestinal
Ophthalmic
Systemic

[illegible] HIV-1 [illegible] the [illegible] and [illegible] [illegible] [illegible]

CASE HISTORY

Discussion points

- Term vertical transmission of hepatitis B and C viruses is associated with a low risk of transmission in the first trimester of pregnancy, and active antiviral therapy is contraindicated in this period.
- Elimination of prior hepatitis B immunity is confirmed, and vaccination is offered to the baby at birth.
- Breastfeeding is not contraindicated in women with hepatitis B or C infection.
- Invasive procedures should be avoided in the baby for the first few months of life.
- Infection control measures to prevent transmission to other children should be discussed.
- The baby should be tested for evidence of infection at 6 weeks of age. Testing for hepatitis B virus infection should include HBsAg and anti-HBs. Testing for hepatitis C virus infection should include HCV RNA PCR.

Key Points

- Vertical transmission of hepatitis B virus (HBV) and hepatitis C virus (HCV) is associated with a low risk of infection.
- Active antiviral therapy is contraindicated in pregnancy.
- Elimination of prior hepatitis B immunity is confirmed in the baby at birth.
- Invasive procedures should be avoided in the baby for the first few months of life.
- Breastfeeding is not contraindicated in women with hepatitis B or C infection.

Additional reading

Chapter 17

Labour

[illegible]	449	[illegible]	456
[illegible]		[illegible]	458
[illegible]	450	[illegible]	459
[illegible]	451	[illegible]	460
[illegible]	452	[illegible]	461
[illegible]	453		

OVERVIEW

[illegible]

Introduction

[illegible]

Anatomy of the female pelvis and the fetus relevant to labour

The pelvis

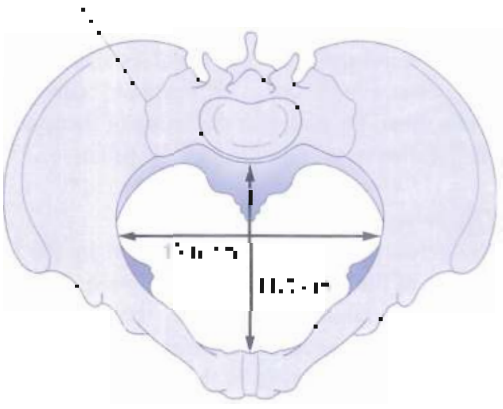


Figure 17.2

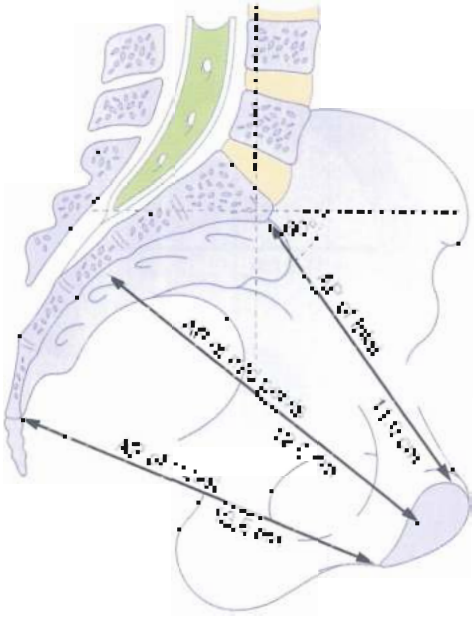


Figure 17.3

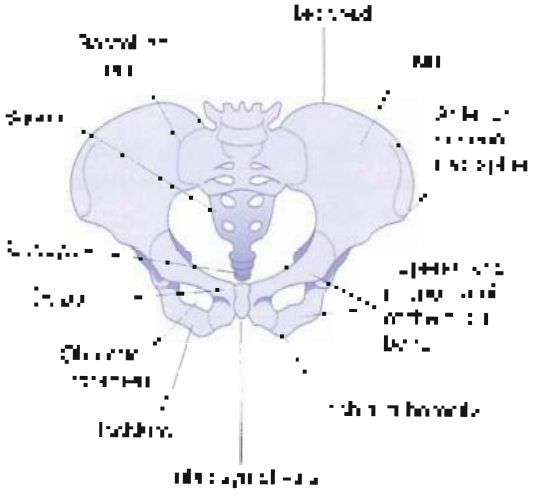
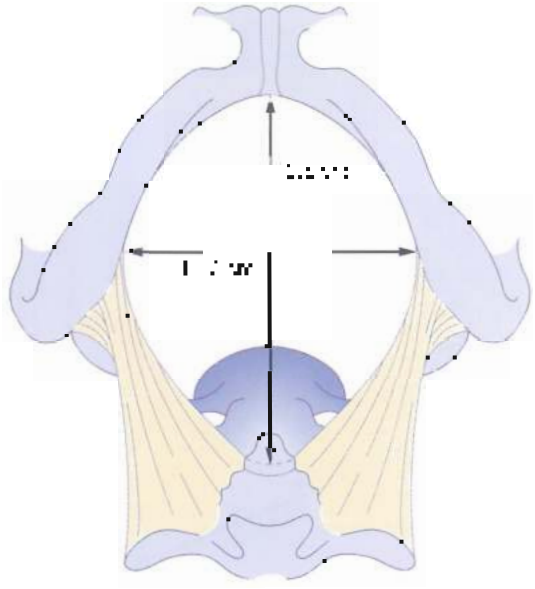
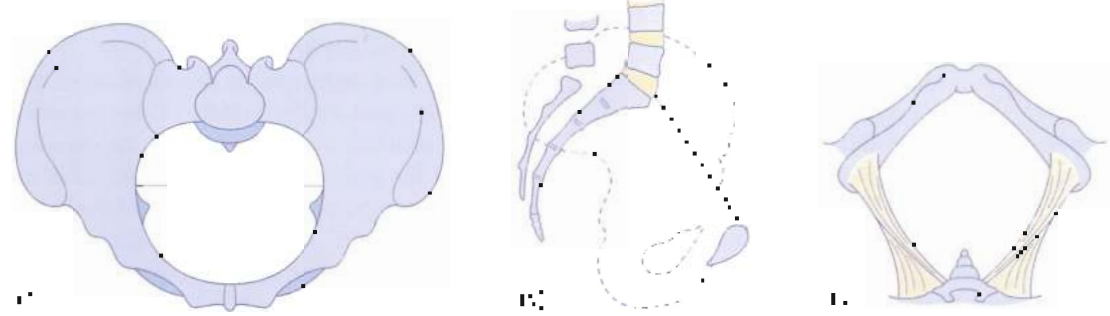
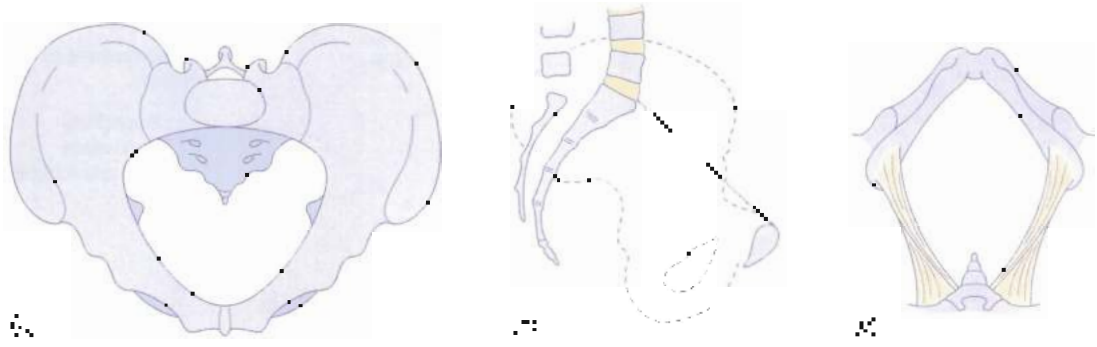


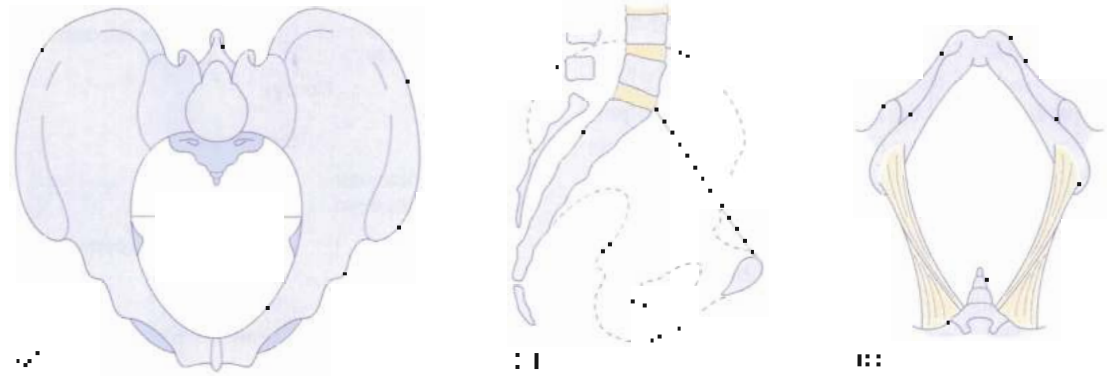
Figure 17.4

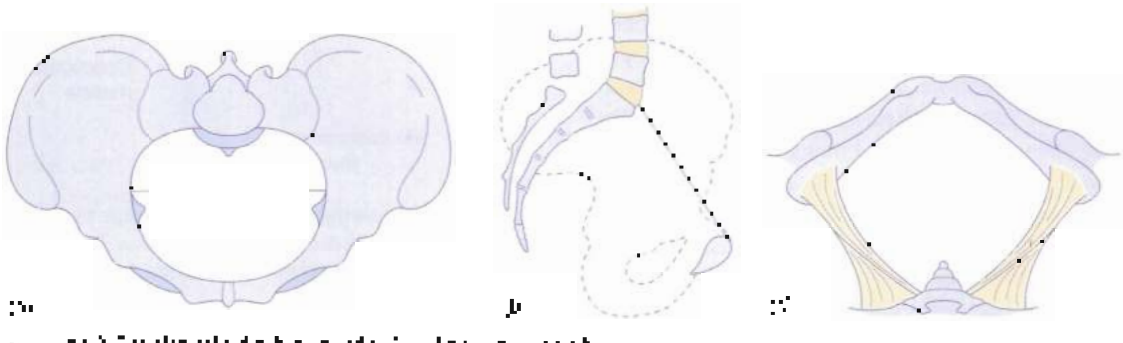
The pelvic joints











The fetal skull

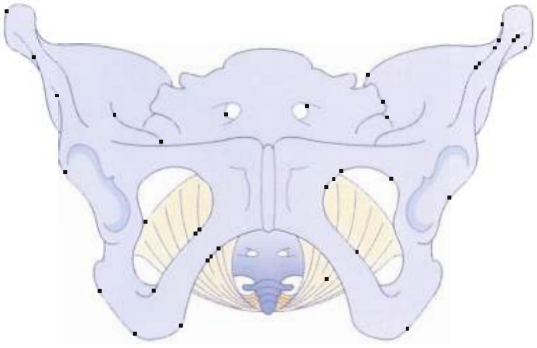
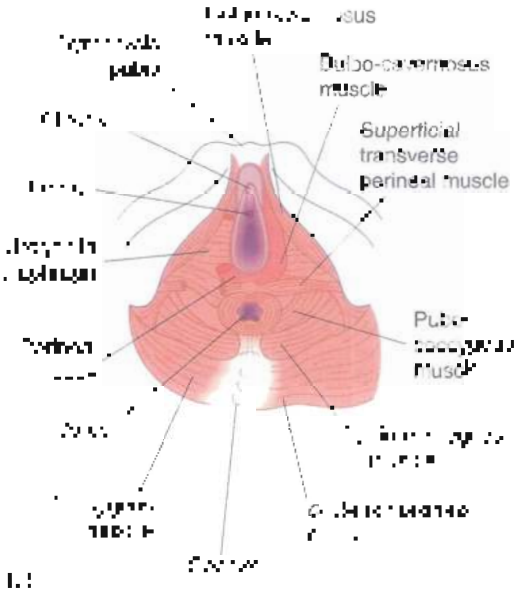
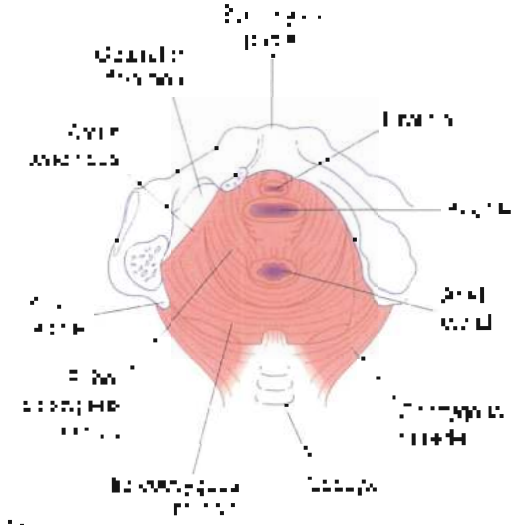


Figure 17.9

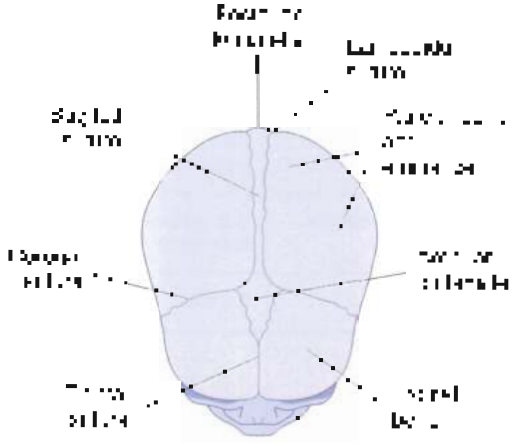


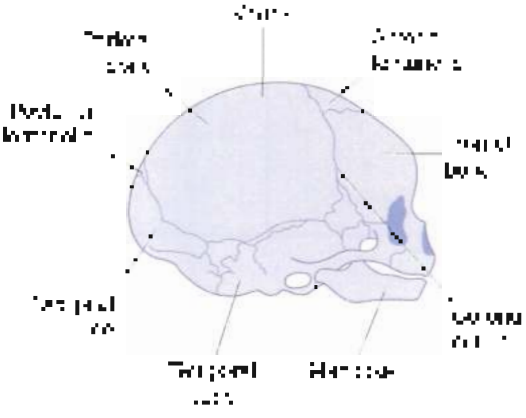
(a)

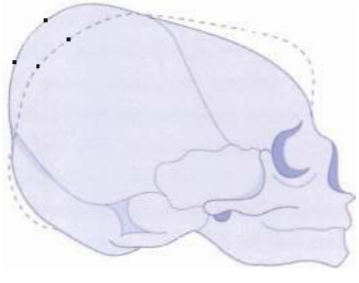


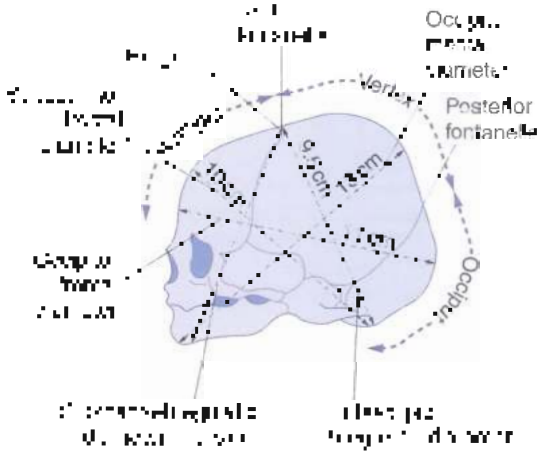
(b)

Figure 17.10









Key Points

The female pelvis

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

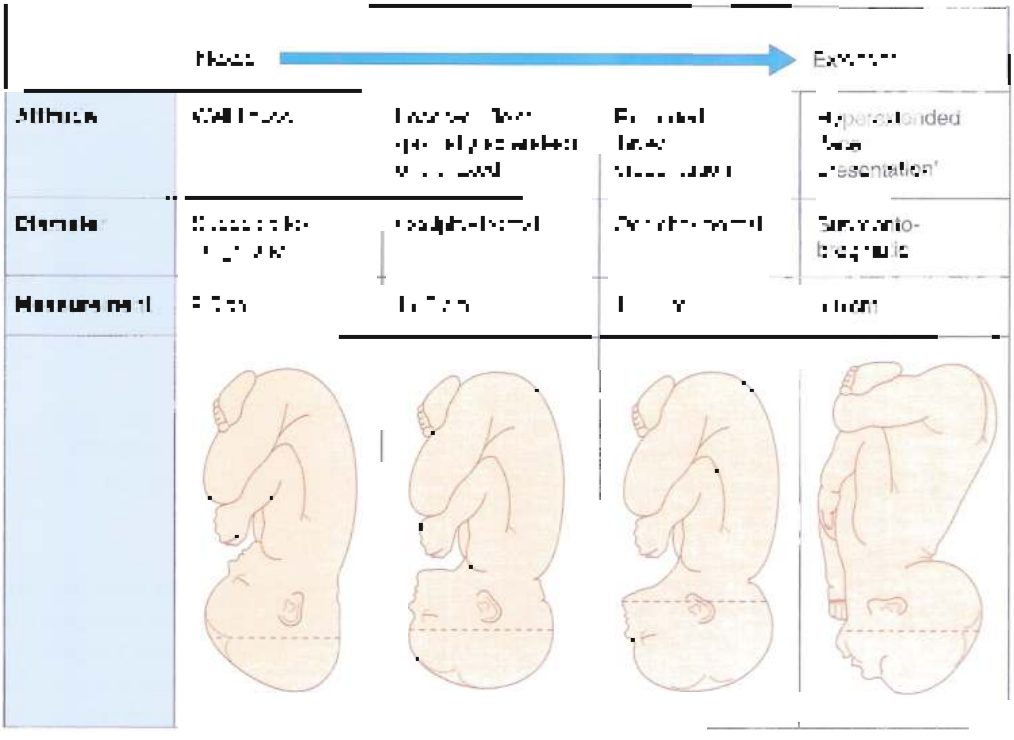
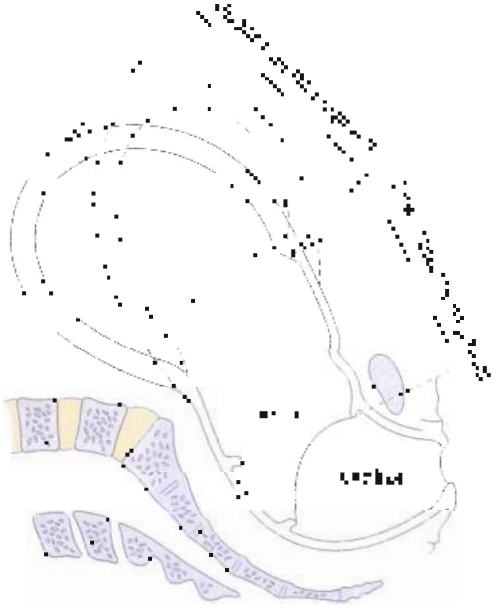


Figure 12.14

The process of labour

The onset of labour

The stages of labour



The duration of labour

The mechanism of labour

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

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[illegible]

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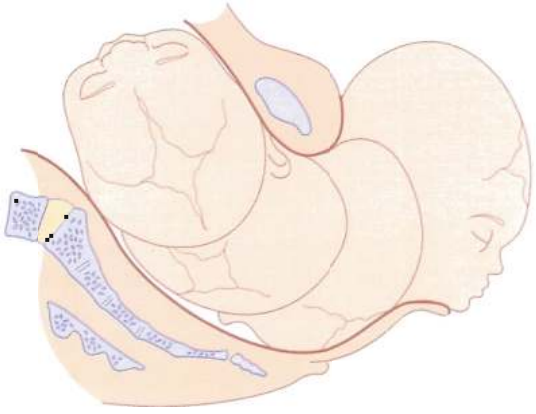

[illegible]

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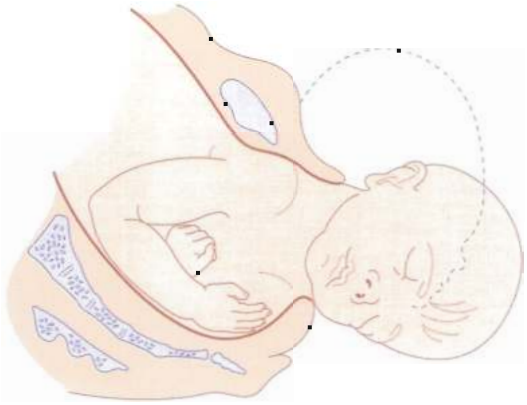


Figure 15.7 [illegible]

P Understanding the pathophysiology

[illegible]

Hormonal factors

[illegible]

The mechanism

[illegible]

Management of normal labour

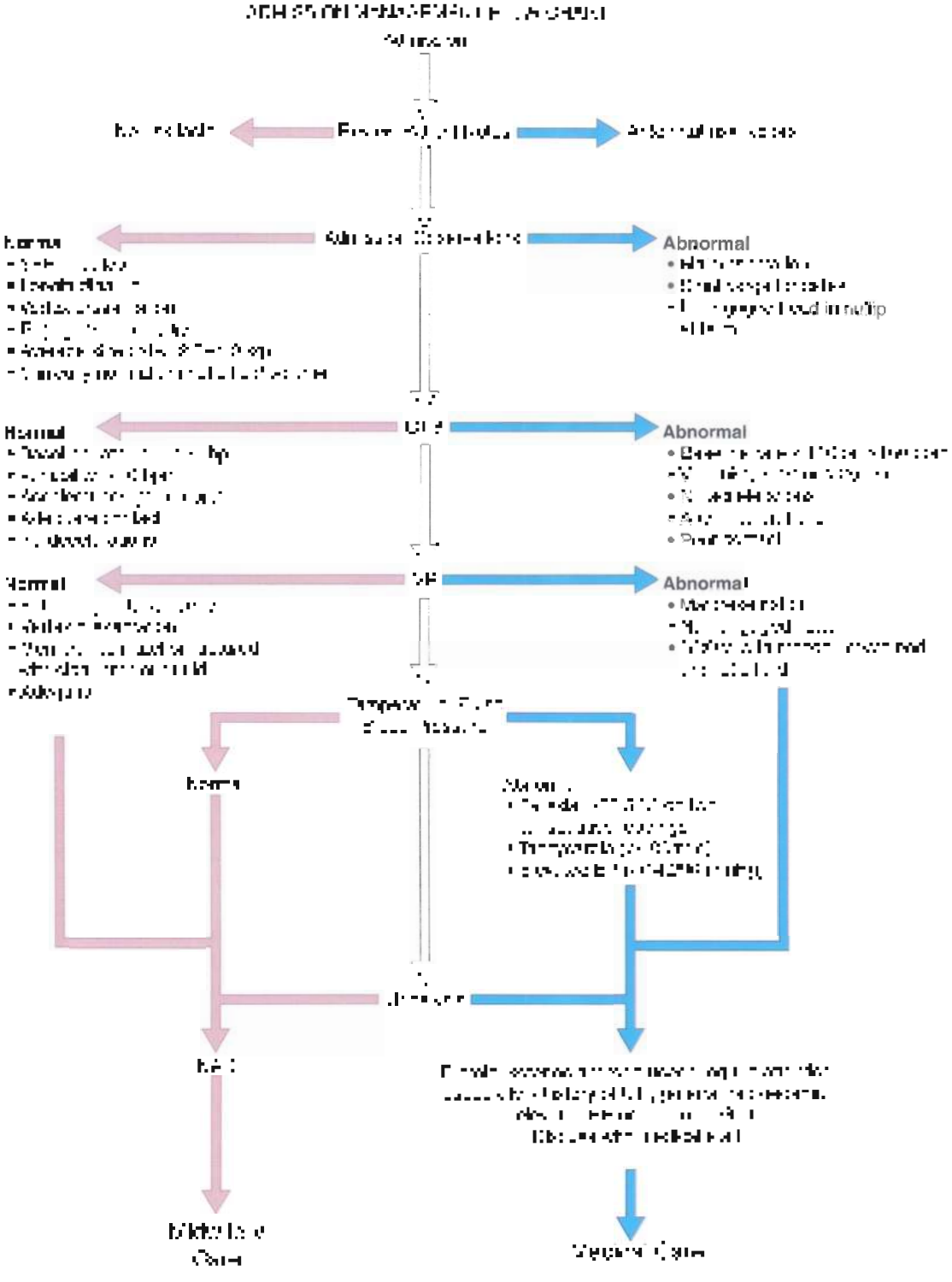
History

General examination

Abdominal examination

Vaginal examination

Fetal assessment in labour


Abnormal
Abnormal
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Abnormal

[illegible]

[illegible]

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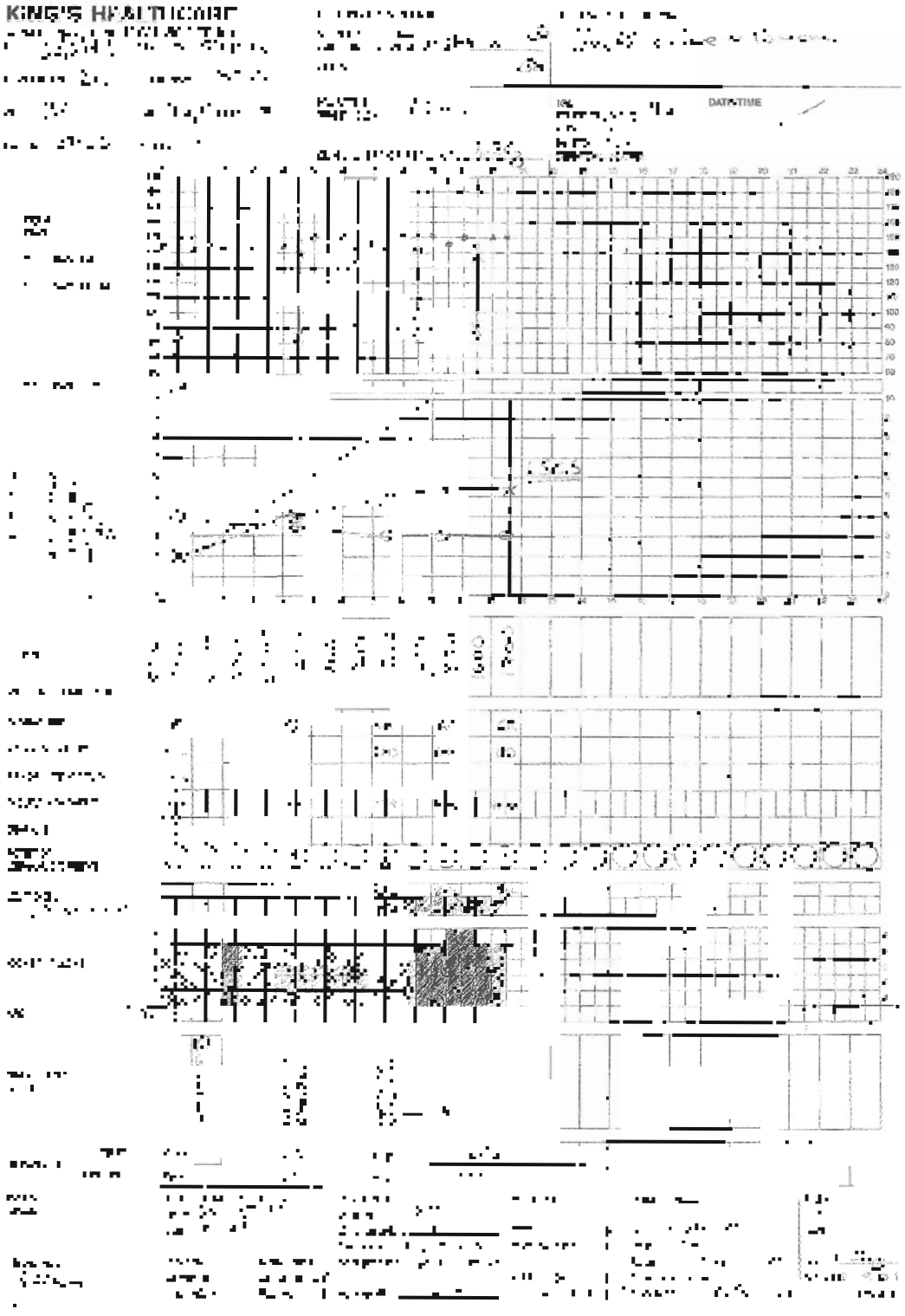

KING'S HEALTHCARE
DATE/TIME

Second stage

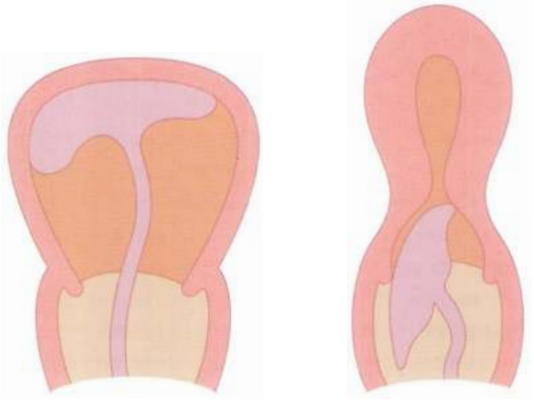
Immediate care of the neonate

Third stage

...ivity ... the delivery of the baby to the ... of the placenta and membranes. This nor... ...y takes ... and 30 minutes. If longer than ... it would be regarded as prolonged.

... of the placenta occurs because of the ... ...ction of the uterine muscle to uterine con... ...and the resultant shortening of the lattice-... ...arrangement of the myometrial muscle fibres. ... ...ep muscle fibres, the decidua basalis ... ...vessels are free in the lower segment ... the uterine cavity. Separation occurs

- ... ...ll occurs principally after the baby,
- ... ...y occurs from the placental bed ... ...ly after the baby, but the ... ...
- ... ...ment occurs more rapidly than ... ...



... 17.21 ... ...

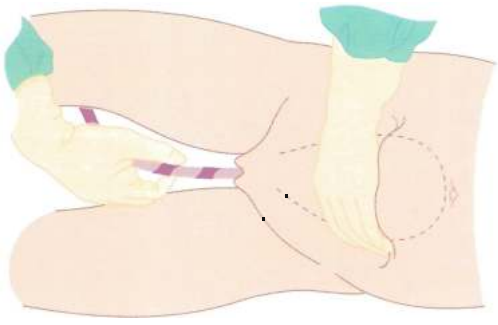


Figure 17.22

Normal labour

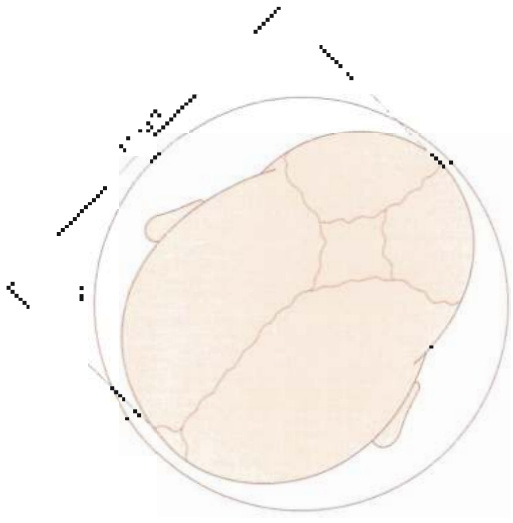
The characteristics of normal labour are:

- spontaneous onset
- cephalic presentation
- vertex presentation
- longitudinal lie
- fetal head well flexed on the chest
- head engaged in the pelvis
- cervix fully dilated and membranes ruptured
- uterine contractions:
  - strong
  - regular
  - occurring every 2–3 minutes
  - lasting 45–60 seconds
- progressive descent of the presenting part through the birth canal
- spontaneous delivery of the baby
- delivery of the placenta within 30 minutes of birth.

CASE HISTORY

Abnormal labour

Poor progress in labour



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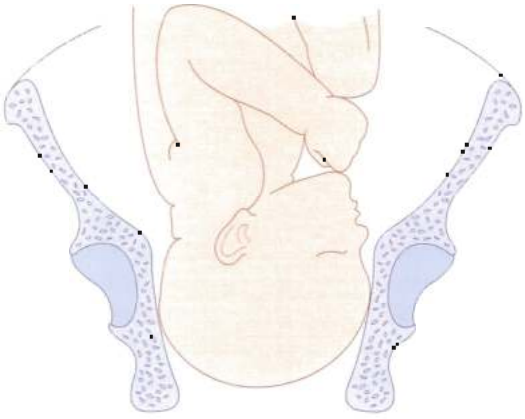

[illegible]

[illegible]

[illegible]

Key Points

The use of oxytocin

- [illegible]
- [illegible]

Presumed fetal compromise in labour

[illegible]

Risk factors for fetal compromise in labour

- [illegible]
- Diabetes
- Placental
- Multiple pregnancy
- Maternal illness
- Hypertensive disorder
- Hospital care
- Induction of labour
- Oxytocin
- Uterine overdistension
- Meconium stained

- [illegible]
- [illegible]
- [illegible]
- [illegible]

Management of possible fetal compromise

[illegible] should be considered:

- [illegible]
- [illegible] maternal [illegible]
- Uterine hyperstimulation [illegible] [illegible] [illegible]

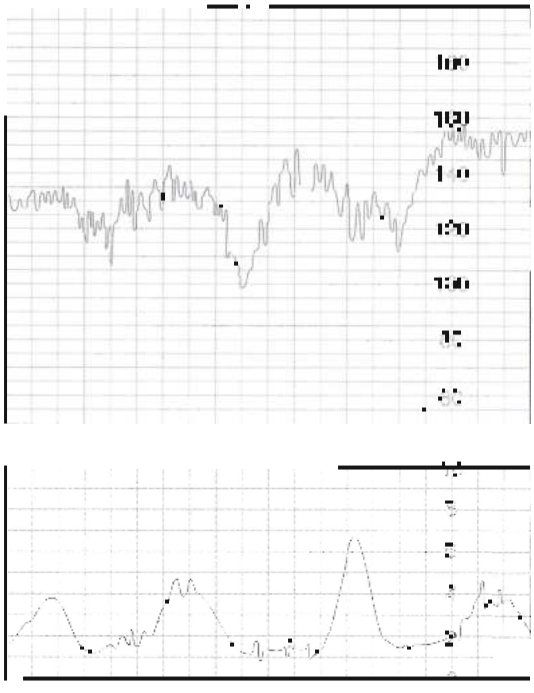

Figure 17.27

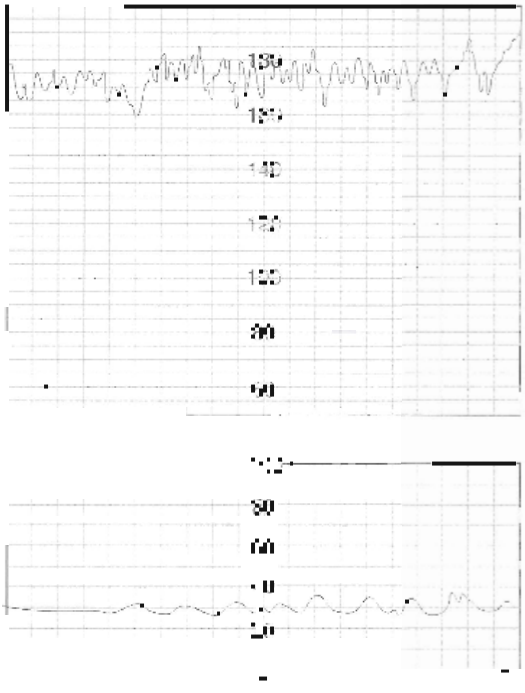

Figure 17.29

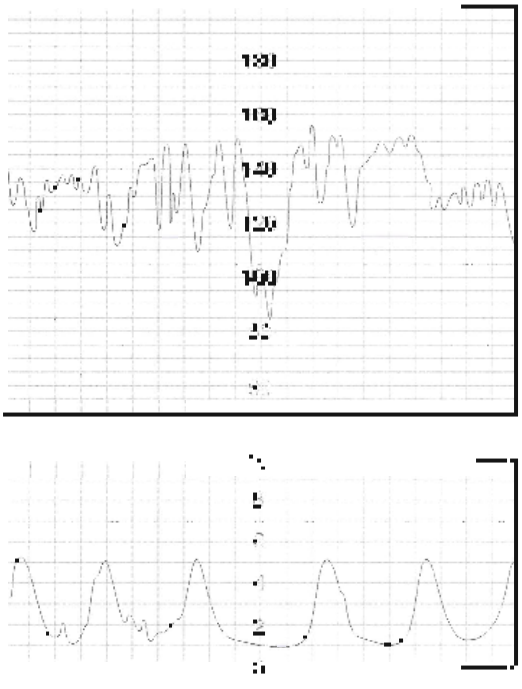

Figure 17.28

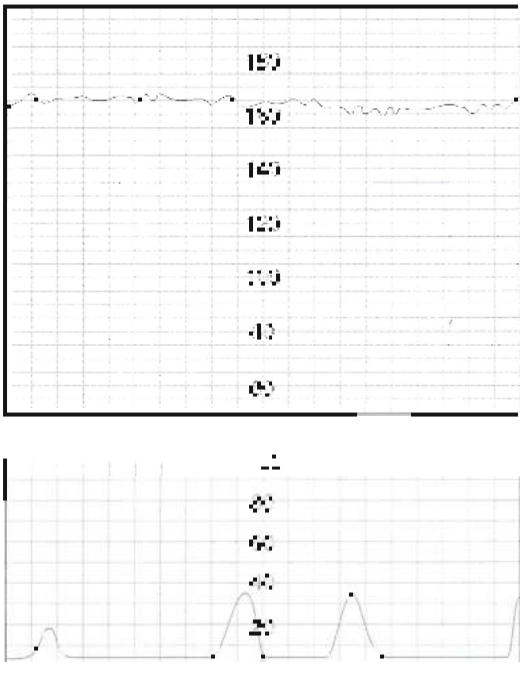

Figure 17.30

Fetal blood sampling

- [illegible]
- The normal range is 7.25–7.35. A pH below 7.20 is considered pathological.
- [illegible] pH < 0

A pH value in the range 7.20–7.25 is associated with increasing risk of neurological injury beyond this level.

- The fetal scalp pH in labour is also useful as a screening test. A downward trend in the fetal scalp pH values is significant and should be assessed together with how the labour is progressing.
- If an abnormal CTG persists for about 30 minutes despite normal values, fetal scalp sampling should be repeated every 30–60 minutes.

CASE HISTORY

[illegible] Mrs S is a 34-year-old primigravida. She is 39 weeks pregnant and 3 days previously was delivered by her obstetrician of a baby girl weighing 3.8 kg. The baby was born after a prolonged second stage. The baby's condition at birth was satisfactory.

Soon after delivery, Mrs S developed severe pain in the abdomen and vomited. She was given pethidine and metoclopramide by injection. Later, a scan of the abdomen revealed free fluid in the abdomen and also confirmed the presence of a live baby. A diagnosis of ruptured uterus was made.

Despite prompt surgical intervention, Mrs S developed a severe coagulopathy. She received a total of 12 units of blood and blood products. She was also found to have a hysterectomy. Her baby girl was admitted to the neonatal unit with respiratory distress. She was ventilated for 48 hours and made a full recovery. There were no other problems encountered.

What risks do Mrs S and her baby face?

The [illegible] risk of [illegible] is [illegible] due to the [illegible] of CPD. The [illegible] risk factors [illegible] a history of [illegible] and [illegible] previous [illegible] failure, [illegible] and [illegible] the [illegible] baby [illegible] a [illegible] [illegible] [illegible]

- [illegible]
- [illegible]
- [illegible]

[illegible]

- [illegible]
- [illegible]

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- [illegible]
- [illegible]

[illegible]

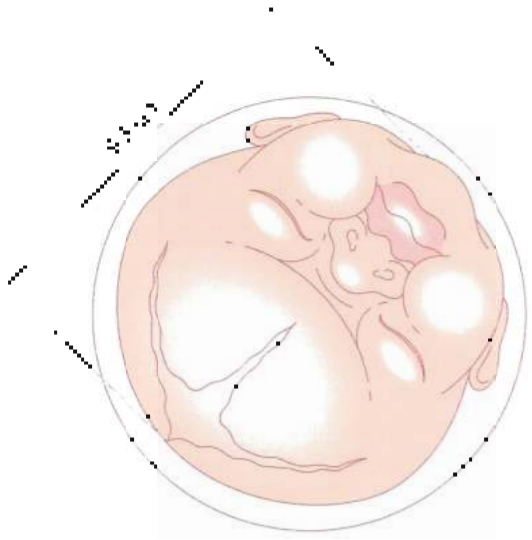


Figure 17.31

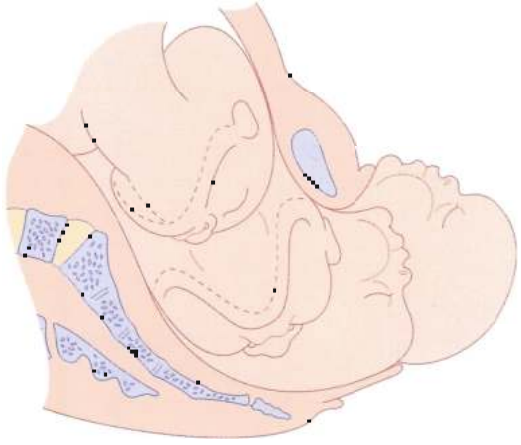


Figure 17.32

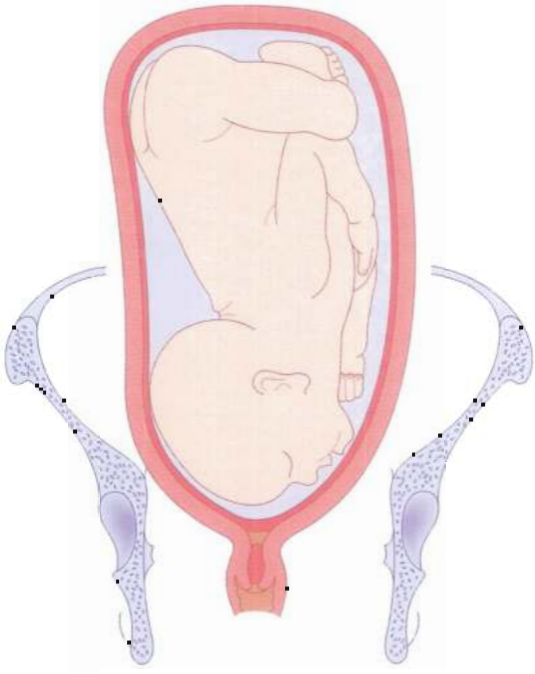


Figure 17.33

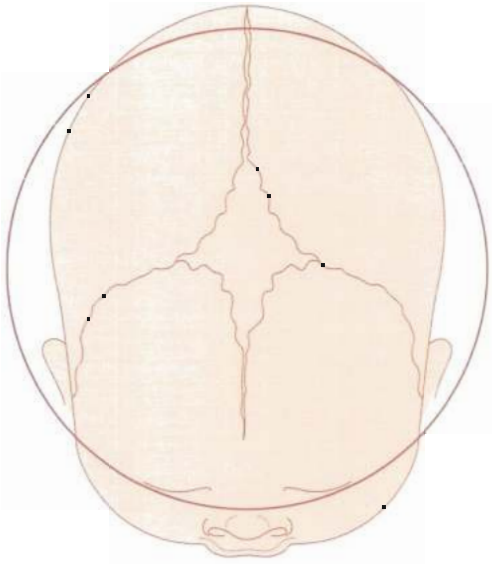


Figure 17.34

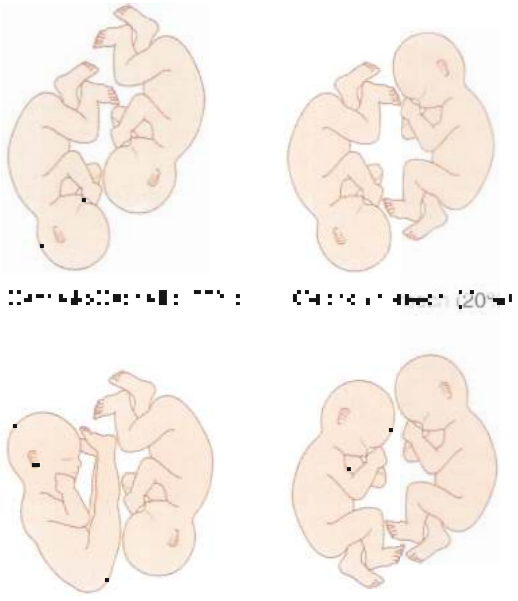


Figure 17.35

Multiple gestations

Indications for elective Caesarean section in twin pregnancy

-
-
-
-

Key Points

Induction of labour

Common indications for induction of labour

The Bishop score

Table 1 [illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	5 or more
[illegible]	[illegible]	[illegible]	–
[illegible]	[illegible]	[illegible]	<0.5
[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	Below spine

Methods

[illegible]

Complications of induction of labour

[illegible]

CASE HISTORY

[illegible]

What risks do Mrs B and her baby face?

[illegible]

What care should Mrs B receive?

What ongoing care should she receive?

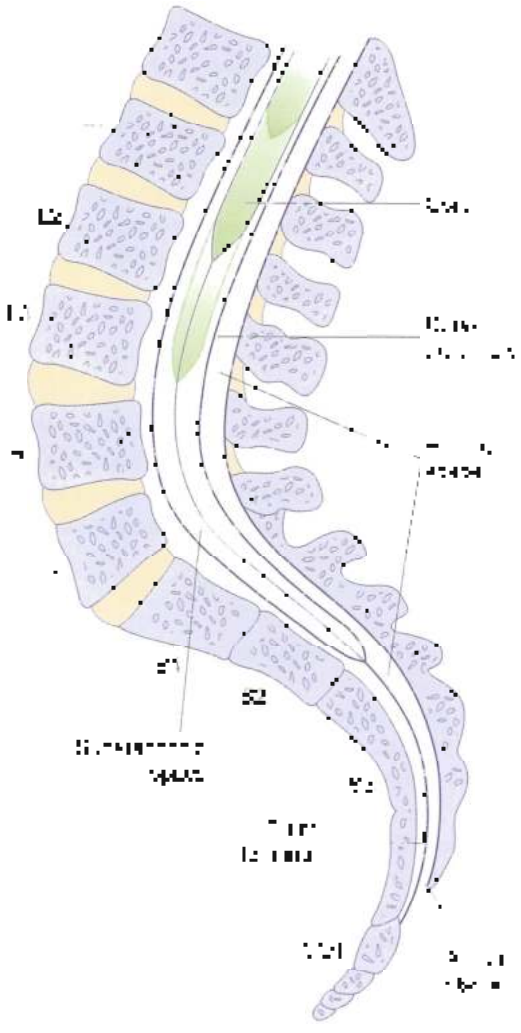
Pain relief in labour

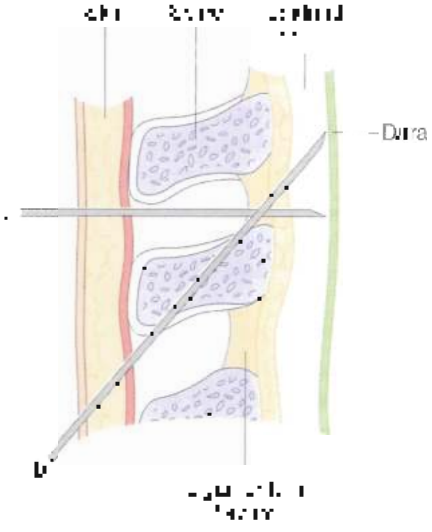
Non-pharmacological methods

Pharmacological methods

Inhalational analgesia

Epidural analgesia





Spinal analgesia

Combined spinal–epidural analgesia

Complications of regional analgesia

- Hypotension is more common in women undergoing caesarean section and can usually be avoided with correct use of
- Accidental dural puncture during the loss of resistance technique for epidural insertion is more likely in the young woman. If a dural puncture is identified, the epidural catheter should be withdrawn and a new epidural space identified at a different level. Dural puncture with a Tuohy needle will result in a post-dural puncture headache in approximately 70% of women. Treatment is conservative initially, with bed rest, analgesia and caffeine. If the headache is severe or persistent, an epidural blood patch may be performed. This involves injecting 10–20 ml of the woman's own blood into the epidural space at the site of the dural puncture. The pressure of the blood in the epidural space usually relieves the headache immediately.
- Accidental intravascular injection of epidural solution can result in convulsions, cardiac arrhythmias and cardiovascular collapse. Prevention is by careful aspiration of the epidural catheter before injection of local anaesthetic solution and by using a test dose of local anaesthetic with adrenaline (epinephrine) to detect intravascular placement of the catheter. Treatment is by resuscitation with oxygen, intravenous fluids and ephedrine.
- Neurological damage is rare and is usually due to epidural abscess or haematoma.
- Inadvertent intravascular or subdural placement of the catheter within the vertebral canal is more likely in the young woman. This is more likely to occur during labour than in the elective caesarean section patient. Aspiration prior to injection of local anaesthetic solution and the use of a test dose of local anaesthetic with adrenaline (epinephrine) will help to detect inadvertent intravascular placement of the catheter. Subdural placement of the catheter is more difficult to detect. Signs of subdural block include a high block, unilateral block and delayed onset of block. Subdural placement of the catheter is rare.
- Retention of urine is common after epidural analgesia. The bladder is usually overdistended before the woman is aware of the need to void. Overdistension of the bladder can permanently damage the detrusor muscle, causing problems with micturition. To avoid this complication, the bladder should be emptied regularly, either by the woman herself or by catheterization.
- Backache is common after pregnancy. It is unclear whether epidural analgesia increases the incidence of backache.
- Epidural analgesia may mask the symptoms of developing intracranial pathology. Women with pre-eclampsia are commonly managed with epidural analgesia. Any deterioration in the woman's condition, such as the development of severe epigastric pain, nausea or vomiting, may be masked by epidural analgesia. Careful observation of the woman's condition is therefore essential. Epidural analgesia may also mask the symptoms of developing epidural haematoma. Careful observation of the woman's condition is essential.

Clinical risk management

[illegible]

[illegible]

[illegible]

Chapter 15

Operative intervention in obstetrics

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

OVERVIEW

[illegible]

Introduction

[illegible]

[illegible]

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- [illegible]
- [illegible]
- [illegible]

- [illegible]
- [illegible]
- [illegible]

Perineal care

Episiotomy

[illegible]

[illegible]

[illegible]

Possible indications for an episiotomy

- [illegible]

Performing the episiotomy

[illegible]

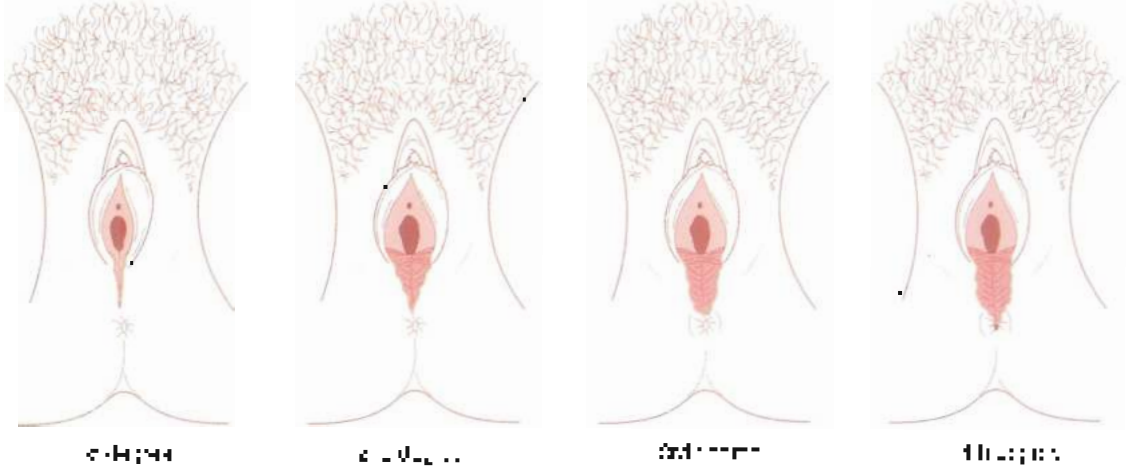
Key Points

Episiotomy

- [illegible]

Perineal repair

[illegible]



[illegible]

Fig. 9.8 [illegible]

Key Points

Perineal repair

- [illegible]
- [illegible]
- [illegible]

[illegible] repairable. Malaligned repair [illegible] scarring. [illegible] lead to [illegible]

Third/fourth-degree tear repair

[illegible] a complication [illegible] of women [illegible] has [illegible] that [illegible] sphincter [illegible]

[illegible] [illegible] [illegible] [

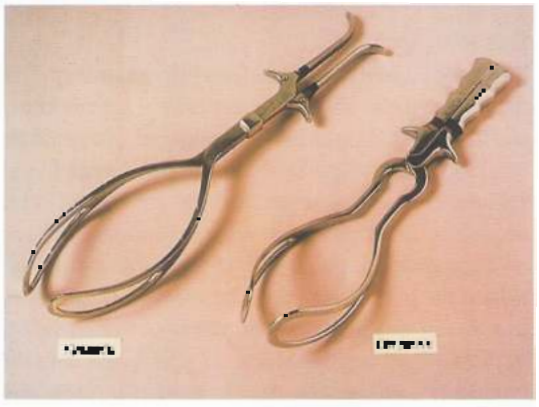


Figure 17.1 Kielland's forceps: (a) pelvic curve; (b) cephalic curve

Ventouse delivery

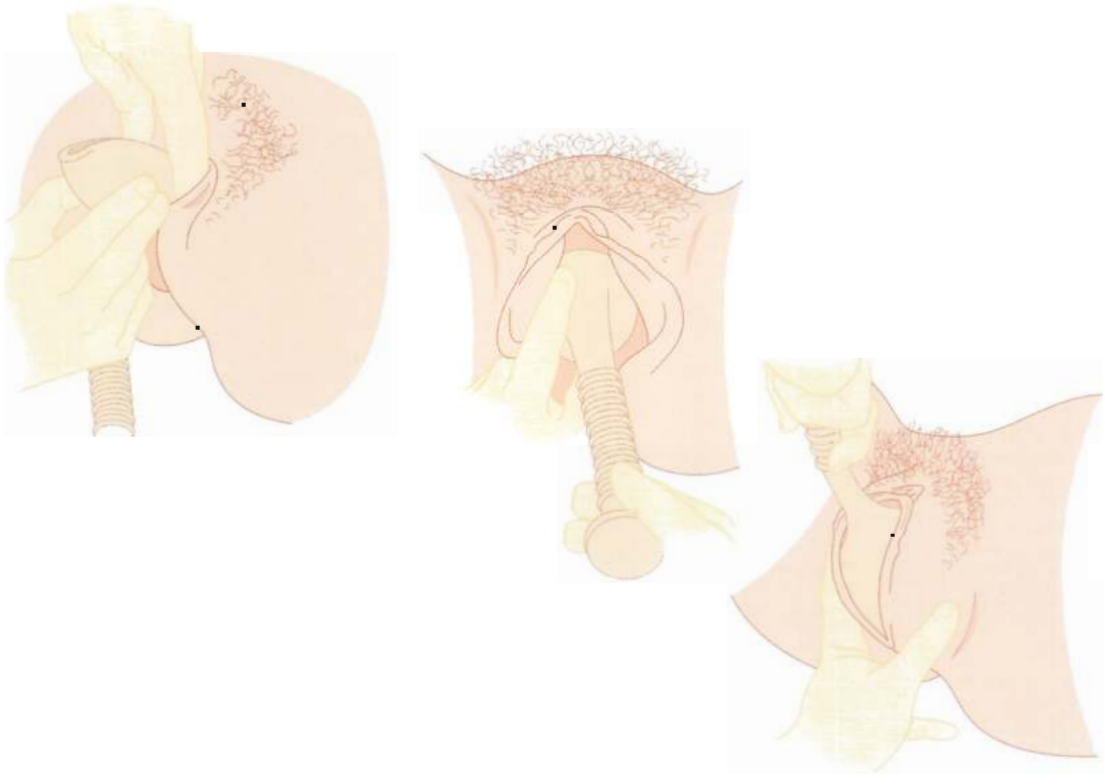


Figure 19.4

Indications and contraindications for delivery with the ventouse

Indications

- [illegible]
- [illegible]
- [illegible]

Contraindications

- [illegible]
- [illegible]
- [illegible]

Prerequisites for delivery with the ventouse

- [illegible]
- [illegible]
- [illegible]

Basic rules for delivery with the ventouse

- [illegible]
- [illegible]
- [illegible]
- [illegible]

Technique

[illegible]

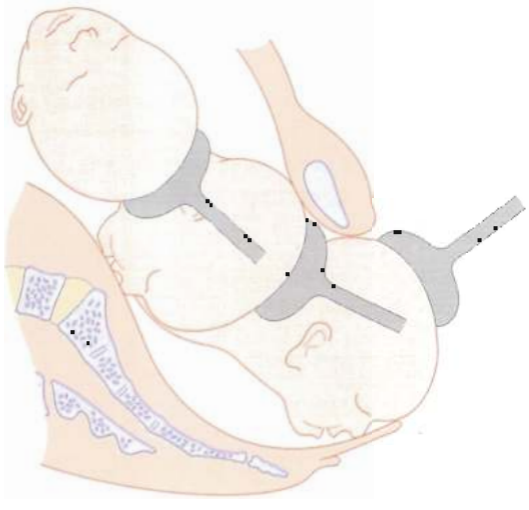


Figure 25.3 [illegible]

Key Points

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Forceps delivery

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Indications and contraindications for forceps instead of ventouse

- [illegible]
- [illegible]
- [illegible]
- [illegible]

- [illegible]
- [illegible]

Breech delivery

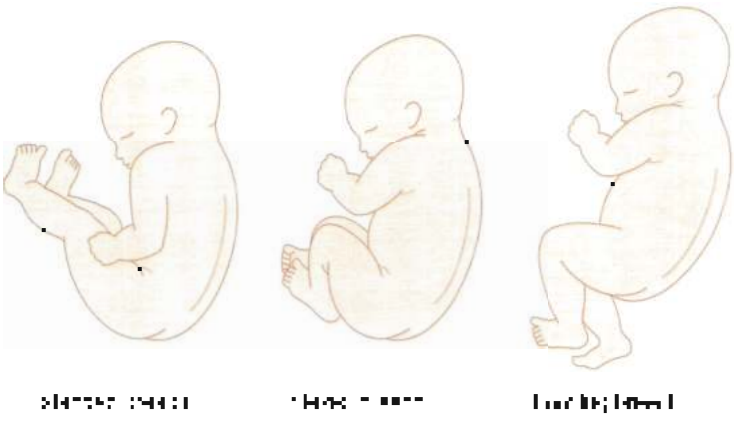


Figure 18.7

[illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible]

Feto-maternal

- [illegible]
- [illegible]

Management of labour

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

Delivery of the buttocks

[illegible]

[illegible]

[illegible]

Delivery of the shoulders

[illegible] As the anterior shoulder reaches the anteroposterior diameter, the [illegible] will become visible. At this point, [illegible] the shoulder will be [illegible] As the posterior arm/shoulder [illegible] will [illegible] anteriorly in the [illegible] direction. As the spine becomes visible, [illegible] will follow. This can be [illegible] by [illegible] side to side, [illegible] [illegible] [illegible]

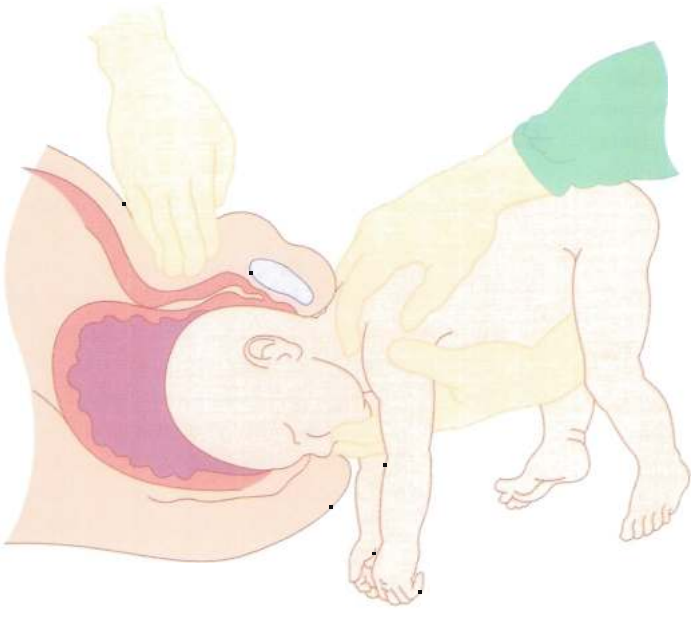


Figure 18.9 [illegible]

Delivery of the head

[illegible]

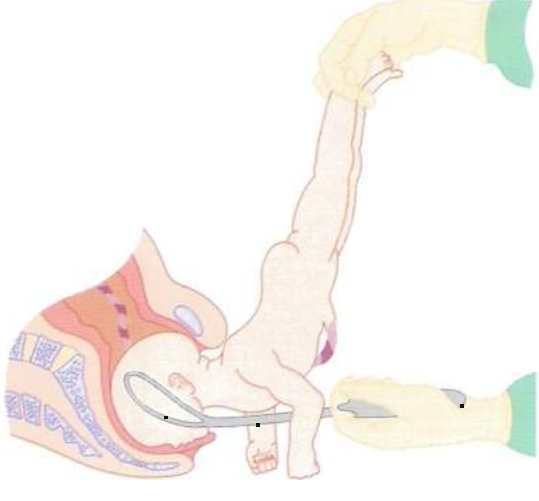


Figure 18.10 [illegible]

Complications

[illegible]

Caesarean section

Definition

[illegible]

History and epidemiology

[illegible]

Preparation for Caesarean section

Operative procedure

Post-mortem Caesarean section

Complications

Indications for Caesarean section

Classical Caesarean section: possible indications

Twin delivery

Analgesia during labour

Fetal well-being in labour

Vaginal delivery of vertex–vertex

Delivery of vertex–non-vertex

Figure [illegible]

Non-vertex first twin

Preterm twins

Requirements for twin delivery

Placental complications

Retained placenta

Management

Placenta accreta

Definition

Epidemiology

Management

Key Points

Retained placenta

- [illegible]
- [illegible]
- [illegible]
- [illegible]

Haematomas

Vulval and paravaginal haematomas

Definition

Prevention and recognition

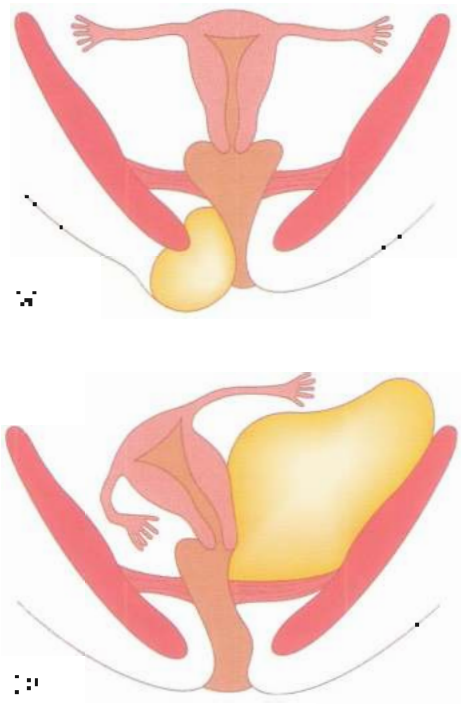


Figure 18.14 Subperitoneal haematoma.

[illegible]

[illegible]

[illegible]

Management

Repair

Key Points

- [illegible]

Caesarean hysterectomy

Indications

Key Points

Emergency hysterectomy

- [illegible]

Rarely performed but important operative interventions

Symphysiotomy

Destructive operations

CASE HISTORY

Should the delivery be performed in the obstetric theatre?

What risks are there for Miss S after delivery?

Additional reading

Chapter 19

Obstetric emergencies

[illegible] 345
[illegible] 350
[illegible] 351
[illegible] 354
[illegible] 355
[illegible] 361
[illegible] 362
[illegible] 364
[illegible] 365
[illegible] 366
[illegible] 367
[illegible] 368

OVERVIEW

[illegible]

Definition

[illegible]

Management

[illegible]

Table 9.1 [illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Bleeding [illegible] Intravenous access (16 gauge) Oxygen [illegible]

[illegible]

[illegible]

[illegible]

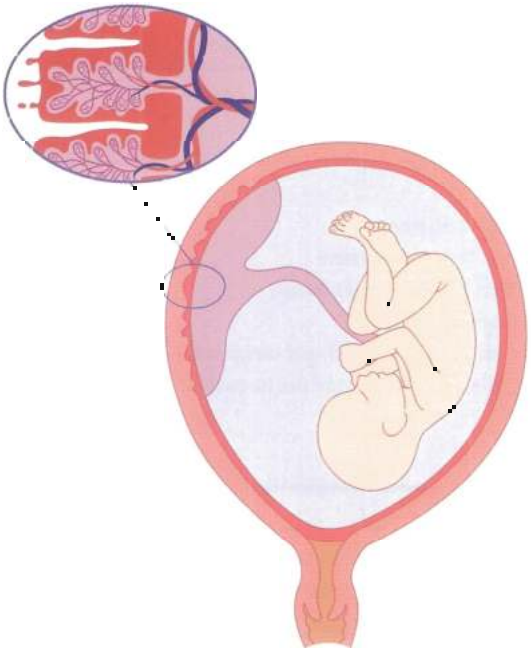


Figure 9.1 [illegible]

Table 9.1 [illegible]

- [illegible]
  - [illegible]
  - [illegible]
- [illegible]
- [illegible]
-

Table 10.3 Sample Sonic Hedgehog [illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

[illegible]

[illegible]

[illegible]

Key Points

Uterine haemorrhage

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Uterine rupture

[illegible]

Uterine inversion

[illegible]

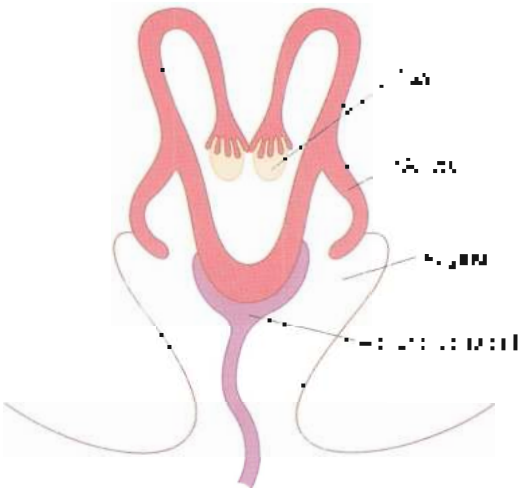


Figure 18.2 [illegible]

[illegible]

Pulmonary embolism

[illegible]

[illegible]

[illegible]

Table [illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Hypertensive disorders: pre-eclampsia and eclampsia

Definition

[illegible]

Incidence and epidemiology

[illegible]

[illegible]

S Symptoms of severe pre-eclampsia

- [illegible]

Signs of severe pre-eclampsia

- [illegible]

[illegible]

Investigations

Treatment

Indications for urgent delivery

HELLP syndrome

Key Points

Hypertensive disorders

- [illegible]
- [illegible]
- [illegible]
- [illegible]
  - [illegible]
  - [illegible]
  - [illegible]
  - [illegible]
  - [illegible]
- [illegible]

CASE HISTORY

What are the risks in this case?

Plan of action

- [illegible]
- Prompt fetal blood sampling
  - [illegible]
  - [illegible]
- Vacuum assisted operative delivery
  - [illegible]
  - [illegible]
  - [illegible]
- [illegible]

Management of the case

[illegible]

[illegible]

[illegible]

[illegible]

Conclusion

[illegible]

The collapsed obstetric patient

[illegible]

Causes of loss of consciousness

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Remember the basic life support skills

- [illegible]
- [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Fetal emergencies

[illegible]

Umbilical cord accidents

[illegible]

[illegible]

[illegible]

Risk factors in shoulder dystocia

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Shoulder dystocia drill

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
  - [illegible]
  - [illegible]
  - [illegible]

Key Points

Maternal emergencies

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Additional reading

[illegible]

The puerperium

[illegible]	20	[illegible]	27
[illegible]	21	[illegible]	28
[illegible]	24	[illegible]	29
[illegible]	25	[illegible]	30
[illegible]	26		

OVERVIEW

[illegible]

Physiological changes

Uterine involution

[illegible]

Signs: causes of delayed involution

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

Genital tract changes

[illegible]

Lochia

[illegible]

[illegible]

Puerperal disorders

[illegible]

Perineal complications

[illegible]

Bladder function

Bowel function

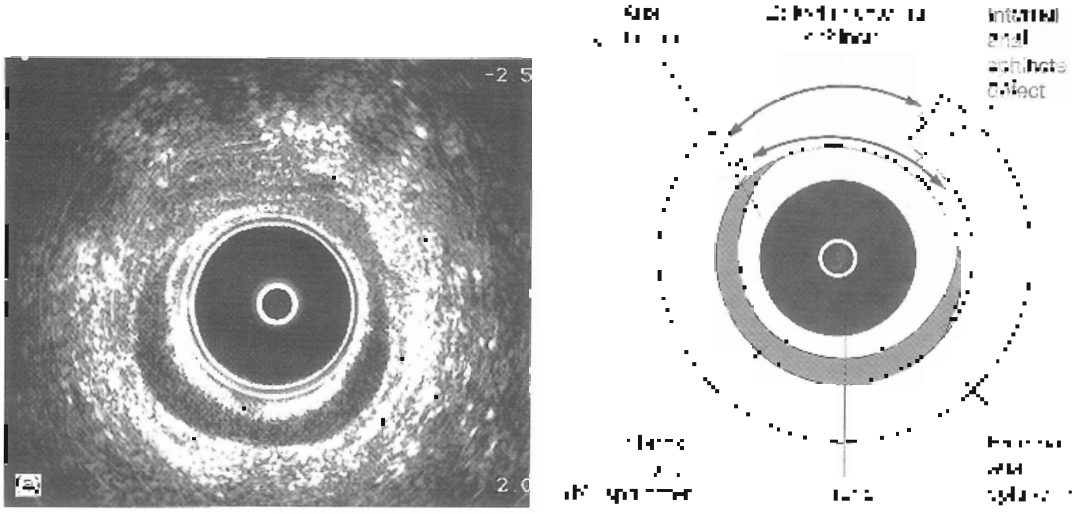


Figure 20.1 [illegible]

Secondary postpartum haemorrhage

Obstetric palsy

Symphysis pubis diastasis

Thromboembolism

Puerperal pyrexia

Chest complications

Genital tract infection

Table 20.1 [illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible] [illegible] [illegible] [

- [illegible]
- [illegible]
- [illegible]
- [illegible]
  - [illegible]

[illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible] [illegible] [illegible] [

Common risk factors for puerperal infection

- [illegible]

Prevention of puerperal sepsis

[illegible]

The breasts

Anatomy

[illegible]

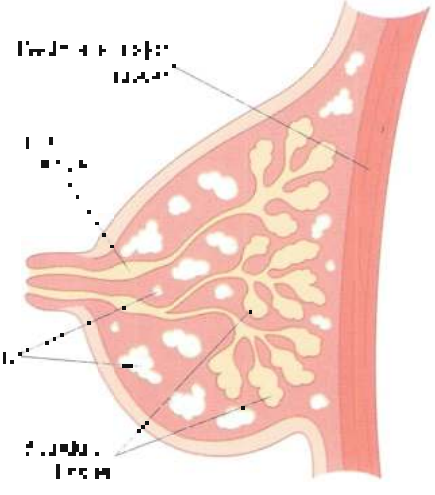


Figure 5B.9 The mature breast in lactation

Physiology

Colostrum

Breast milk

Table 20.1 [illegible] and cow's milk

	Human breast milk	Cow's milk
[illegible]	70	66
[illegible]	6.4	4.9
[illegible]	1	3.4
[illegible]	3.5	3.7
[illegible]	7	5
[illegible]	0.1	0.1

Prolactin

Oxytocin

Breastfeeding

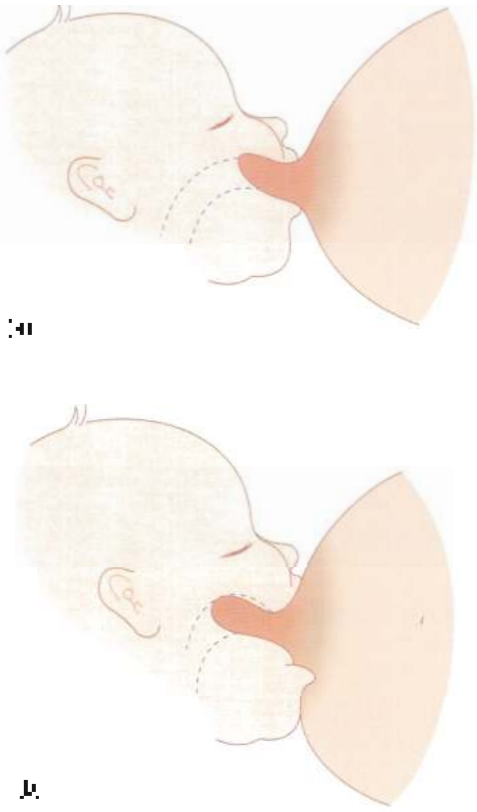


Figure 30

[illegible]

[illegible]

[illegible]

Mastitis

Figure 9.1 Unilateral mastitis in a breastfeeding woman

Contraception

Pelvic floor exercises

Perinatal death

- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

The postnatal examination

This is carried out at [illegible] weeks postpartum by the [illegible] by the obstetrician if delivery has occurred. The examination includes [illegible] mental and physical health of the mother and baby. In particular, [illegible] history, bowel [illegible] and [illegible] [illegible] [illegible]

Chapter 21

Psychiatric disorders in pregnancy and the puerperium

[illegible] 88
[illegible] 90

OVERVIEW

[illegible]

The importance of psychiatry to obstetrics

[illegible]

Incidence of postpartum mental disorders

- [illegible] 10–15%
- [illegible] 10%
- [illegible] 3–5%
- [illegible] 1–2%
- [illegible] 0.2%
- [illegible] 0.1%

'Normal' emotional and psychological changes during pregnancy

- [illegible]
- [illegible]
- [illegible]

Bipolar affective disorder

Depression

Anxiety disorders

New-onset psychiatric disease in pregnancy

Antenatal

Postnatal

Symptoms of puerperal psychosis

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Risk factors for postpartum psychosis

- [illegible]
- [illegible]
- [illegible]

CASE HISTORY

[illegible]

Risk factors for postnatal depression

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Adverse sequelae of postnatal depression

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

P Understanding the pathophysiology

[illegible]

(continues)

S Symptoms of severe postnatal depression

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Clinical features

[illegible]

[illegible]

[illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

[

Key Points

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Chapter 22

Neonatology

[illegible]	[illegible]	Postgraduate education in neonatology	[illegible]
Organization of neonatal care	[illegible]	Overview	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

OVERVIEW

[illegible]

The challenge of neonatology

[illegible]

Organization and provision of neonatal care

[illegible] [illegible] [illegible] [

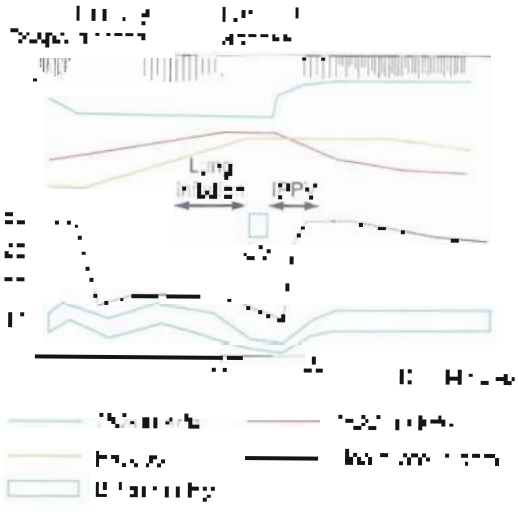


Figure 22.1

Delivery room care

The transition from intrauterine to extrauterine life

Table 22.2 [illegible]

[illegible]

[illegible]

Resuscitation

[illegible]

1. [illegible]
2. [illegible]
3. [illegible]

Table 22.3 [illegible]

	[illegible]			
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

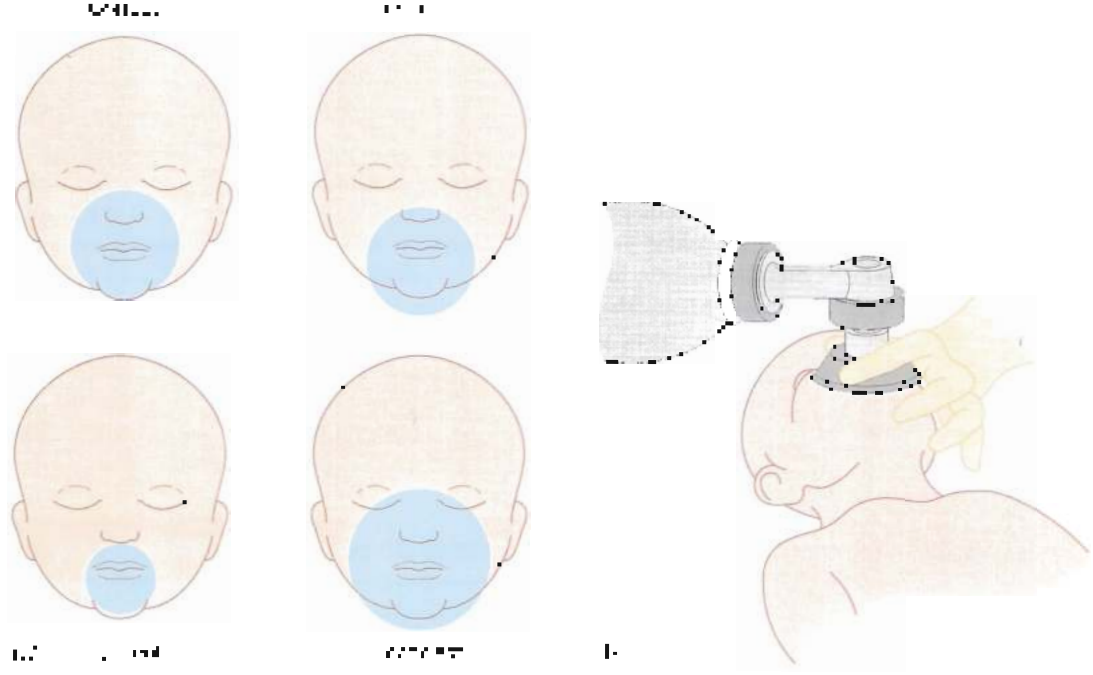


Figure 6.2

Care of the normal term newborn baby

Examination

child health records in pregnancy (Section 23). The care of the newborn baby includes:

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Table 23.1 [illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

[illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

Figure 22.2

Figure 22.5

Figure 22.6

Danger signs in the well-baby nursery

-
-
-
-
-
-
-
-
-
-
-

Screening for important neonatal conditions

Table 22.5 [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

[

Prophylaxis and prevention of disease in the well newborn

Prevention of vitamin K deficiency bleeding (haemorrhagic disease of the newborn)

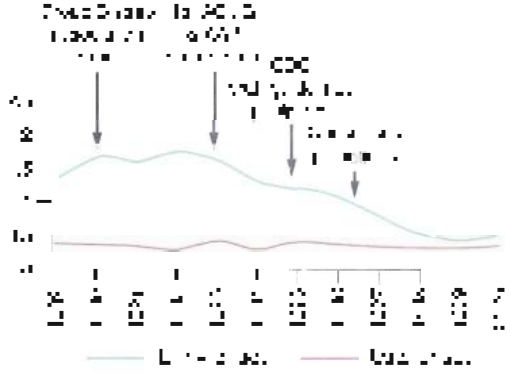


Figure 22.6

Screening for group B *Streptococcus* to prevent early-onset disease

Jaundice and prevention of kernicterus

Figure 22.7 [illegible]

[illegible]

[illegible]

[

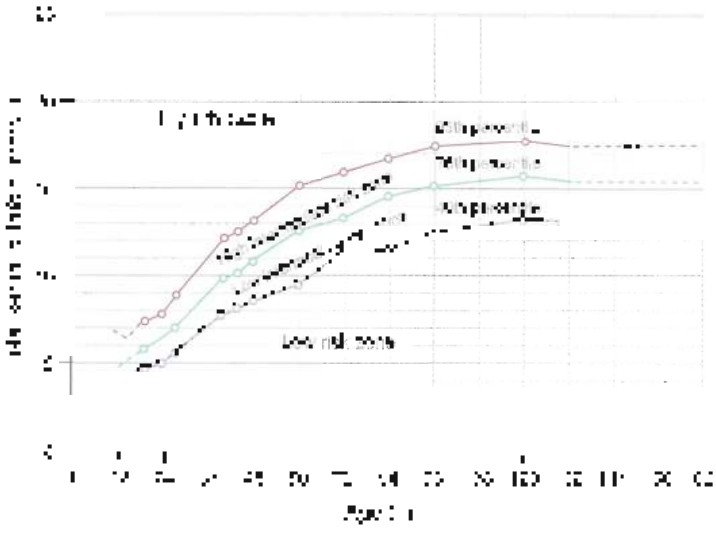


Figure 22.8 [illegible] From Bhutani VK, [illegible] 1999. Predictive [illegible] hour specific [illegible] significant [illegible] and near [illegible] with [illegible] 103, ages [illegible]

[illegible]

Screening for cardiac disease

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

Infant feeding

Breastfeeding

[illegible]

Formula feeding

Table 9.2 [illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]

Care of the ill term newborn baby

Birth trauma

Subgaleal haemorrhage

Erb palsy

Figure 9.8 Erb palsy.

Fractured clavicle

Phrenic nerve palsy

Meconium aspiration syndrome

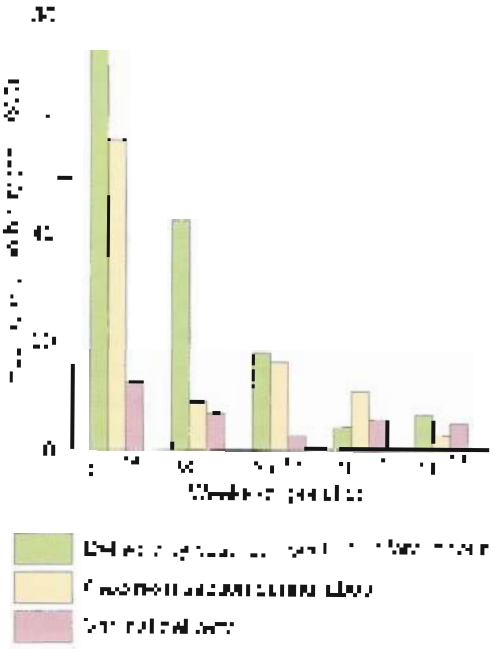


Fig. 9.3.18 Incidence of persistent pulmonary hypertension of the newborn (PPHN) in relation to gestational age. Data from Walsh-Sukys MC, Tyson JE, Wright LL, et al. Persistent pulmonary hypertension of the newborn in the era before nitric oxide: practice variation and outcomes. Pediatrics 2000; 105: 14–20.

of resuscitation. Any baby who requires intubation and ventilation at birth should be assessed for PPHN.

The baby with severe PPHN should be managed in a neonatal unit with facilities for ventilation and inhaled nitric oxide therapy. Ventilation should be gentle, with the aim to keep the pCO2 between 4.5 and 6.0 kPa. Hypocarbia should be avoided as it may cause cerebral vasoconstriction and brain damage. Hypoxia and acidosis should also be avoided as they will worsen pulmonary vascular constriction. Hypoxia and acidosis may also cause pulmonary capillary damage leading to pulmonary oedema, excess surfactant inactivation and pneumothorax. Muscle paralysis and sedation should be used to prevent the baby fighting the ventilator. Inhaled nitric oxide is a selective pulmonary vasodilator that relaxes the smooth muscle in the pulmonary vessels, thereby reducing pulmonary vascular resistance and improving oxygenation. Inhaled nitric oxide is usually started at a dose of 20 parts per million (ppm) and then weaned down to 5 ppm as the baby's oxygenation improves. Inhaled nitric oxide is usually given for 4 days, but can be given for longer periods if necessary.

Persistent pulmonary hypertension

The term persistent pulmonary hypertension of the newborn (PPHN) is preferred to persistent fetal circulation because it better describes the pathophysiology of the condition. PPHN occurs when the baby's pulmonary vascular resistance remains high after birth, so that pulmonary blood flow is reduced and the pulmonary capillaries are underperfused. This leads to hypoxia and acidosis. Hypoxia and acidosis cause further pulmonary vasoconstriction, creating a vicious circle. Any baby who requires resuscitation at birth should be assessed for PPHN. PPHN can occur as a primary disorder or as a consequence of respiratory infections (such as GBS pneumonia), respiratory hypoplasia or meconium aspiration syndrome. The baby is usually hypoxic in both room air and when ventilated. There is normal pulmonary hypertension at birth, so left shunt at atrial and ductal level and cyanotic congenital heart disease must be differentiated. Nitric oxide is the only medication licensed for PPHN and is now the therapy of choice. Sildenafil, a phosphodiesterase inhibitor, is also used.

Hypoxic ischaemic encephalopathy

Hypoxic ischaemic encephalopathy (HIE) is the term used to describe the brain damage that occurs when the baby's brain is deprived of adequate oxygen and blood flow around the time of birth. HIE is a common cause of:

- neonatal seizures
- cerebral palsy
- developmental delay
- learning difficulties
- behavioural problems.

The diagnosis of HIE should be suspected in babies who have had a significant hypoxic event around the time of birth and who subsequently develop encephalopathy. Encephalopathy is characterized by altered consciousness, seizures, abnormal tone, abnormal reflexes and abnormal respiratory effort. Babies with HIE may also have multiorgan dysfunction, including renal failure, hepatic dysfunction, cardiomyopathy and coagulopathy. Hypoxic ischaemic encephalopathy is graded as mild, moderate or severe, depending on the severity of the clinical signs. Moderate and severe HIE are associated with long-term neurological disability, and severe HIE is associated with a high mortality. Therapeutic hypothermia is the only treatment that has been shown to improve outcome in babies with moderate to severe HIE. Cooling should be started within 6 hours of birth and continued for 72 hours. Rewarming should be slow, over a further 6 hours. Cooling is usually achieved by placing the baby on a cooling mattress. Alternatively, the baby can be cooled by selective head cooling with a cooling cap and a low dose infusion of phenobarbital. Cooling should be carried out in a unit with experience of therapeutic hypothermia and with facilities for continuous electroencephalography (EEG) monitoring. Cooling is not without risks and should be withheld from babies with major congenital abnormalities, coagulopathy or severe cardiomyopathy. Cooling should be discontinued if the baby develops a severe bleeding disorder or severe cardiomyopathy. Cooling should also be discontinued if the baby develops severe pulmonary hypertension.

Management of the preterm infant

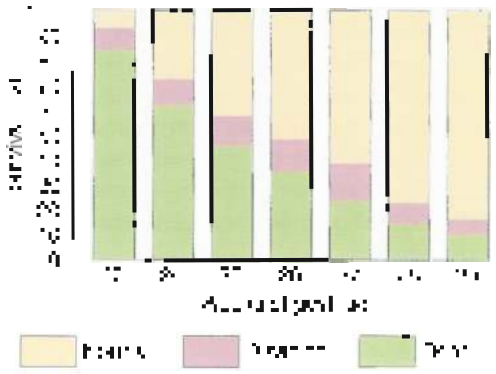


Figure 22.11

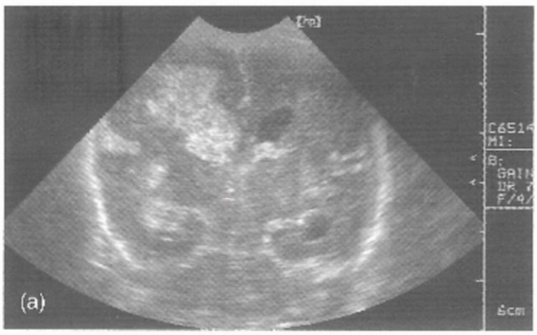
Respiratory distress syndrome, chronic lung disease

Figure 22.12

Preterm brain injury

Necrotizing enterocolitis

Key Points



Additional reading and website resources

Appendix 1

Medico-legal issues

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Breach of duty

Records

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Cardiotocography tracings

[illegible]

Assess and intervene

[illegible]

Timing of intervention

Appropriate seniority

Protocols

Training and skills drills

Consent

Record retention

Causation

- [illegible]

[illegible]

1. [illegible]
2. [illegible]
3. [illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]

[illegible]

Appendix 2

Ethics in obstetric practice

Index