Diagnosis and Management of Miscarriage Guideline

TARGET AUDIENCE	Secondary care and Primary care
PATIENT GROUP	All women with a positive pregnancy test up to 11+6 weeks of gestation.

Clinical Guidelines Summary

The Lanarkshire Early Pregnancy Assessment Service (EPAS) supports all women with early pregnancy concerns, up to a gestation of 11+6 weeks. This guideline is relevant for the investigation, management and support for women with a positive pregnancy test and symptoms of bleeding and/or pain.

Women contacting the service will be triaged to receive telephone advice or review in EPAS.

Those women attending EPAS will be assessed by history, examination and where necessary given an ultrasound examination.

Transabdominal scan will be offered first and if necessary transvaginal scan performed. Serum b-hcg measurements are only performed if there is suspected ectopic, empty uterus or pregnancy of unknown location.

Follow-up scans may be required.

All women with suspected miscarriage should have a second scan on the same day by a different operator or should receive a return appointment at a later date for confirmation scan.

If miscarriage is confirmed, conservative, medical or surgical treatment under general or local anaesthetic should be discussed with the woman and her preferences accommodated where possible. Every effort should be made to accommodate those women wishing surgical management under general anaesthetic on elective maternity lists or in emergency maternity theatre 12, rather than CEPOD.

Follow-up support for any loss should be offered.

For the purposes of this guideline, a senior clinician is defined as an EPAS Specialty Doctor, Consultant, ST6 or 7 or senior EPAS midwife.

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INTRODUCTION to LANARKSHIRE EPAS SERVICE

The Lanarkshire Early Pregnancy Assessment Service (EPAS) offers advice, assessment and treatment to patients with problems in early pregnancy, up to 11 + 6 weeks of gestation. These services are provided by a dedicated team of healthcare professionals, with the necessary expertise to diagnose early pregnancy problems and who have training in sensitive communication.

REFERRAL CRITERIA

EPAS accepts self-referrals from patients and also other healthcare professionals including GPs, doctors, midwives and sonographers. Often referrals are made from private facilities. All referrals will be triaged by the early pregnancy specialist midwives to receive either telephone or face-to-face advice.

The referral criteria are:

- Patients with pain and/or bleeding up to 11 + 6 weeks of gestation, with a positive pregnancy test
- Asymptomatic patients who fit the criteria for an early viability scan, see Viability Scans In Early Pregnancy: Referral Guidance.

Clinical priority will be given to new patients and to patients with signs and symptoms suggestive of ectopic pregnancy. In situations where resources are limited, elective and routine workload may be cancelled to allow clinical prioritisation of symptomatic patients who have not had any prior ultrasound scan. This may result in temporary suspension of viability scans, and should be escalated to senior management.

Patients presenting with *painless* bleeding who are less than 6 weeks based on their last menstrual period (LMP), with a known and certain LMP date, and who have no risk factors for ectopic pregnancy, should be advised to repeat their high sensitivity pregnancy test after 7 days and to contact EPAS if it remains positive. If the home pregnancy test is negative then sadly the pregnancy has miscarried. Patients should be encouraged to report new or worsening symptoms and they should be reassessed, with consideration given to diagnoses other than miscarriage. Medical review by the gynaecology team would be indicated in this scenario, with referral to the gynecology registrar.

Women with mild, crampy lower abdominal pain should be advised to take paracetamol and observe the effect. If worsening, they should be invited for review.

Patients who seek early pregnancy advice regarding pain or bleeding on more than one occasion within 24 hours should be advised to attend the same day for medical review.

EPAS is unable to provide ultrasound scans to confirm the dates of an early pregnancy in asymptomatic patients. Reassurance or viability scans will only be offered to patients who meet the referral criteria (see Viability Scans In Early Pregnancy: Referral Guidance).

INITIAL ASSESSMENT

All patients referred to EPAS will be triaged (by telephone) by EPAS midwives who are experienced in assessing early pregnancy symptoms and providing advice or arranging further assessment where necessary. Mild bleeding would be considered spotting or bleeding lighter than a period. Moderate bleeding would be considered as heavy as a period, soaking through a pad every two to four hours. Heavy bleeding would be considered heavier than a period, soaking though pads more frequently than two-hourly.

Those patients who require further assessment should be evaluated in EPAS where there are dedicated facilities to perform early pregnancy ultrasound scans, appropriate measurement and interpretation of serum hCG and confirming Rhesus status.

Patients presenting out of hours should be assessed in the Maternity Triage when EPAS is closed.

Unstable patients should attend ED for resuscitation, and will be assessed by medical staff there:

- A full history should be obtained including current symptoms, with consideration given to risk factors for ectopic pregnancy (previous ectopic, IUCD in situ, previous STIs).
- The first date of the last menstrual period should be recorded along with the date of the first positive pregnancy test and the date of any negative test.
- Assess general wellbeing and record observations.
- Perform a VTE risk assessment for all patients.

- Perform a pelvic and/or speculum examination if indicated to assess for incomplete miscarriage (history of significant vaginal bleeding).
- When indicated, arrange an ultrasound scan to assess the early pregnancy at the first available appointment; use clinical judgement to arrange timeous assessment – patients with moderate to severe pain or bleeding should have a medical assessment in EPAS or gynaecology within 4 hours or sooner.
- **Serum hCG should only be performed FOLLOWING USS if required for assessment of pregnancy of unknown location, to direct management of ectopic pregnancy, and for suspected molar pregnancy**.

ULTRASOUND SCAN

An ultrasound scan may be offered to assess the location of the pregnancy, presence of fetal pole and presence of the fetal heartbeat (FH). This scan will be performed by a healthcare professional who is experienced in early pregnancy scanning, and who is able to identify an ectopic pregnancy.

The EPAS uses transabdominal (TA) and transvaginal (TV) ultrasound scan to accurately assess the early pregnancy, however TV scanning offers additional detail for pregnancies less than 10 weeks, so should be offered as routine when no heartbeat is visible within the fetal pole. Patients should be advised at the time of telephone consultation that a TV scan will be offered. Where this is unacceptable to patients, it should be explained that TA scanning has limitations and further USS may be necessary with longer time intervals before any diagnosis can be reached, with this discussion clearly documented in the Badgernet record.

When performing an USS to determine the viability of an intrauterine pregnancy, record the following:

- First look to identify a fetal heartbeat and measure the fetal crown-rump length (CRL). Retain an image of the CRL.
- If there is no visible heartbeat but there is a fetal pole, measure CRL and retain an image.
- If there is no fetal pole, record the presence or absence of a yolk sac and retain an image.
- Only measure the mean sac diameter (MSD), in three planes, if the fetal pole is not visible. The sac should be regular, eccentrically positioned in the endometrium with double/bright decidual ring. If the sac has no contents then label this as a possible gestational sac. Retain an image. Note that a pseudosac is a collection of fluid within the endometrial cavity with no double decidual ring. If there is only a collection of fluid, search for ectopic pregnancy.
- Record the location of the pregnancy and retain images in the longitudinal and transverse planes.
- Assess both adnexae and retain images.

- Assess for free fluid in the Pouch of Douglas, measure the deepest vertical pool and retain an image.

INTERPRETING SCAN FINDINGS

Patients with bleeding and a confirmed intrauterine pregnancy with a fetal heartbeat should be advised that

1. If the bleeding gets worse, or persists beyond 14 days, further assessment is required.
2. If bleeding stops, continue with routine scheduled antenatal care.

Where a regular intrauterine gestational sac (GS) is seen measuring <25mm, with a double decidual reaction present, but there is no fetal pole or yolk sac (YS), ectopic pregnancy remains unlikely and follow-up scan is required in 14 days (if ongoing symptoms interim scan can be in 7 days). In the meantime, ensure the patient has the relevant contact telephone numbers for further advice or medical review if required. **Serum hCG is not indicated in this scenario unless there are additional signs or symptoms that are suggestive of ectopic pregnancy and this should only be arranged following discussion with a senior clinician experienced in early pregnancy care.**

Where a regular intrauterine GS and YS is seen, the USS should be repeated in 14 days to assess viability.

Scans should not be repeated at intervals of less than 7 days unless clinically warranted.

A TA scan is accepted to diagnose missed miscarriage when the CRL measures >18mm or approximately 8 weeks of gestation and there is no visible heartbeat, where the views are clear and there is no diagnostic uncertainty. This should be confirmed by a second operator. If the first TA scan shows a CRL of <18mm and no FH, a TV scan should be offered. If TV scan is declined, repeat the TA scan in 14 days before reaching a diagnosis of missed miscarriage.

If an intrauterine pregnancy with visible heartbeat is identified on ultrasound scan by the on-call team, then there is no indication for a routine repeat EPAS scan, and the patient should be reassured and antenatal care should resume. It is essential that only medical staff who are qualified in early pregnancy scanning, with relevant RCOG SITMs/ATSMs/scanning modules should scan out of hours. Medical staff must complete the standard ultrasound report in Badger for any scan they perform and document the findings, retaining pertinent images for scanning into the Badger record (long and transverse views of the uterus, CRL or MSD, presence of yolk sac, both adnexae).

Additional points for clinicians:

- If hcg tracking has been commenced in ED or by the patient's GP and this is not indicated in the clinical scenario, refer to senior clinician/use own clinical judgement on whether the tracking should continue or be stopped.
- Do not use gestational age from LMP alone to determine if the fetal heartbeat should be see. The criteria should be based on CRL measurements.
- An empty uterus on ultrasound scan, in the absence of a previous scan confirming intrauterine pregnancy, must be treated as pregnancy of unknown location until confirmed otherwise. Serum hCG tracking should be arranged with follow-up arranged via EPAS until a definitive diagnosis is reached – see further clinical guidance on PUL / ectopic pregnancy.
- Women must always be offered a further ultrasound scan by a different practitioner to confirm the absence of the fetal heartbeat at all gestations, and this is encouraged before commencing any treatment for missed miscarriage.
- Scans performed in private facilities will be not be accepted by EPAS as the first scan and any diagnosis of miscarriage must be based on findings of the local EPAS scan department with appropriate follow-up scans.

DIAGNOSING MISCARRIAGE

Ultrasound scans will only be performed by healthcare professionals who are trained in the identification of early pregnancy problems. Medical staff will only be deemed competent in early pregnancy scanning on completion of the relevant RCOG training modules.

The diagnosis of miscarriage using one USS cannot be guaranteed to be 100% accurate and there is a small chance that the diagnosis may be incorrect, particularly at very early gestations. Patients should be advised that waiting for a repeat ultrasound scan (if the miscarriage cannot be confirmed by a second operator on the day) has no detrimental effects on the pregnancy and clinicians must not feel pressured into making any diagnosis if there is diagnostic doubt or clinical uncertainty.

Miscarriage is **diagnosed** on **transvaginal** USS when:

- There is no fetal heart activity and the CRL ≥7mm.
- There is an empty gestational sac with MSD ≥25mm (no yolk sac or fetal pole present).
- There is no evidence of a fetal pole with a heartbeat or a yolk sac at least 14 days following an initial scan showing a gestational sac <25mm but no yolk sac.
- There is no evidence of a fetal pole with a heartbeat 14 days following an initial scan showing a gestational sac (of any size) with a yolk sac.

- There is no evidence of a live intrauterine pregnancy where one has previously been seen.

A miscarriage can be diagnosed and management offered on a single visit if the above criteria are met, and a second practitioner qualified in miscarriage diagnosis is able to confirm the findings during the initial real time ultrasound scan, or during a further ultrasound scan. It is not acceptable to confirm the diagnosis based on images presented alone. If a second opinion is not available, or if the patient prefers, a further scan can be offered in 7-14 days to confirm the diagnosis.

If a miscarriage is suspected on a TA scan, then a TV scan should be offered to confirm the findings. If TV scanning is declined, then this should be clearly documented in the medical record and the patient should be advised regarding the limitations of TA scanning in the early pregnancy setting. A repeat confirmatory ultrasound scan should be arranged at least 14 days later if the CRL <18mm (8+0 weeks of gestation).

Patients who have inconclusive ultrasound scan findings should be advised regarding the possibility of miscarriage with onset of pain and bleeding whilst awaiting follow-up scan. Written information should be provided with clear advice regarding worsening or worrying symptoms, along with 24-hour contact telephone numbers to access advice and care if the clinical situation changes.

MANAGEMENT OF MISCARRIAGE

First trimester miscarriage is thought to occur in approximately 20% of pregnancies. In the majority of cases no cause is found, however it is believed that most are likely due to chromosomal abnormalities. The risk of miscarriage increases with age, and there are known associations with lifestyle factors (e.g. smoking) and medical co-morbidities (e.g. maternal diabetes).

- **THREATENED MISCARRIAGE**
  Threatened miscarriage is when a patient with a confirmed first- or second-trimester intrauterine pregnancy with a fetal heartbeat experiences vaginal bleeding and the cervical os remains closed on examination. In this situation, the pregnancy may be unaffected and continue, or may result in miscarriage.

  The management of threatened miscarriage depends on the severity of the vaginal bleeding and also the past obstetric history.

  If the bleeding has settled, or is now mild or moderate, and there is no sign of haemodynamic compromise:
  • A ultrasound scan should be offered within 24-48 hours to assess the early pregnancy.
  • If the patient is clinically well and in agreement, with a companion able to remain present, she can be discharged home with written information and contact details for

Maternity Triage in the event of heavy vaginal bleeding or unacceptable or severe pain, or if she is feeling unwell.

- She should be advised to contact 999 in the event of collapse.

In the event of severe bleeding:

- If the cervical os appears closed but the blood loss is severe or has been severe, then the patient should be admitted for observation.
- IV access should be obtained and bloods sent for FBC, coag and G&S / crossmatch depending on whether bleeding is ongoing and the Hb result.
- IV fluids should be commenced.
- If the patient is haemodynamically unstable or if the blood loss does not settle quickly then prompt senior medical input is necessary. Full A to E assessment is required alongside resuscitation. Examination to assess the cervix and passage of products is necessary. An ultrasound scan may be indicated to ascertain viability.

If an ultrasound scan confirms an intrauterine fetus with a heartbeat and the vaginal bleeding stops or is mild/moderate, then the patient can be reassured and advised to contact her community midwife to arrange a booking appointment.

- She should be advised to return to EPAS for medical assessment if her bleeding continues or persists beyond 14 days.
- If the patient has a previous history of miscarriage then vaginal micronised progesterone should be considered as per the Use of Progesterone Therapy in Pregnancy Guideline.

Anti D should be considered in cases of recurrent episodes of heavy bleeding as per local guidance.

- **INEVITABLE MISCARRIAGE**

Inevitable miscarriage is when a patient presents with pain and / or bleeding in the first- or second-trimester of pregnancy, and the cervical os is open.

The clinical diagnosis is reached based on symptoms and signs:

- Positive urinary pregnancy test
- Cramping pain
- Vaginal bleeding +/- clots
- Abdominal tenderness
- Open internal cervical os +/- passage of products of conception

Following assessment, patients should be sensitively advised that she appears to be miscarrying the pregnancy. Where products of conception are seen at the cervical os, they should be removed gently using sponge-holding forceps. The products of conception should be sent for histological analysis by pathology and consent should be sought for this, along with completion of a Sensitive Disposal form (SD7).

In the event of heavy vaginal bleeding it may be appropriate to administer ergometrine, syntometrine or misoprostol to control bleeding and reach resolution of the miscarriage. Surgical intervention may also be required if the bleeding is not controlled. In these clinical scenarios discussion with a senior clinician required.

If the patient is clinically stable then conservative management can be considered, as it is safe and effective. Patients opting for conservative management can be discharged home if well with appropriate advice on when to return for medical reassessment if the bleeding or pain increases. Written information should be provided along with contact telephone numbers for EPAS and Maternity Triage.

- **MISSED MISCARRIAGE**
  Missed miscarriage is where a patient presents with no or minimal symptoms and is found to have a missed miscarriage on ultrasound scan.

  Patients should be offered the choice of conservative, medical and surgical management following the diagnosis of a miscarriage.

  Use the gestation determined by ultrasound rather than the menstrual dates to assess eligibility for treatment.

  Anti D should be administered to non-sensitised Rhesus negative patients in accordance with current local guidelines.

  - **CONSERVATIVE**
    Conservative (or expectant) management for 7-14 days is recommended in NICE guideline as first-line management for patients with confirmed missed miscarriage.

    Alternative options should be explored if:
    •The patient is at increased risk of haemorrhage (e.g. she is in the late first-trimester) or
    •She has a previous adverse and/or traumatic experience relating to pregnancy loss (e.g. stillbirth, miscarriage or antepartum haemorrhage)
    •She is at increased risk from the effects of haemorrhage (e.g. if she has coagulopathies, is taking an anticoagulant, has anaemia or Hb <10g/dL or is unable to have a blood transfusion)
    •There is evidence of uterine infection with pyrexia or foul-smelling vaginal discharge

    Verbal consent should be taken by attending midwife and documented in Badger. Written information should be provided detailing the anticipated symptoms during the period of conservative management.

The normal miscarriage process will involve lower abdominal cramps and the onset of vaginal bleeding, which will normally begin to ease following passage of the miscarriage. If the symptoms become severe or persist beyond 14 days, then the patient should reattend EPAS for medical assessment.

A container should be provided if the patient wishes for histopathology testing of her miscarriage tissue, or if she wishes the hospital to arrange for sensitive disposal.

Patients who have bleeding as expected as part of conservative management process will require a high-sensitivity pregnancy test to take after 3 weeks, which will determine whether further assessment and treatment is required. If this is positive, or if there is no history of bleeding, she should contact EPAS for advice – if the miscarriage has not passed then the patient can consider a further 7-day period of conservative management as long as she remains clinically well, or alternatively she can opt for medical or surgical treatment. Those patients who have not passed the miscarriage after 28 days of conservative management should have a medical review to discuss ongoing treatment options.

Those who no longer wish to continue with conservative management can change to medical or surgical treatment at any stage during the process.

A patient will only require further ultrasound scan and medical review if:

1. There has been no pain or bleeding within the 14-day period of conservative management or
2. Pain and bleeding have persisted beyond 14 days, suggestive of incomplete miscarriage
3. The high-sensitivity urine pregnancy test is positive after 3 weeks.

- **MEDICAL**
  At home

Patients with missed miscarriage who meet the eligibility criteria may be offered medication to self-administer at home at a time that is convenient to them.

Assess eligibility criteria:

•Age > 18 years and no safeguarding or social concerns, and willing to attend for follow-up if required
•Gestation ≤9+6 weeks based on ultrasound scan
•A responsible adult at home on the day of misoprostol administration
•Within easy reach of the hospital, ideally with access to transport
•Hb >10g/dL

•No contraindications to the medications used during the treatment:
i. Adrenal, hepatic or renal impairment
ii. Severe asthma, or a history of hospitalisation for exacerbation of asthma within the preceeding 12 months
iii. Prosthetic heart valve or history of endocarditis
iv. Haemorrhagic disorders or anticoagulant therapy
v. Previous allergic reaction to mifepristone or misoprostol

Complete Medical Management of Miscarriage written consent and the associated documents

Prescribe:
•Mifepristone 200mg orally to be taken in hospital (repeat dose if vomits within 30 minutes of swallowing)
•Misoprostol 800mcg as an initial vaginal or sublingual dose to be taken 36-48 hours following mifepristone
•Misoprostol 400mcg to be given after 3 hours if there has been no bleeding in response to the initial dose
•Analgesia

Advise that a urine pregnancy test should be taken after 3 weeks to determine if the treatment has been successful.

If there has been no bleeding after 7 days, if the clinical picture changes, or if the urinary pregnancy test remains positive after 3 weeks, the patient should contact EPAS directly to arrange medical assessment and a further ultrasound scan.

Patients who are breastfeeding should be advised that misoprostol is safe and no discontinuation of breastfeeding is required.

In hospital

Patients who are more than 10 weeks of gestation should have medical management in EPAS. Patients ≤9 + 6 weeks gestation may opt to have medical management of their miscarriage in the EPAS setting if they prefer, or if they do not meet the eligibility criteria for treatment at home.

Ensure patient meets eligibility criteria for medical management of miscarriage:
i. No Adrenal, hepatic or renal impairment (caution)
ii. No severe asthma, or a history of hospitalisation for asthma exacerbation within the preceding 12 months (caution)
iii. No prosthetic heart valve or history of endocarditis

iv. No haemorrhagic disorders or anticoagulant therapy (caution)
v. No previous allergic reaction to mifepristone or misoprostol

Complete the written consent form for Medical Management of Miscarriage and complete the associated documentation

Complete the Sensitive Disposal of Fetal Remains form (SD7).

Prescribe:
•Mifepristone 200mg orally to be taken in hospital then wait 36 – 48hours
•Misoprostol 800mcg as a sublingual or vaginal dose 36 – 48 hours after mifepristone.
•Misoprostol 400mcg to be given as a further dose after 3 hours if the miscarriage has not passed
•If gestation between 10 + 0 weeks and 11 + 6 weeks then a third dose of 400mcg misoprostol should be prescribed and administered 3 hours after the second dose if the miscarriage has not completed
•Analgesia (e.g. co-codamol 30/500)

If products of conception are passed during admission, then the patient can be allowed home after 2 hours provided they are clinically well and observations are satisfactory.

If no products of conception have passed within 3 hours following the last dose of misoprostol then the patient may go home if she wishes if it is deemed appropriate (ensure no contraindications to treatment at home, can attend hospital quickly if necessary, has a responsible adult at home). Advise the patient that the miscarriage is likely to occur at home and provide a pregnancy test to be taken after 3 weeks, with advice to return to EPAS after 7 days if there has been no bleeding or if the pregnancy test is positive. Written information and contact telephone numbers should be provided.

For those between 10 + 0 and 11 + 6 weeks, if the patient wishes to remain inpatient in hospital until after the miscarriage has occurred, or if the miscarriage is incomplete, then there should be a medical review with clinical examination including speculum exam, and 2 further doses of 200mcg misoprostol can be repeated at 3 hourly intervals up to 5 doses in total.

If the miscarriage has not occurred for those over 10 + 0 weeks of gestation following 5 doses of misoprostol then a senior review is necessary and further management options should be discussed to include repeat medical treatment after 24 hour rest, or surgical intervention.

It is recommended that products of conception are sent for histopathological analysis following miscarriage, and for genetic analysis in the case of recurrent miscarriage (3 or more miscarriages). This testing and also sensitive disposal of pregnancy tissue should be discussed with the patient, and consent obtained for the relevant testing with documentation in the clinical notes. A Sensitive Disposal of Fetal Remains form (SD7) should be completed and sent to the laboratory with the sample along with a pathology request form.

Patients who are breastfeeding should be advised that misoprostol is safe and no discontinuation of breastfeeding is required.

- **SURGICAL**

Surgical options for management of miscarriage include general anaesthetic (GA) in theatre up to 12 + 6 weeks, and local anaesthetic (LA) in the EPAS setting (manual vacuum aspiration – MVA) up to 9 + 6 weeks. Surgical management should not be offered routinely to patients with miscarriages over 12 + 6 weeks of gestation unless other methods have failed.

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The indications for surgical management include:
•Patient request
•Failed conservative or medical management
•Septic miscarriage – cover with IV antibiotics for 24 hours preoperatively unless too unstable to wait
•Haemodynamically unstable due to heavy vaginal bleeding
•Suspected molar pregnancy

•Complete the Surgical Management of Miscarriage written consent form specifying whether the procedure will be performed under local or general anaesthetic
•Complete the Sensitive Disposal of Fetal Remains form (SD7) and obtain consent for HPE (or genetic analysis if recurrent miscarriage)
•Obtain bloods for FBC and Group & Save
•For GA procedures - the EPAS midwifery staff will liaise with administrative staff regarding Theatre 11 availability
•For emergency GA procedures - If the patient is clinically unwell (especially if haemodynamic instability, blood loss in excess of 25% total blood volume, more than 2g Hb drop since admission or Hb < 90 or patients suffering from severe sepsis as a consequence of retained products, etc) the case should be booked for emergency surgical management in whichever theatre is safest and timeliest to complete the procedure between Theatre 12 and CEPOD. Contact the unit coordinator, obstetric anaesthetist and maternity theatre team. Resuscitation should be prioritised with iv access, fluids, cross matching and senior medical support.

•For MVA procedures under LA – The EPAS midwifery staff will book the next available slot on the routine weekly MVA Wednesday am list. See relevant guideline for further information. Suitable patients may self-administer misoprostol 2 hours pre-procedure and there is no need for pre-procedure fasting.
•Prescribe:
o Misoprostol 400mcg administered sublingually or vaginally 2 hours prior to surgery for cervical priming
o Doxycycline 100mg BD for 7 days as Chlamydia and surgical prophylaxis (if recent negative Chlamydia swab then this can be reduced to 100mg BD for 3 days)
•Provide written information on surgical management of miscarriage that includes preoperative instructions (e.g. fasting prior to general anaesthetic) and information about the expected post-operative recovery along with contact telephone numbers should complications arise.

It is recommended that, where possible, products of conception are sent for histopathological analysis following miscarriage, and for genetic analysis in the case of recurrent miscarriage (for the third or more miscarriages). This testing and also sensitive disposal of pregnancy tissue should be discussed with the patient, and consent obtained for the relevant testing with documentation in the clinical notes. A Sensitive Disposal of Fetal Remains form (SD7) should be completed and sent to the laboratory with the sample along with an examination request form.

Anti D is required for all Rhesus negative patients having surgical management of miscarriage – see relevant local guidance on Rhesus D prophylaxis for further guidance**.**

- **SPONTANEOUS MISCARRIAGE**
  Patients may present to EPAS having had heavy vaginal bleeding with clots and tissue seen, which is in keeping with miscarriage. This may arise following a diagnosis of missed miscarriage on ultrasound scan or whilst awaiting a further ultrasound assessment of an inconclusive scan.

  Patients should be advised that a miscarriage is likely to have occurred and that the symptoms of pain and bleeding should resolve spontaneously. An ultrasound scan is not required to confirm complete miscarriage in patients whose symptoms are easing, however this should be considered in the event of worsening pain or bleeding, or symptoms that persist beyond 14 days.

  Written information should be provided along with contact telephone numbers in the event of worsening symptoms, prolonged bleeding beyond 14 days or if a high sensitivity pregnancy test is positive after 3 weeks.

- **INCOMPLETE MISCARRIAGE/RETAINED PRODUCTS OF CONCEPTION**
  Following miscarriage, it is normal for women to experience bleeding for up to 2 weeks, however if this is prolonged or if the high sensitivity urinary pregnancy test is positive after 3 weeks then the patient should be advised to attend EPAS for USS and senior medical review to determine ongoing management.

  Exercise caution in patients who have had no prior USS confirming the presence of an intrauterine pregnancy. If there is no previous ultrasound scan, then serial hCGs should be taken and the patient managed as pregnancy of unknown location until diagnostic clarity can be achieved.

  The differential diagnosis of prolonged bleeding following miscarriage includes
  • Incomplete miscarriage – retained products of conception (RPOC) refers to fetal or placental tissue that remains in situ within the uterus following a pregnancy. The presence of RPOC defines incomplete miscarriage.
  • Endometritis – with or without persisting RPOC, is a type of uterine sepsis that can be severe such that admission for resuscitation is required, with intravenous fluids and antibiotic therapy. Senior medical review is required in this scenario and surgical intervention with antibiotic cover may be necessary
  • Gestational trophoblastic disease – can arise after any pregnancy and pathological analysis should be expedited if possible to reach or refute the diagnosis. Though rare, consideration should be given to the symptoms of metastatic GTD (abnormal bleeding, uterine mass on USS, haemoptysis, cough, chest pain, focal neurological symptoms). A negative pregnancy test or serum hCG excludes the diagnosis, however hCG remains elevated in the weeks following miscarriage so early presentations can cause clinical confusion
  • AV malformation – this is a very rare complication of pregnancy loss and is usually diagnosed on ultrasound scan and confirmed with MRI
  • Heterotopic pregnancy – also very rare but should be considered particularly in patients who have had treatment for subfertility (e.g. ovulation induction or assisted conception treatments)

  Investigations to consider:
  • High sensitivity urine pregnancy test
  • Speculum examination to exclude POC within endocervical canal
  • HVS / LVS
  • TV ultrasound scan – use maximum AP diameter to guide management
  • Serum hCG
  • FBS, CRP +/- coagulation screen and Group & Save if indicated

  A cut-off AP measurement of <15mm may be used to diagnose complete miscarriage. Where the AP diameter is ≥15mm, colour flow Doppler during ultrasound scan can identify vascular RPOC which informs management since

vascular RPOC are less likely to resolve spontaneously and more likely to result in prolonged bleeding.

The decision to treat must take into consideration the clinical findings and the patient's wishes.

- **CONSERVATIVE**
  Patients who are found to have RPOC early in the miscarriage process, have minimal RPOC, or who are asymptomatic can opt to have conservative management. This may be as effective as medical management and leads to spontaneous resolution in the majority of patients with no further intervention required.Advice about signs of infection should be provided along with contact telephone numbers in the event of becoming unwell.

- **MEDICAL**
  Patients with RPOC may be offered a single dose of misoprostol 800mcg administered sublingually or vaginally, which can be self-administered at home or in hospital. If there has been no vaginal bleeding within 7 days, then a follow-up EPAS appointment should be offered.

  Advice about signs of infection should be provided along with contact telephone numbers in the event of becoming unwell.

- **SURGICAL**

  Surgical management of RPOC is rarely necessary as expectant and medical management are usually successful. Surgical management can be performed with local or general anaesthetic, and any tissue retrieved should be sent for histological analysis.

Maximum AP diameter	Management	Follow-Up
≤ 20mm	Conservative	UPT 3 weeks, notify EPAS if positive
20 – 50mm	Conservative – mild bleeding and clinically well	UPT 3 weeks, notify EPAS if positive
	Medical – moderate bleeding or patient choice	UPT 3 weeks if treatment at home, notify EPAS if positive
	Surgical – moderate bleeding or patient choice Heavy bleeding with haemodynamic compromise Suspected infection or molar pregnancy	Tissue for HPE
>50mm	Surgical	Tissue for HPE

	Consider medical in hospital setting if patient clinically stable and bleeding acceptable – senior review required	Tissue for HPE
Septic Miscarriage	Surgical under USS guidance, ideally with 24h antibiotic cover preop	Tissue for HPE

ANTI-D IMMUNOGLOBULIN PROPHYLAXIS

Anti D should be offered a minimum dose of 250IU to all Rhesus-negative women who have a surgical procedure to manage their miscarriage or ectopic pregnancy. Currently this dosage is unavailable and therefore dosage of 500IU is offered.

There is limited evidence about the risks of isoimmunisation after medical management of miscarriage between 10 and 11 + 6 weeks and the guidance is under review by the British Society of Haematology. The current recommendation is that women having medical management of miscarriage between 10 + 0 and 11 + 6 weeks of gestation should receive Anti D at a dose of 250IU. A discussion should take place outlining the potential benefits in this scenario, which are relevant for women who wish a future pregnancy.

Do not routinely offer Anti D prophylaxis to patients who:

- Receive solely medical management for an ectopic pregnancy or miscarriage under 10 weeks or
- Have a threatened miscarriage, unless there are repeated episodes of bleeding which are heavy and painful or
- Have a complete miscarriage or
- Have a pregnancy of unknown location

Do not use a Kleihauer test for quantifying feto-maternal haemorrhage.

CONTRACEPTION

Discussion about contraception should be sensitively initiated, as not all patients wish to consider contraception at the time of pregnancy loss and others may wish to pursue another pregnancy soon after completion of miscarriage.

Those who do wish to discuss contraception should be offered information about all their contraceptive options, without any pressure to pursue a particular method.

Advice can be given on the greater efficacy and duration of long acting reversible contraceptives (LARCs – implants and IUDs) and of their safety.

All contraceptive methods can be started at the time of surgical management of miscarriage.

All contraceptive methods except for IUDs can be started at the time mifepristone and/or misoprostol is taken for medical management of miscarriage. An IUD can be inserted at the time of passage of products of conception during medical management of miscarriage.

If a patient's chosen method of contraception is not available, an alternative bridging method should be provided that can be started immediately, and an onwards referral to sexual health services can be made.

References/Evidence

1. NICE Guideline NG126 Ectopic pregnancy and miscarriage: diagnosis and initial management. April 2019 (Updated August 2023)
2. ACOG Practice Bulletin Number 200: Early Pregnancy Loss. November 2018
3. J Trinder et al. Management of miscarriage: expectant, medical or surgical? Results of randomized controlled trial (Miscarriage treatment MIST trial) BMJ 2006;1235-1240
4. Qureshi H et al. BCSH guideline for the use if anti-D immunoglobulin for the prevention of haemolytic disease of the fetus and newborn. Transfus Med; February 2014

Appendices

1. Governance information for Guidance document

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