CHAPTER 1 Early pregnancy bleeding and miscarriage

Spontaneous loss of a pregnancy before 24 weeks’ gestation.

Background and prevalence

- Miscarriage in early pregnancies occurs in 10–20% of pregnancies.
- Biochemical miscarriage – by measuring β-hCG at a stage when the woman is unaware that she is pregnant, up to 30% of pregnancies are found to miscarry.
- Approximately 50% of women with bleeding in early pregnancy have a miscarriage.
- Miscarriage risk is reduced in women with continuing pregnancy-associated vomiting.
- Most non-recurrent miscarriages are caused by abnormalities in the embryo; e.g., chromosomal abnormalities, genetic abnormalities, defects in the development of the placenta or embryo.
- The risk of miscarriage increases with increasing maternal age:
  - 10% in women aged < 30 years.
  - 15–20% in women aged 35–39 years.
  - > 50% in women aged > 45 years.
- Risk of miscarriage reduces with increasing gestational age, with up to 75% of miscarriages occurring before 12 weeks’ gestation.

Risk or complications

- Psychological complications – grief, anxiety, or depression. Risk of more intense or longer-lasting distress if the woman has:
  - Strongly desired the pregnancy.
  - Waited a long time to conceive.
  - History of miscarriage or other pregnancy.
  - Miscarriage later in the pregnancy.
  - Limited social support.
  - History of difficulty coping with distressing situations.

Be aware of the psychological sequelae associated with pregnancy loss and provide support, follow-up, and access to formal counselling when necessary.

Differential diagnosis – bleeding in early pregnancy

Uterine causes

- Period of amenorrhoea/positive pregnancy test.
- Pain and/or bleeding.
- Threatened miscarriage – scanty vaginal bleeding, varying from a brownish discharge to bright red bleeding. Lower abdominal cramping pain or lower backache usually develops after the onset of bleeding. Tenderness of the abdomen or pelvis may be present. Cervical os is closed.
- Inevitable miscarriage – same symptoms as threatened miscarriage but more severe. Internal cervical os is open or pregnancy tissue may be found to be coming through the os.
- Complete miscarriage – resolving symptoms and signs of a miscarriage.
- Delayed miscarriage – may present with resolving symptoms of pregnancy in women with no pain or bleeding. Fetal heartbeat is undetectable and the uterus may be small for dates. May be found incidentally during a routine ultrasound assessment of pregnancy.

Extrauterine causes

- Ectopic pregnancy:
  • Cardiovascular shock.
  • Fainting.
  • Shoulder-tip pain.
  • Abdominal pain.
  • Abdominal tenderness on examination.
  • Cervical tenderness.
- Molar pregnancy:
  • Absent fetal heart sounds.
  • Heavy and prolonged bleeding.
  • Symptoms of pregnancy are exaggerated.
  • Uterus is large for dates.
  • Vesicles may be passed vaginally.
- Intrauterine pregnancy.

Clinical features

Inevitable – when bleeding is associated with an open cervix. However, pregnancy may continue successfully in women diagnosed to have an open cervix; therefore, aim for expectant management.

Threatened – vaginal bleeding and/or pain with viable pregnancy and closed cervix.

Incomplete – when the pregnancy tissue has not been expelled from the uterus and bleeding may or may not be present.

Complete – when all the pregnancy tissue has been expelled and bleeding has stopped.

Delayed/missed miscarriage/anembryonic pregnancy/early fetal demise – when the pregnancy has failed but there is no bleeding, and pregnancy tissues have not been expelled.

Pregnancy of unknown location – no identifiable pregnancy on scan, with positive hCG.

Fetal loss – previous CRL measurement with subsequent loss of fetal heart activity.

Empty sac – gestational sac with absent or minimal structures.

Biochemical pregnancy loss – pregnancy not located on the scan.

Delayed/missed miscarriage/anembryonic pregnancy/early fetal demise.
CHAPTER 1  Early pregnancy bleeding and miscarriage

TAS/TVS – assess the location and viability of the pregnancy

TAS – enlarged uterus or other pelvic pathology; e.g., fibroids or ovarian cyst, or if TVS is unacceptable.

Pregnancy of unknown location

– no signs of either intra- or extrauterine pregnancy or retained pregnancy tissue in a woman with a positive pregnancy test. Incidence: 8–10%.

No visible fetal heartbeat on TVS – uncertain viability

Pregnancy of known location

Intrauterine pregnancy (IUP)

Ectopic pregnancy

Visible fetal heartbeat – viable IUP

No visible fetal heartbeat on TVS – uncertain viability

If the fetal pole is not visible, measure the mean gestational sac diameter (MSD).

CRL < 7.0 mm

CRL ≥ 7.0 mm

MSD < 25.0 mm

MSD ≥ 25.0 mm

Perform a second scan a minimum of 7 days after the first scan.

• Diagnosis of miscarriage using one USS is not 100% accurate; there is a small chance that the diagnosis may be incorrect, particularly at very early gestational ages.
• Do not use gestational age from the LMP alone to determine whether a fetal heartbeat should be visible, as LMP may not give an accurate representation of gestational age because of variability in the menstrual cycle.

• Seek a second opinion.
• Delayed miscarriage.

When diagnosing complete miscarriage on USS, in the absence of a previous scan confirming an IUP, be aware of the possibility of ectopic pregnancy.

Viable IUP

Complete miscarriage.

Incomplete/missed miscarriage.
SECTION 1 Early pregnancy care

**Outpatient** – refer women with a threatened or suspected incomplete/delayed miscarriage to an early pregnancy assessment unit (EPAU) for confirmation of the diagnosis.

**Inpatient** – refer women with severe pain or bleeding, or who are shocked for immediate admission to hospital.

### General measures

- **Threatened miscarriage** (vaginal bleeding and a confirmed viable IUP):
  - If her bleeding gets worse, or persists beyond 14 days, return for further assessment.
  - If the bleeding stops, start or continue routine ANC.
- **Medical/expectant management** – can be offered only in units where women can access 24-hour telephone advice and emergency admission, if required. Protocols with selection criteria, therapeutic regimens, and arrangements for follow-up should be in place.
- **Encourage patient choice** – associated with positive quality-of-life outcomes.
- **Screen for infections** – including Chlamydia trachomatis, in women undergoing SMM.
- **Histology** of the tissue obtained at the time of miscarriage to confirm pregnancy and to exclude ectopic pregnancy or unsuspected GTD.
- **NICE** – anti-D rhesus prophylaxis at a dose of 250 IU (50 µg) to all rhesus-negative women who have a surgical procedure to manage an ectopic pregnancy or a miscarriage.
- **NICE** – do not offer anti-D rhesus prophylaxis to women who:
  - Receive solely medical management for an ectopic pregnancy or miscarriage.
  - Have a threatened miscarriage.
  - Have a complete miscarriage.
  - Have a pregnancy of unknown location.

### Service provision

Early pregnancy loss accounts for over 50,000 admissions in the UK annually. Outpatient EPAU service – hospital admission can be avoided in 40% of women, with a further 20% requiring a shorter hospital stay.

**NICE** – EPAU services should be:

- **Available** – 7 days a week.
- **Accessibility** – direct access for GPs and selected patient groups. EPAU should accept self-referrals from women who have had a recurrent miscarriage or a previous ectopic or molar pregnancy. All other women with pain and/or bleeding should be assessed by an HCP (GP, A&E doctor, midwife, or nurse) before referral.
- **Appropriate setting** – ideally sited in a dedicated area.
- **Appropriate staff** – HCPs competent to diagnose and care for women with pain and/or bleeding in early pregnancy, trained in sensitive communication and breaking bad news.
- **Diagnostic and therapeutic algorithms**.
- **US equipment and staff appropriately trained**.
- **Laboratory facilities** – rhesus antibody testing, serial β-hCG with results available within 24 hours, progesterone estimation (NICE – only β-hCG).
- **Standardized information leaflets, referral, and discharge letters, with clear plans for follow-up**.
- **Access to formal counselling**.
- **Ensure that a system is in place to enable women referred to their local EPAU to attend within 24 hours if the clinical situation warrants this**.
CHAPTER 1
Early pregnancy bleeding and miscarriage

First-line option – expectant management (NICE)

A management approach in which treatment is not administered, with the aim of seeing whether the condition will resolve naturally.

NICE – use expectant management for 7–14 days as the first-line management strategy for women with a confirmed diagnosis of miscarriage.

- **Advantages:**
  - Avoids hospitalization and risks of surgery.
  - Reduction in clinical pelvic infection rates.
- **Risks:** Symptoms may take several weeks to resolve and, sometimes, surgical intervention is required for failed cases.
- Most women will need no further treatment.
- Provide oral and written information about what to expect throughout the process, advice on pain relief, where and when to get help in an emergency, and further treatment options.

- Factors that affect the success rates:
  - Type of miscarriage (delayed or incomplete).
  - Duration of follow-up.
  - Serum progesterone levels.
  - Highly effective in incomplete miscarriage.
  - Success rates for delayed miscarriage for expectant vs surgical management are 28% and 81% and for incomplete miscarriage, the rates are 94% and 99%.
  - Retained pregnancy tissue – genuine retained pregnancy tissue is less likely to be confirmed histologically when USS shows heterogeneous shadows with a maximum AP diameter of ≤ 15 mm. These could include some cases of incomplete miscarriage but are best managed conservatively as there is a trend towards a lower complication rate compared with surgical management.

- Resolution of bleeding and pain during 7–14 days suggests complete miscarriage. Advise a urine pregnancy test after 3 weeks.
  - Negative – complete miscarriage.
  - Positive – return for individualized care.

- If after the period of 7–14 days the bleeding and pain:
  - Have not started (miscarriage has not begun).
  - Are persisting and/or increasing (incomplete miscarriage).
  - Repeat scan.
  - Further treatment options – continued expectant, medical, or surgical management.

- If the woman opts for continued expectant management, review at a minimum of 14 days after the first follow-up appointment.

- Explore management options other than expectant management if:
  - Woman is at increased risk of haemorrhage (late first trimester).
  - History of adverse and/or traumatic experience associated with pregnancy (stillbirth, miscarriage, or antepartum haemorrhage).
  - Increased risk from the effects of haemorrhage (coagulopathies or is unable to have a blood transfusion).
  - There is evidence of infection.

- Failed expectant management or Expectant management not acceptable

- Medical or surgical management
**Medical management**

- Offer medical management to women with a confirmed diagnosis of miscarriage if expectant management is not acceptable. NICE
- Do not offer mifepristone as a treatment for missed or incomplete miscarriage.
- Offer vaginal/oral misoprostol for missed or incomplete miscarriage.
- Missed miscarriage – single dose of 800 µg of misoprostol.
- Incomplete miscarriage – single dose of 600 µg of misoprostol. (800 µg can be used as an alternative to allow alignment of treatment protocols for both missed and incomplete miscarriage).
- Offer all women pain relief and antiemetics as needed.
- Inform what to expect, including the length and extent of bleeding and the potential side effects of treatment, including pain, diarrhoea, and vomiting.

**Advantages:**
- Averts the risks of operation and GA.
- Feeling of being ‘more in control’.
- Outpatient basis.
- Cost saving.
- Reduction in clinical pelvic infection (7% vs 13%).
- Risks of increased pain and bleeding, persistent symptoms, and treatment failure requiring surgical evacuation.
- Bleeding may continue for up to 3 weeks.
- Success rate ~ 84% of cases.
- High-dose misoprostol.
- Prostaglandins administered vaginally.
- Clinical follow-up without routine USS.
- Delayed miscarriage – success rates are decreased.

- Bleeding commences and resolution of pain and bleeding – perform urine pregnancy.
- Pregnancy test negative – complete miscarriage.
- Pregnancy test positive – exclude molar or ectopic pregnancy.

- If bleeding has not started 24 hours after treatment, worsening symptoms – incomplete miscarriage.

**Surgical management**

- Suction curettage – under local anaesthesia or sedation. Associated with statistically significantly decreased blood loss, less pain, and shorter duration of procedure compared to use of metal curette.
- Routine use of a metal curette after suction curettage is not required.
- Oxytocin use is associated with significantly less blood loss.
- Complications – perforation, cervical tears, intrauterine adhesions, intra-abdominal trauma, and haemorrhage.
- Manual vacuum aspiration technique under systemic analgesia is an option.
- Offer a choice of:
  - Manual vacuum aspiration under local anaesthetic in an outpatient setting.
  - Surgical management in a theatre, under GA.

**Advantages:**
- Symptoms resolve rapidly but has the disadvantage of risks associated with an operation.

**Indications:**
- Women’s preference.
- Where other treatments have failed.
- A medical indication (< 10% of women who miscarry).
- Excessive bleeding.
- Haemodynamic instability.
- Infected retained tissue.
- Suspected GTD.
- Retained pregnancy tissue despite medical/expectant treatment.

Non-surgical methods are associated with longer and/or heavier bleeding and a 15–50% possibility of eventually needing surgical evacuation for clinical need or the woman’s preference. However, non-surgical methods are also associated with a lower risk of infection compared with surgery.
CHAPTER 1  Early pregnancy bleeding and miscarriage

Consent – surgical evacuation of the uterus for early pregnancy loss
(Surgical management of miscarriage)

Discuss
• Explain – removal of early pregnancy tissue from the uterus, usually with suction. Cervix may need to be dilated to allow emptying of the uterine contents.
• Intended benefit – to treat an incomplete or delayed miscarriage, or retained placental tissue.
• Discuss alternative treatment options: medical and expectant management, particularly for women without an intact sac.
• If tissue is sent for histology, the reasons (to exclude ectopic or molar pregnancy) should be explained.
• Form of anaesthesia.

Extra procedures
• That may become necessary – laparoscopy or laparotomy to diagnose and/or repair organ injury, e.g., uterine trauma, perforation.

Follow-up
• Assess woman’s psychological wellbeing and offer counselling, if appropriate. Grief, anxiety, and depression are common following miscarriage. Grief following miscarriage is comparable in nature, intensity, and duration to grief reactions in people suffering other types of major loss. Distress is commonly at its worst 4–6 weeks after a miscarriage and may last 6–12 months.
• Menstruation can be expected to resume within 4–8 weeks of the miscarriage, but may take several cycles to re-establish a regular pattern.
• For women who wish to become pregnant – they can do so as soon as they feel psychologically and physically ready.
• Offer pre-conception advice.
• For women who do not wish to become pregnant – advise on contraception immediately after the miscarriage.

Guideline comparator
• Anti-D immunoglobulin (RCOG) - non-sensitized rhesus (Rh)-negative women should receive it in cases of:
  • Ectopic pregnancy.
  • All miscarriages > 12 weeks of gestation (including threatened).
  • All miscarriages where the uterus is evacuated (medically or surgically).
  • It should only be given for threatened miscarriage under 12 weeks gestation, when bleeding is heavy or associated with pain.
  • It should be given in any case where there is clinical doubt.

What not to do
• Routine antibiotic prophylaxis prior to surgical uterine evacuation.
• Anti-D in spontaneous miscarriages < 12 weeks of gestation.
• Mifepristone as a treatment for missed or incomplete miscarriage.
• Routine use of a metal curette after suction curettage.
• NICE – anti-D rhesus prophylaxis to women who:
  • Receive solely medical management for an ectopic pregnancy or miscarriage.
  • Have a threatened miscarriage or a complete miscarriage.
  • Have a pregnancy of unknown location.

CHAPTER 2 Care of patients requesting termination of pregnancy

Prevalence and incidence
- About one third of women have a TOP by the age of 45 years in the UK.
- Most commonly performed gynaecological procedure in the UK, with around 200,000 terminations performed annually in England and Wales and around 11,500 in Scotland.
- Over 98% of TOPs in the UK are undertaken because of the risk to the mental or physical health of the woman or her children. Remaining done for fetal abnormality.

Service provision
- The earlier in the pregnancy a TOP is performed, the lower the risk of complications.
- Service arrangements should be such that:
  - Referral to abortion services should be made within 2 days.
  - Assessment appointment should be within 5 days of referral.
  - Offer abortion procedure within 5 working days of decision to proceed.
  - Total time from seeing the abortion provider to the procedure should not exceed 10 working days.
- Care pathways for additional support – access to social services and access to services for women with special needs.
- Information and support for those who consider but do not proceed.
- Maintain confidentiality.
- May be managed on a day-case basis.
- Inpatient beds must be available for women who are unsuitable for day case (up to 5%).
- Should be cared for separately from other gynaecological patients.
- Second-trimester TOP – must be cared for by experienced midwife or nurse.

History
- Take detailed history to identify those who require more support in decision making (such as psychiatric history; poor social support, or evidence of coercion).
- Assess risk for STIs and screening for Chlamydia.

Investigations
- Haemoglobin.
- ABO and rhesus blood groups.
- Screening for red cell antibodies.
- HIV, hepatitis B and C, and haemoglobinopathies – indicated in the light of clinical features, individual risk factors, or local prevalence.
- Cervical smear.
- USS – not essential prerequisite in all cases. Undertake where gestation is in doubt or extrauterine pregnancy is suspected.

Prevention of infective complications
- Ideally, test for lower genital tract organisms with treatment of positive cases.
- Minimum – antibiotic prophylaxis.
- Regimens for peri-TOP prophylaxis:
  - Metronidazole, 1 g rectally at the time of TOP plus doxycycline, 100 mg orally BD for 7 days, commencing on the day of abortion.
  - Metronidazole, 1 g rectally at the time of TOP plus azithromycin, 1 g orally on the day of TOP.
  - Metronidazole, 1 g rectally or 800 mg orally, prior to or at the time of TOP for women tested negative for Chlamydia.

Information to women
- Adapt national information to reflect local circumstances.
- Possible complications:
  - Haemorrhage requiring blood transfusion – 1/1000 in early gestation increasing to 4/1000 in gestation beyond 20 weeks.
  - Uterine perforation 1–4/1000.
  - Cervical trauma – no greater than 1/100.
  - Failed abortion – < 1/100 (surgical = 2.3/1000; medical = 1–14/1000).
  - Need for further intervention (surgical intervention following medical termination or repeat evacuation following surgical termination) – < 5%.
  - Post-abortion infection – 10%.
- No proven associations between induced abortion and subsequent ectopic pregnancy, placenta praevia, or infertility.
- May be associated with a small increase in the risk of subsequent PTD, which increases with number of abortions.
- Termination regimens containing misoprostol are not licensed. Inform women if a prescribed treatment is unlicensed.
CHAPTER 2  Care of patients requesting termination of pregnancy

Method of TOP

Medical management

- Mifepristone 200 mg and misoprostol.

Surgical management

- Consider cervical preparation in all women.
- After 14 weeks’ gestation, dilatation provides superior dilatation to medical methods; however, misoprostol is an alternative method up to 18 weeks.

Early medical abortion ≤ 63 days

- ≤ 56 days: mifepristone 200 mg orally, followed 24–48 hours later by misoprostol 800 μg vaginally, orally/orally/vaginally.
- ≤ 49 days: mifepristone 200 mg orally, followed 24–48 hours later by misoprostol 400 μg orally.
- 50–63 days: a second dose of misoprostol 400 μg may be given orally/vaginally.
- It is safe for woman to leave the abortion unit following misoprostol administration to complete the abortion at home.

First trimester vacuum aspiration

- < 7 weeks – vacuum aspiration but associated with a higher risk of failure.
- 7–14 weeks – vacuum aspiration followed by medical evacuation (up to 18 weeks’ gestation).

Gestational age > 14 weeks

- Dilatation and evacuation with cervical preparation is safe and effective when undertaken by specialist practitioners.
- Continuous USS guidance during the procedure is recommended.
- Use of medical methods up to 18 weeks is acceptable, but surgical evacuation may be required.
- Misoprostol 400 μg vaginally 3 hours/sublingually 2–3 hours prior to surgery.

service standards

- Minimum – offer one of the recommended methods for each gestation band.
- Ideally – offer a choice of recommended methods for each gestation band.

- After 14 weeks’ gestation, dilatation provides superior dilatation to medical methods; however, misoprostol is an alternative method up to 18 weeks.
Aftercare

- Analgesia.
- Routine histopathological examination of tissue is unnecessary.
- Rhesus prophylaxis.
- Written account of the warning symptoms.
- 24-hour telephone helpline.
- Urgent clinical assessment and emergency admission when necessary.
- Discharge letter that includes sufficient information.

Follow-up

- No need for routine follow-up if successful abortion has been confirmed at the time of the procedure.
- Women having medical TOP, in whom successful abortion has not been confirmed at the time of the procedure – offer follow-up to exclude continuation of pregnancy.
- Routine follow-up if woman wishes.
- Refer for further counselling if necessary.
- Do not scan routinely to screen women for incomplete abortion. Decide to evacuate the uterus following incomplete abortion based on clinical signs and symptoms and not on USS appearance.
- Contraception – discuss, offer, and initiate.
- IUCD can be inserted immediately following a first- or second-trimester TOP.
- Sterilization can be safely performed at the time of TOP. However, combined procedures are associated with higher rates of failure and of regret on the part of the woman.

Method of termination of pregnancy based on gestational age

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<th>Gestation in weeks</th>
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<tbody>
<tr>
<td>Medical termination with mifepristone and prostaglandin</td>
<td>Prostaglandin</td>
<td>Single dose &lt; 49 days</td>
<td>Prostaglandins – multiple doses</td>
<td>Surgical termination of pregnancy</td>
<td>Suction aspiration</td>
<td>Strict protocols</td>
<td>Suction termination</td>
<td>Experienced surgeon</td>
<td>Dilatation and evacuation</td>
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CHAPTER 2 Care of patients requesting termination of pregnancy

**Misoprostol**
- **Mechanism**: a synthetic prostaglandin E1 analogue that causes cervical softening and dilatation and uterine contractions.
- **Indications**:
  - Medication TOP.
  - Medical management of miscarriage.
  - Induction of labour in cases of intrauterine death.
  - Cervical ripening before surgical procedures – first-trimester surgical abortion, second-trimester D&E, hysteroscopy.
  - Treatment of postpartum haemorrhage.
  - Cervical ripening and induction of labour for a viable fetus.
  - To treat or prevent stomach and duodenal ulcers.
- **Doses**: 200–800 μg oral, vaginal, sublingual, buccal, or rectal.
- **Side effects**: nausea, vomiting, diarrhoea, febrile, general feeling of being unwell, headaches, rupture of the uterus, skin problems, toxic epidermal necrolysis, urticaria, vasovagal reaction such as hot flushes, dizziness or chills, toxic shock syndrome.

**Mifepristone**
- **Mechanism**: anti-progesterone. It works by blocking the effects of progesterone.
- **Indications**:
  - Medical TOP.
  - Induction of labour in cases of IUD.
- **Dose**: 200 mg tablets. Used in combination with prostaglandins such as misoprostol.
- **Side effects**: diarrhoea, nausea, uterine contractions or cramps, vomiting, vaginal bleeding, infection, stomach cramps.
- **Uncommon**: hypersensitivity reactions, lowered blood pressure, skin rash or rashes, fever, general feeling of being unwell, headaches, rupture of the uterus, skin problems, toxic epidermal necrolysis, urticaria, vasovagal reaction such as hot flushes, dizziness or chills, toxic shock syndrome.

**Know your drug**

**What not to do**
- Routine crossmatch.
- Routine USS.
- Routine surgical evacuation of the uterus following medical TOP.
- Surgical evacuation – routine use of oxytocin/ergometrine for prophylaxis; sharp curettage.
- Routine USS to screen women for incomplete abortion.

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1. The Care of Women Requesting Induced Abortion. RCOG Evidence-Based Clinical Guideline No. 7, 2011.