University Hospitals of North Midlands NHS
NHS Trust

Guideline for the Management of Miscarriage

Date of Ratification:	September 2021
Date of Next Review:	September 2024
Ratified by:	O&G Business and Performance meeting
Reviewed by:	Consultant Gynaecologist Early Pregnancy Unit Manager

VERSION CONTROL SCHEDULE			
Version	**Date**	**Author**	**Comments**
1	2015 (December)	Mr G Misra, Consultant Gynaecologist Mrs J Fieldhouse, Early Pregnancy Unit Manager	New guideline
2	2021 (September)	Reviewed by: Mr G Misra/J Fieldhouse/ Mr M Shahin/ Dr J Troko	Following local discussions with the Lead Consultant for EPU, Senior EPU nurses and Imaging the following has been added: Trans abdominal ultrasound recommendations: If CRL ≥30mm on TA US, a further TA US can be performed by a 2nd sonographer to confirm missed miscarriage. If CRL <30mm on TA US, a TVS must be performed by the 2nd sonographer to confirm a missed miscarriage.

CONTENTS **PAGE NO.**

1. BACKGROUND

Approximately 20% of all pregnancies end in miscarriage. In the UK alone, this amounts to an estimated 250,000 pregnancies each year.[1]

In the nineties, Early Pregnancy Units (EPUs) were established throughout the UK as departments dedicated to care for women experiencing symptoms of miscarriage. Evidence gathered on the effectiveness of EPUs demonstrated reduced inpatient episodes, reduction in patient waiting times, improved clinical outcomes, and better patient experiences of care.[2]

The EPU at University Hospitals of North Midlands (UHNM) is an outpatient service caring for pregnant women up to sixteen weeks gestation experiencing mild to moderate symptoms of vaginal bleeding and/or pain. Patients experiencing severe clinical symptoms of heavy vaginal bleeding and/or severe pain should be seen by the on call gynaecology team and managed through the emergency/inpatient route. Women presenting with similar symptoms beyond 16 weeks should be managed by the obstetric team.

This guideline covers the diagnosis and management of miscarriage in early pregnancy including first trimester and part of early second trimester (15+6 weeks gestation). It aims to improve how early pregnancy loss is managed and provide more guidance for any woman presenting with a positive pregnancy test experiencing bleeding and/ or pain once an intra-uterine pregnancy is demonstrated on an initial ultrasound assessment. A separate guideline is available for management of pregnancy of unknown location (PUL), medical management of miscarriage and ectopic pregnancy.

2. MANAGEMENT OF MISSED MISCARRIAGE

If a woman has a positive pregnancy test, the assessment of wellbeing and location of pregnancy utilising ultrasound is an established investigation in pregnancy of 6 weeks gestation and above. The optimum time for this assessment utilising transvaginal sonography (TVS) is 49 days (7 weeks) from the last menstrual period.[3] If the **fetal crown rump length (CRL) is >7mm with NO evidence of a fetal heart, this is termed a missed miscarriage**.[4] Confirmation of the miscarriage should be undertaken by:

- **Seeking a second opinion of another sonographer immediately OR**
- **Repeating the scan on another date by either TVS or Transabdominal ultrasound (TA US) if images are acceptable.**

Two sonographers are required to confirm a missed miscarriage. If the **CRL is ≥30mm and views are adequate on a TA US, a subsequent sonographer may repeat a TA US to confirm a missed miscarriage. If the CRL <30mm, a subsequent sonographer needs to perform a TVS to confirm the diagnosis.**

Once the diagnosis has been confirmed, the patient should be counselled regarding outpatient management of missed miscarriage by either expectant, medical, or surgical means if the patient has minimal or no vaginal bleeding and mild/ moderate abdominal pain. If the patient has heavy vaginal bleeding with clots or significant pain, she should be medically assessed and admitted to the inpatient services for further care. For further guidance on:

Expectant management, consider exclusion criteria (See section 6/ Appendix 5)
Medical management (Medical management guideline)
Surgical management (See section 7/ Appendix 6)

The National Institute for Health and Care Excellence (NICE)[5] recommends offering expectant management as first line treatment for missed miscarriage where clinically appropriate and acceptable to the patient. All patients with a diagnosis of missed miscarriage should be given direct access to EPU during the department opening hours (Mon – Fri 8am - 5:30pm, Sat 8am – 2pm) or Surgical Assessment Unit (SAU) out of hours if they experience heavy bleeding or severe pain.

3. MANAGEMENT OF BLIGHTED OVUM

If a patient is found to have a **gestation sac with a mean diameter >25mm, with no evidence of an embryo or yolk sac**, **this is classified as a blighted ovum**.[4] Confirmation of this diagnosis should be made by:

- Seeking a second opinion of another sonographer immediately OR (a rescan in 1 week is the first line action).
- Repeating the scan on another date by either TVS or TA US if images are acceptable (in 1 week).

Two sonographers are required to confirm a blighted ovum. **If images are unsatisfactory on TA US, it is reasonable to offer the patient a TVS for further clarification.**

Once the diagnosis has been confirmed, the patient should be counselled regarding outpatient management by either expectant, medical, or surgical means if the patient has minimal or no vaginal bleeding and mild/ moderate abdominal pain. If the patient has heavy vaginal bleeding with clots or significant pain, she should be medically assessed and admitted to the inpatient services for further care. For further guidance on:

Expectant management, consider exclusion criteria (See Section 6)
Medical management (Medical management guideline)
Surgical management (See Section 7)

NICE[5] recommends offering expectant management as first line treatment for a blighted ovum where clinically appropriate and acceptable to the patient. All patients with a diagnosis of a blighted ovum should be given direct access to EPU during the department opening hours (Monday – Friday 8.00 am – 5.30pm, Saturday 8.00 am – 2.00 pm) or Surgical Assessment Unit (SAU) out of hours if they experience heavy bleeding or severe pain.

4. MANAGEMENT OF UNCERTAIN VIABILITY

If a patient presents with mild vaginal bleeding and their last menstrual period (LMP) is <6 weeks ago, inform the patient to repeat a urinary pregnancy test in 7-10 days and call the EPU back if positive or if they develop worsening vaginal bleeding or pain.

If a patient presents with a positive pregnancy test with uncertain gestation or is found to be in pain and is estimated to be >6 weeks gestation, the patient should be reviewed by the medical team and undergo a TVS. **If upon TVS, a pregnancy is located within the uterus, without a visible heartbeat but cannot be diagnosed as a missed miscarriage or blighted ovum, it is termed a pregnancy of uncertain viability.**[5] The criterion for this is as follows:

If a patient is found to have **a mean sac diameter between 10mm and 25mm with no yolk sac, OR a gestation sac with a CRL of <7mm, OR a gestation sac with a yolk sac only**

- **Repeat the scan 7 days later on TVS OR**
- **Repeat the scan 10 -14 days later on TA US**

The repeat scan findings should then be managed with careful consideration to the criteria for missed miscarriage, blighted ovum, or uncertain viability. A failure to see expected development should always be considered in relation to expected gestation from last menstrual period and clinical symptoms. **A pregnancy which has failed to develop beyond a CRL of >7mm or a gestation sac size of >25mm must be visualised on 2 separate scans a minimum of 7 days apart with no significant change to be diagnosed as a missed miscarriage** (or failed pregnancy.)

All patients with a diagnosis of uncertain viability should have direct access to EPU during the department's opening hours (see above) or SAU out of hours if they experience heavy bleeding or severe pain. If there is heavy bleeding and clots or significant pain the patient should be medically assessed and admitted to the inpatient services to be managed appropriately. Any significant change in the patient's condition may require the management plan to be changed for individualised care.

If the ultrasound scan shows a **small irregular fluid filled area/sac of <10mm (consider pseudosac), OR no evidence of intrauterine pregnancy, OR any evidence of adnexal masses or pelvic free fluid, consider an ectopic pregnancy** (see Pregnancy of Unknown Location/PUL guideline). Consideration of patient risk factors for ectopic (e.g. previous ectopic, tubal surgery, artificial reproductive treatment, smoker, history of pelvic inflammatory disease or sexually transmitted infections, intra-uterine device insertion), baseline observations of temperature, pulse and blood pressure (BP) should be recorded. A full blood count (FBC), Group and Screen (G&S), and serial beta human chorionic gonadotrophin levels (bHCG) 48 hours apart should also be performed and managed as per the PUL guideline.

5. MANAGEMENT OF RETAINED PRODUCTS OF CONCEPTION

The term retained products of conception (RPOC) refers to placental and/or fetal tissue that remains in the uterus after a spontaneous pregnancy loss (miscarriage), planned pregnancy termination, or preterm/term delivery. This is usually described as echogenic material or heterogenous material that is measurable.[4]

If a patient presents with heavy vaginal bleeding and clots or significant pain, she should be medically assessed and admitted to the inpatient services for further care. If she has mild/moderate pain with mild/moderate bleeding and ultrasound scan findings demonstrate retained products of conception **<50mm** the patient can be managed **conservatively as follows:**

- Baseline observations of temperature, pulse and BP
- G&S and FBC
- Doxycycline 100mgs BD (if the patient has a tetracycline allergy (or is breast feeding) consider co-amoxiclav) for 7 days should be prescribed.

Following a period of two weeks if vaginal bleeding has stopped, discharge the patient to their GP. **If vaginal bleeding/pain persists OR no vaginal bleeding occurs, arrange for the patient to be reassessed on EPU with consideration for US (**and a repeat urine pregnancy test).

If there is mild/moderate pain with moderate/minimal vaginal loss and **ultrasound scan findings demonstrate retained products of conception >50 mm conservative management may remain the most appropriate pathway however medical or surgical management may be considered if clinically appropriate or patient choice**. Small areas of persistent RPOC require medical discussion and an individualised treatment plan.

All patients with a diagnosis of RPOC have direct access to EPU during the department's opening hours or SAU out of hours if they experience heavy bleeding or severe pain.

6. MANAGEMENT OF COMPLETE MISCARRIAGE

A complete miscarriage is defined upon ultrasound scan as a normal empty uterus with thickened endometrium with no free fluid or masses seen. If a patient has a history of **very heavy bleeding, or products of conception are seen, then a urinary pregnancy test (UPT) should be performed a week later to confirm resolution of the pregnancy**. Note that the majority of women who have miscarried in the days immediately prior to assessment will still demonstrate a positive UPT due to receding bhCG levels.

If a patient has a history of **light bleeding, or no products of conception are seen, then a UPT should be performed immediately.** If the test is positive, serial bhCGs should be considered 48 hours apart to ensure the pregnancy is resolving. If negative, the patient can be discharged.

7. EXPECTANT MANAGEMENT OF MISCARRIAGE

Expectant management of miscarriage is when a period of time is allowed for the natural process of miscarriage to occur without active medical intervention. The woman is advised to await events at home but contact the EPU or emergency inpatient services (SAU) if they develop severe symptoms of miscarriage. NICE[5] recommends this as first line management with consideration for other management options if:

- the woman is at risk of haemorrhage (e.g. she is in the late first trimester)
- she has had previous adverse and/or traumatic experience associated with pregnancy (e.g. stillbirth, miscarriage, or antepartum haemorrhage)
- she is at increased risk from the effects of haemorrhage (e.g. known Jehovah's witness or is unable to receive a blood transfusion)
- there is evidence of infection

Baseline observations of temperature, pulse, and BP should be recorded and the FBC and G&S taken from the patient. The woman should be fully counselled on how much bleeding and pain will be expected during the natural process of miscarriage and written information should be given to support this. Open access to the EPU between 8am - 5:30pm and SAU out of hours should be fully explained should the woman experience severe bleeding or pain during the process.

Following the initial period of expectant management (7-14 days); if the process of miscarriage has occurred and vaginal bleeding or pain is resolving then the patient should be advised to take a UPT in a further **three weeks** to confirm resolution of the pregnancy. **If this is negative the patient can be discharged. If the test remains positive the patient should be reviewed on EPU for individualised care.**

If the process of miscarriage has not occurred or vaginal bleeding/ pain experienced is not resolving, then review on EPU for a repeat US. Scan findings can be managed either with further expectant management, medical management, or surgical management as clinically appropriate. Expectant management should be limited to a maximum of three weeks without EPU review.

8. SURGICAL MANAGEMENT OF MISCARRIAGE

Surgical management of miscarriage (SMM) is performed either under general anaesthetic in theatre or under a local anaesthetic within EPU via manual vacuum aspiration (MVA). MVA is covered in a separate guideline. Patients undergoing a SMM, should undergo the following:

- Book the patient for an elective operation as a category E4 patient within 7 days in CEPOD theatre (theatre 25)
- The woman should complete form B2 in conjunction with the End of Life Policy
- G&S and FBC should be obtained
- A bed on the day case ward should be booked as appropriate in accordance to current Covid Guidelines. The case should be added onto the gynaecology inpatient list online (EGAB)
- Consent for SMM must be obtained by medically/ appropriately trained nursing team
- 500IU Anti-D Ig should be given post operatively if the patient is Rhesus negative

The woman should be fully counselled in the process of SMM and written information given in support of this.

9. AUDIT AND MONITORING

The need to monitor/audit the standards set out below will be considered alongside other Directorate requirements and prioritised accordingly. The Directorate Clinical Audit programme is drafted by the Directorate Clinical auditor, in liaison with clinical staff, and approved by the Directorate.

Element to be monitored	Lead	Tool	Frequency	Reporting arrangements	Acting on recommendations and lead(s)	Change in practice and lessons to be shared
Guideline content	Guideline Co-ordinator	Guideline Review	Every three years	Maternity Forum Subgroup: Guideline Meeting	Required changes to practice will be identified and actioned with the release of the updated guideline.	Required changes to practice will be identified and actioned with the release of the updated guideline.
Clinical standards within guideline	Directorate Clinical Auditor	Clinical Audit	As required in relation to other Directorate priorities	Directorate Business, Performance and Clinical Governance Meeting	Required actions will be identified and completed in a specified timeframe as per the audit action plan.	Required changes to practice will be identified and actioned within a specific timeframe as per the audit action plan and, in addition, lessons will be shared with relevant stakeholders as per audit action plan.

10. REFERENCES

1. Miscarriage Association. 2011. Miscarriage and the workplace: a guide for employers.

2. Sellappan,K., Mcgeown,A., Archer,A. 2009. A survey to assess the efficiency of an early pregnancy unit. International Journal of Gynaecology and Obstetrics; S542.

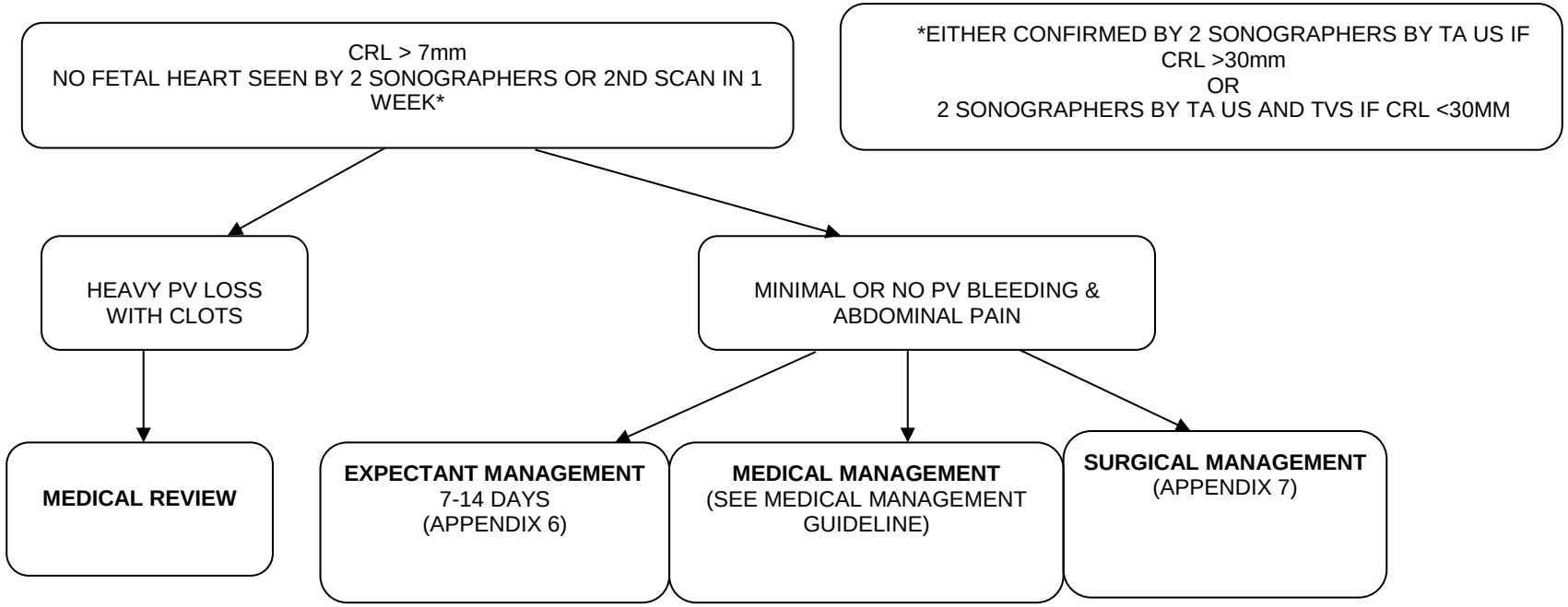
3. Bottomley C, Van Bellee V, Mukr F, Van Huffel S, Timmerman D, Bourne T. 2009. The optimal timing of an ultrasound scan to assess the location and viability of an early pregnancy. Human reprod. Aug 2009 24:1811-1817

4. Guidance of Ultrasound Procedures in Early Pregnancy, 2011

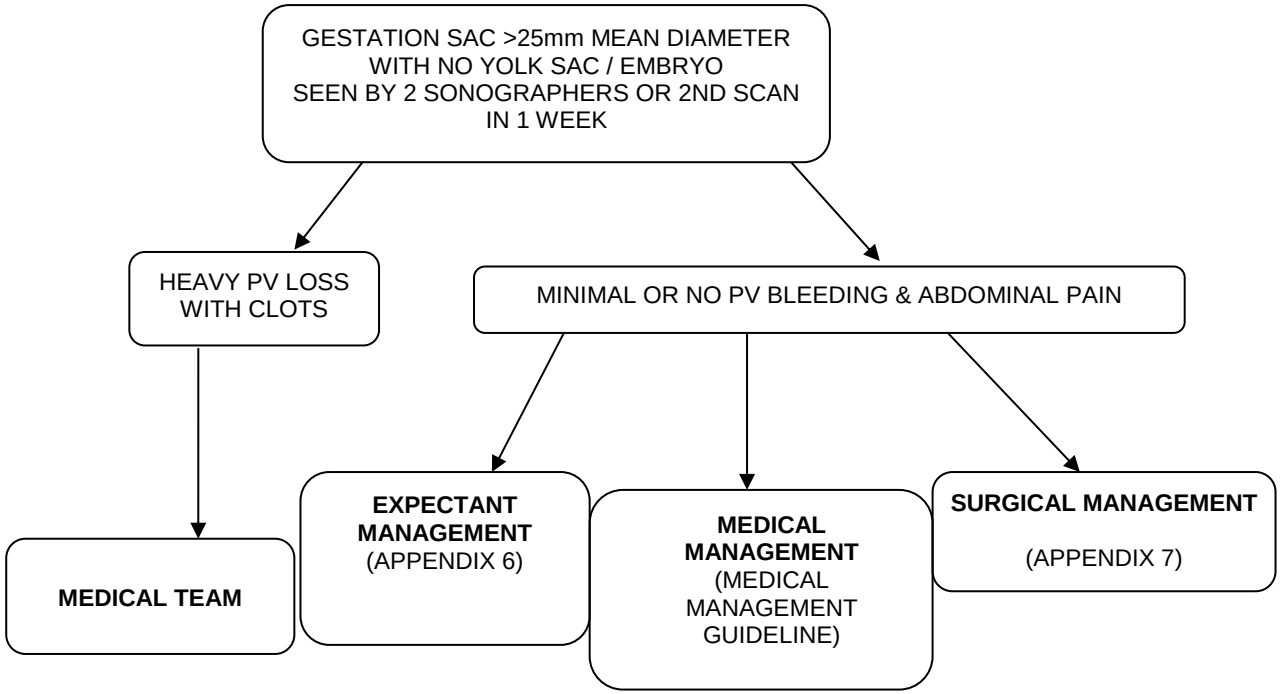
5. Ectopic pregnancy and miscarriage: diagnosis and initial management (NG126) NICE guidelines Apr 2019

11. APPENDICES

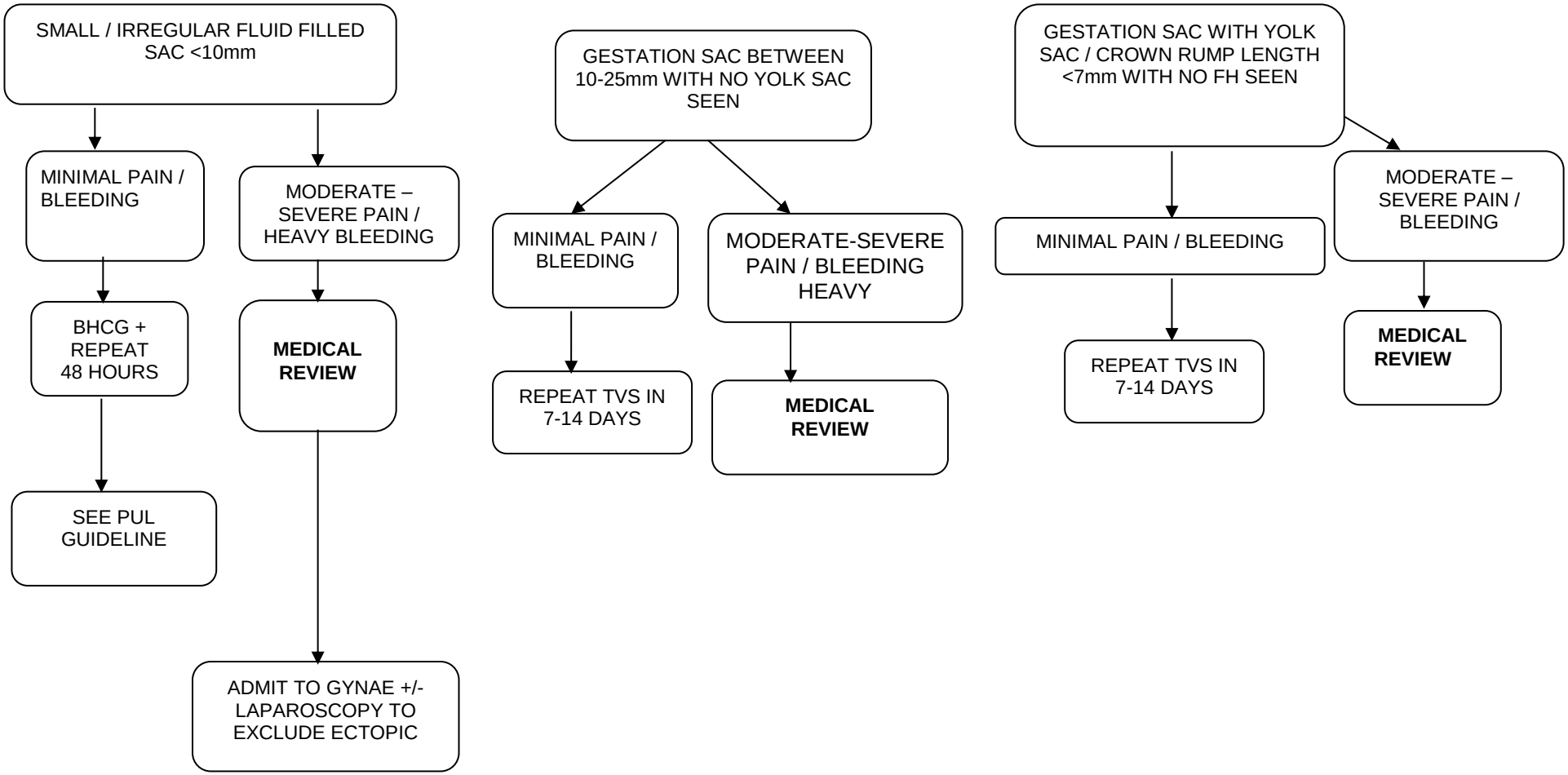
Appendix 1 - Ultrasound Assessment - Missed Miscarriage



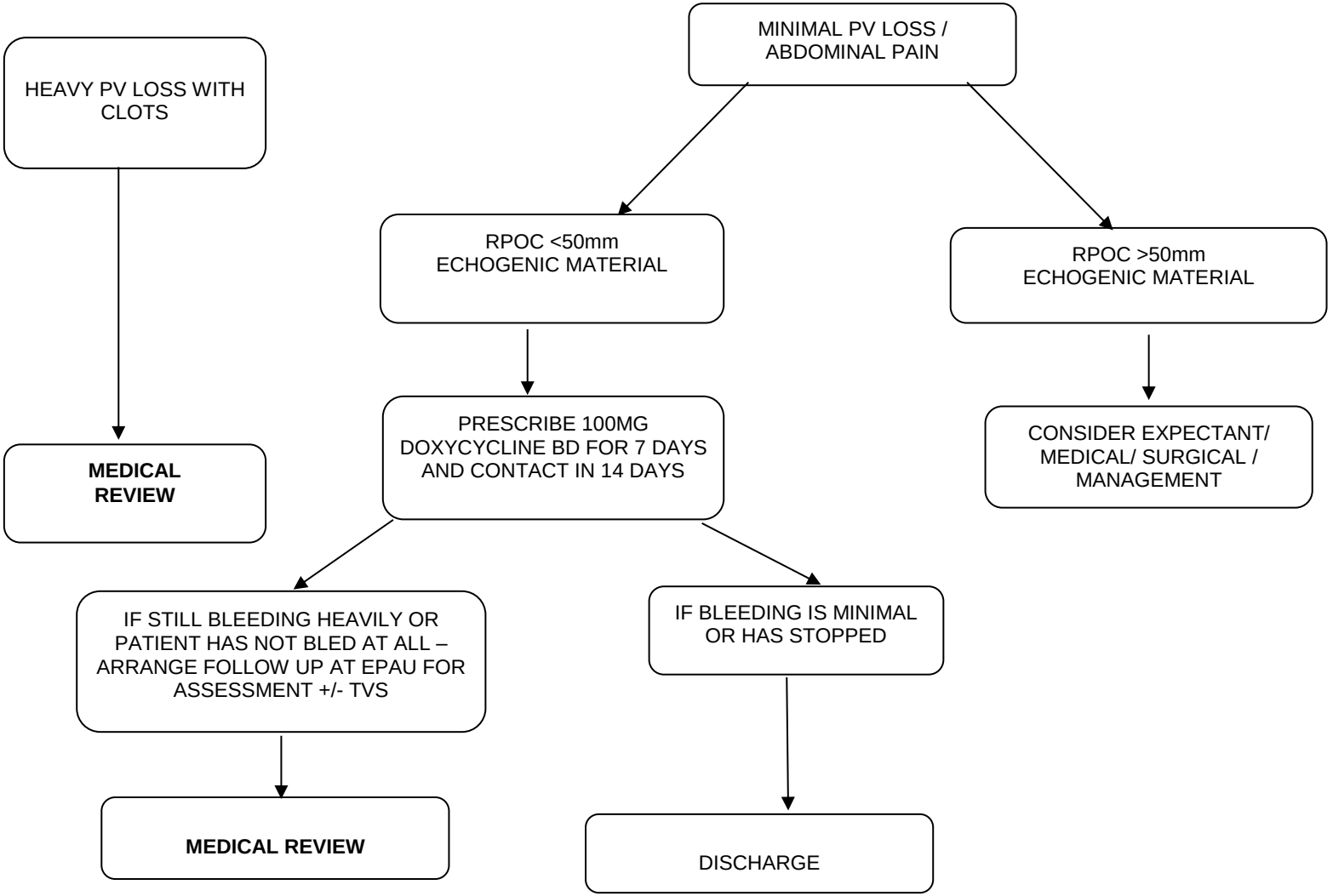
Appendix 2 - Ultrasound Assessment - Blighted Ovum



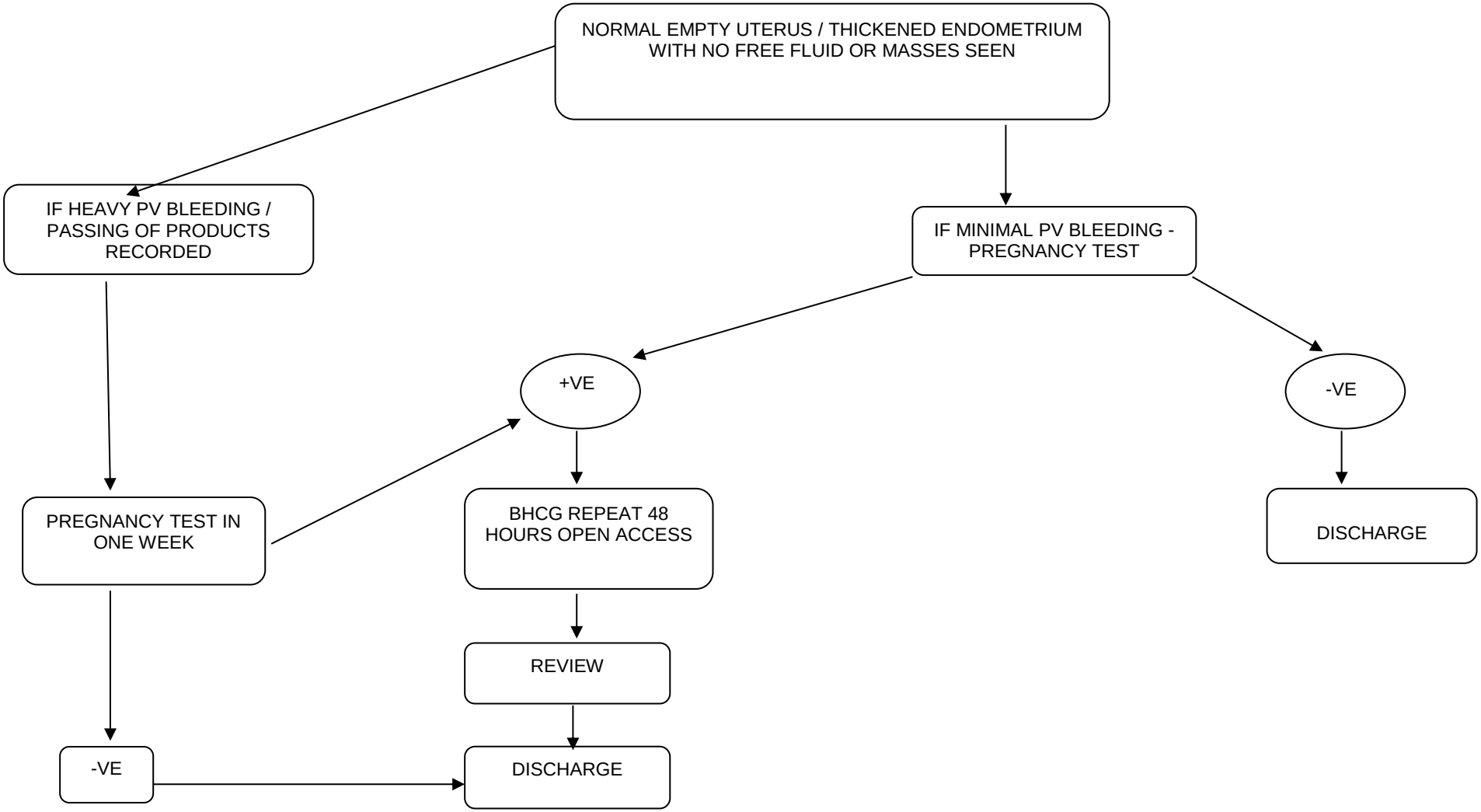
Appendix 3 - Ultrasound Assessment - Uncertain Viability



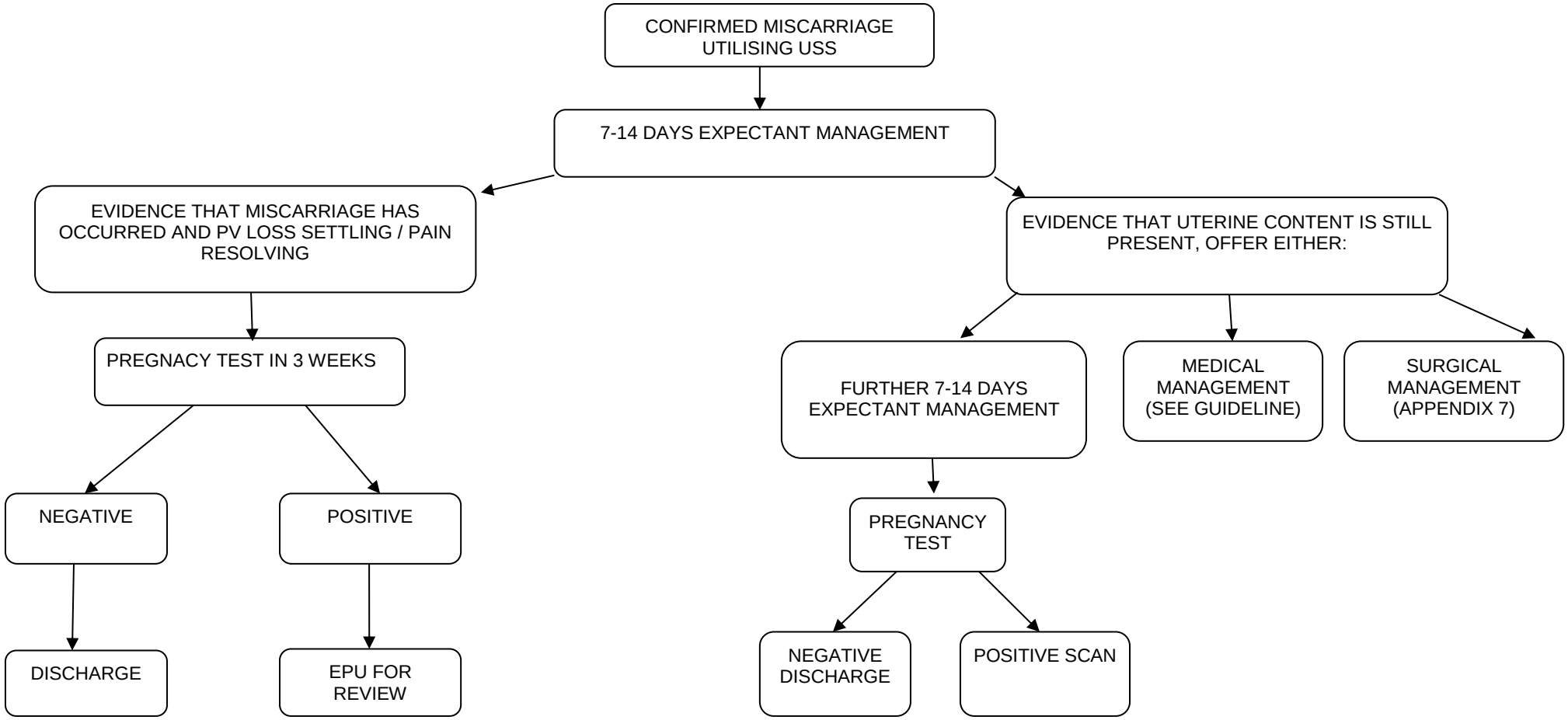
Appendix 4 - Ultrasound Assessment - Retained Products Of Conception



Appendix 5 - Ultrasound Assessment - Complete Miscarriage



Appendix 6 – Expectant Management of Missed Miscarriage / Blighted Ovum / Failed Pregnancy / RPOC



Appendix 7 – Surgical Management of Missed Miscarriage / Blighted Ovum / Failed IUP / RPOC