Early Pregnancy Loss Management Workshop
Learner's Guide

The following set of cases is designed to teach some of the key components of early pregnancy loss evaluation and management. Your facilitator will help you work through the cases. Attached to this guide are several resources including: (Appendix A) an algorithm for the evaluation of first trimester bleeding, (Appendix B) a definition table for types of first trimester loss, and (Appendix C) a table of diagnostic criteria needed to diagnose early pregnancy loss by ultrasound. Please feel free to reference the appendix throughout the cases.

Case # 1: “Carmen”

You are the on-call resident at night for your practice. You receive a call at 6 am from Carmen, who reports she is early in pregnancy, and has had 3 days of vaginal spotting. She is now calling because she is having more bleeding and clots for the last 2 hours. She is wondering if she needs to go to the emergency room. What additional information do you need?

Carmen tells you she is a 34-year-old G4P3003 with no significant medical problems, and her only medication is a prenatal vitamin. Her pregnancy test was first positive 2 weeks ago, after she missed her period. She tells you her LMP was 8 weeks ago. She was seen last week in the office and was scheduled for an ultrasound, but has not had it done yet.

For the last 3 days, she describes a small amount of red blood when wiping each day but without cramping. For the last 2 hours ago, she has had bleeding heavier than a period, with 2-3 clots the size of golf balls. She has soaked 3 maxi pads in the last 2 hours. She has no history of bleeding problems or anemia, and has no lightheadedness or dizziness. She has mild cramps like menses, but no other pelvic pain. She feels overall well, just worried. What should you tell her?

Carmen comes to the office that morning to meet you. She tells you she had about 2 more hours of heavy bleeding but it then slowed down. She is now changing her pad every 4 hours and the cramping has improved. You assess her feelings about the pregnancy and learn that she was trying to get pregnant with her 4th child. Her urine pregnancy test is positive (don’t forget to check this since a negative pregnancy test confirms completed pregnancy loss and saves a lot of worry).

You do an exam which shows:
BP: 108/56, P: 74, R: 16, T= 98.6 Pox: 100%
Speculum: multiparous slightly open cervix, moderate amount of brown and red blood in vaginal vault. No products of conception or large clots are seen. Bimanual exam: uterus 5-6 weeks size, no uterine or adnexal masses or tenderness

What can we tell Carmen about what’s going on?

What should we do next?

You do a transvaginal ultrasound. Describe the results.

What is your differential diagnosis? What will you tell Carmen about what is going on? Does not seeing any adnexal masses definitively rule out ectopic?

What is your plan? Are there any other labs you might want to get?
Carmen’s initial bHCG level comes back at 8,150 and 48 hours later it is 1,094. She is Rh+ and her hemoglobin is 11.4. What is your diagnosis now?

Do we need to follow the quants to zero? How long might they take to get there?

Carmen asks when she can start trying to get pregnant again. What should you say?

If Carmen didn’t want to get pregnant again, when could you insert an IUD, if that was her preference?

END OF CASE

Write down some of the key learning points:
Case # 2: “Diane”

Diane is here for her first prenatal appointment with her partner, Maxwell. She is a 29-year-old G2P1001 with a history of gallstones but is otherwise healthy. She had an uncomplicated vaginal delivery 3 years ago. She tells you she is sure her LMP was 10 weeks ago, but notes that she had been taking birth control on and off for the last few months. She is excited about the pregnancy, as she and her boyfriend had been thinking about trying. She had a positive pregnancy test at home and some nausea a few weeks ago which has since resolved. She has not had bleeding, abdominal pain or cramping.

What should you do next?

You do an exam, which shows:
BP 114/62, HR 80, RR 12, SO2 99%
She appears comfortable and her abdomen is soft and nontender. There is no palpable fundus on abdominal exam.
Dopplers: No fetal heart rate is heard
Bimanual exam: uterus 6-week size, nontender. Adnexa are without mass and nontender.

What is your assessment? What is your plan?

You do a transvaginal ultrasound.

Describe the ultrasound:

How do you interpret this ultrasound result?

What should we do next? How should we counsel Diane and Maxwell?
Diane follows up with you 3 days later. Her initial bHCG level was 12,480 and her repeat at 48 hours was 10,560. She has had no new symptoms and overall feels well.

What is your diagnosis? What is your plan?

Diane opts to repeat the ultrasound in 14 days to be 100% sure. The ultrasound shows the same large sac and still no fetal pole or yolk sac.

What is your diagnosis? What is your plan?

Diane decides to pursue expectant management. She wants to avoid any unnecessary medications or procedures, if possible. You counsel her on what to expect and provide her with prescriptions for ibuprofen and hydrocodone-acetaminophen 5/300 #4 tabs to help with cramping pain if needed. She has a reliable way of contacting you or your colleagues in case she has questions or concerns.

How often does expectant management work?

What anticipatory guidance do you give her regarding when to call?
Two weeks later, she asks to come for a follow up appointment to discuss her options. She has not had any heavy bleeding, and only a couple days of light spotting. She is tired of waiting and now wants “all this to be over.”

What options would you now offer her?

Diane decides to take the mifepristone and misoprostol. How do you counsel her to use the medications?

Diane takes the mifepristone in the office. Twenty-four hours later, at home, she takes 600 mg of ibuprofen, and inserts 800 mcg (four 200 mcg tablets) of misoprostol into the vagina. About one hour later she calls you because she has a fever to 100.6 and shaking chills and is worried she has an infection.

Why is she having these symptoms?

She calls you the next day to let you know that she had about 4 hours of heavy bleeding and clots. Her bleeding has now slowed and it is more like a period. Her fever and chills resolved. She returns in one week as planned and you do an ultrasound which no longer shows a gestational sac. You discuss her plans for pregnancy, tell her to continue her prenatal vitamins, and invite her back for prenatal care. You also remind her that grief after an early pregnancy loss can be as much as after stillbirth. Anticipatory guidance about grief can be helpful, and a referral to counseling can be considered.

END OF CASE

Write down some of the key learning points:
Case # 3: “Monique”

You are in the middle of your morning in clinic, when the hospital ultrasonographer calls your office. She is seeing your patient for a nuchal translucency measurement. Your patient, Monique, is a 19-year-old G1 who you are seeing for routine prenatal care following the diagnosis of her pregnancy, which she has decided to continue. Today she should be at 11 weeks and 4 days gestation based on a 6-week ultrasound, which was consistent with LMP. She had been sent to get a routine screening ultrasound, and there were no concerns.

The ultrasonographer notes that there is an intrauterine pregnancy, however the crown-rump length (CRL) is 7.2 mm and has no detectable heartbeat. The patient reported no bleeding or cramping, but did notice that her breasts were less tender and her nausea had improved. The ultrasonographer wants to know if she should send the patient to the ER.

The ultrasound is shown:

What is your assessment? What is your plan?

You have the radiology suite send the patient to your clinic and you add her onto your schedule. You walk in the room to find Monique and her boyfriend. They appear concerned and want to know what is going on.

What can you tell them about early pregnancy loss in general?
How would you counsel them on next steps?

Monique and her partner would like to get a manual vacuum aspiration (MVA) in your clinic. She does not like the idea of having a nonviable pregnancy inside of her, and does not like the idea of bleeding at home. You discuss contraception with her, and she decides she would like an IUD inserted today at the end of the MVA procedure. You obtain consents for both of these procedures.

What are the contraindications, risks and benefits to office-based MVA?

You perform an MVA with local anesthesia and insert the IUD. Monique tolerates the procedure very well, with her boyfriend holding her hand. On gross tissue exam, you see a typical 7-week gestational sac, which does not need to be sent to pathology because this is her first early pregnancy loss.
What else should you do today?

END OF CASE

Write down some of the key learning points:
References

Appendix A: First Trimester Bleeding algorithm

Figure 1. Evaluation of first trimester bleeding

- Bleeding in desired pregnancy, < 12 weeks gestation
  - Physical exam
    - Peritoneal signs or hemodynamic instability
      - Transfer to ED
    - Non-obstetric cause of bleeding identified
      - Diagnose and treat as indicated
    - Products of conception (POC) visible on exam
      - Incomplete abortion, treat as indicated
    - Patient stable, no POC or other causes of bleeding
      - Transvaginal ultrasound (TVUS) and β-hCG level
        - Ectopic or signs suggestive of ectopic pregnancy
          - Presume ectopic; refer for high-level TVUS and/or treatment
        - Viable intrauterine pregnancy (IUP)
          - Threatened abortion; repeat TVUS if further bleeding
        - Nonviable IUP
          - Embryonic demise, anembryonic gestation or retained POC; discuss treatment options
        - IUP, viability uncertain
          - Repeat TVUS in 7-14 days and/or follow serial β-hCG's; consider progesterone levels
          - IUP seen on prior TVUS
            - No
              - See Figure 2 (PUL)
            - Yes
              - Completed abortion; expectant management
        - No IUP, no ectopic seen
          - No
Figure 2. Evaluation of first trimester bleeding in Pregnancy of Unknown Location (PUL)

Appendix B: Classification of Early Pregnancy Loss
<table>
<thead>
<tr>
<th>Classification</th>
<th>Vaginal bleeding</th>
<th>Endometrial thickness</th>
<th>Products of conception seen on ultrasound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete early pregnancy loss</td>
<td>Little or none</td>
<td>Any, though typically &lt; 15 mm</td>
<td>None</td>
</tr>
<tr>
<td>Incomplete early pregnancy loss</td>
<td>Little or none</td>
<td>Any</td>
<td>Heterogeneous tissues (with or without a gestational sac) distorting the endometrial midline</td>
</tr>
<tr>
<td>Embryonic or fetal demise</td>
<td>Yes or no</td>
<td>Any</td>
<td>Gestational sac with fetal tissue (i.e. fetal pole or yolk sac) present, meeting ultrasound criteria for SAB (i.e. &gt; 7 mm with no FH)</td>
</tr>
<tr>
<td>Anembryonic pregnancy</td>
<td>Yes or no</td>
<td>Any</td>
<td>Gestational sac without fetal tissue (i.e. no fetal pole or yolk sac) present, meeting ultrasound criteria for SAB (i.e. MSD &gt; 25 mm without yolk sac)</td>
</tr>
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Appendix C: Ultrasonographic criteria for EPL

Table 2. Guidelines for Transvaginal Ultrasonographic Diagnosis of Pregnancy Failure in a Woman with an Intrauterine Pregnancy of Uncertain Viability.*

<table>
<thead>
<tr>
<th>Findings Diagnostic of Pregnancy Failure</th>
<th>Findings Suspicious for, but Not Diagnostic of, Pregnancy Failure†</th>
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<tbody>
<tr>
<td>Crown–rump length of ≥7 mm and no heartbeat</td>
<td>Crown–rump length of &lt;7 mm and no heartbeat</td>
</tr>
<tr>
<td>Mean sac diameter of ≥25 mm and no embryo</td>
<td>Mean sac diameter of 16–24 mm and no embryo</td>
</tr>
<tr>
<td>Absence of embryo with heartbeat ≥2 wk after a scan that showed a gestational sac without a yolk sac</td>
<td>Absence of embryo with heartbeat 7–13 days after a scan that showed a gestational sac without a yolk sac</td>
</tr>
<tr>
<td>Absence of embryo with heartbeat ≥11 days after a scan that showed a gestational sac with a yolk sac</td>
<td>Absence of embryo with heartbeat 7–10 days after a scan that showed a gestational sac with a yolk sac</td>
</tr>
<tr>
<td>Absence of embryo ≥6 wk after last menstrual period</td>
<td>Absence of embryo ≥6 wk after last menstrual period</td>
</tr>
<tr>
<td>Empty amnion (amnion seen adjacent to yolk sac, with no visible embryo)</td>
<td></td>
</tr>
<tr>
<td>Enlarged yolk sac (&gt;7 mm)</td>
<td></td>
</tr>
<tr>
<td>Small gestational sac in relation to the size of the embryo (&lt;5 mm difference between mean sac diameter and crown–rump length)</td>
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</table>

* Criteria are from the Society of Radiologists in Ultrasound Multispecialty Consensus Conference on Early First Trimester Diagnosis of Miscarriage and Exclusion of a Viable Intrauterine Pregnancy, October 2012.
† When there are findings suspicious for pregnancy failure, follow-up ultrasonography ± 7 to 10 days to assess the pregnancy for viability is generally appropriate.