Miscarriage Management

Office Evaluation and Management of Early Pregnancy Loss

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Adapted with permission from Reproductive Health Access Project

reproductive health access project

Disclosures

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Learning Objectives

- Conduct a history and physical exam for first trimester bleeding to help distinguish normal from abnormal pregnancies
- Interpret ultrasound and labs results to diagnose early pregnancy loss (EPL)
- Describe the three options for management of EPL
    - Expectant Management
    - Medical Management
    - Surgical Management

Audience Questions

- Do you diagnose miscarriage in your office?
- Do you do expectant management? Medication management? Surgical management?
- Do you have the capability to do ultrasound for early pregnancy in your office?

Terminology

- Miscarriage
- Early pregnancy loss (EPL)
- Spontaneous abortion

Interchangeable for a nonviable pregnancy in the first trimester (<13 weeks of gestation); Preferred terminology is early pregnancy loss (EPL)

Additional Terminology

- Threatened Abortion
- Incomplete Abortion
- Missed Abortion
- Anembryonic Pregnancy
- Embryonic or Fetal Demise
- Ectopic Pregnancy
- Pregnancy of Unknown Location (PUL)

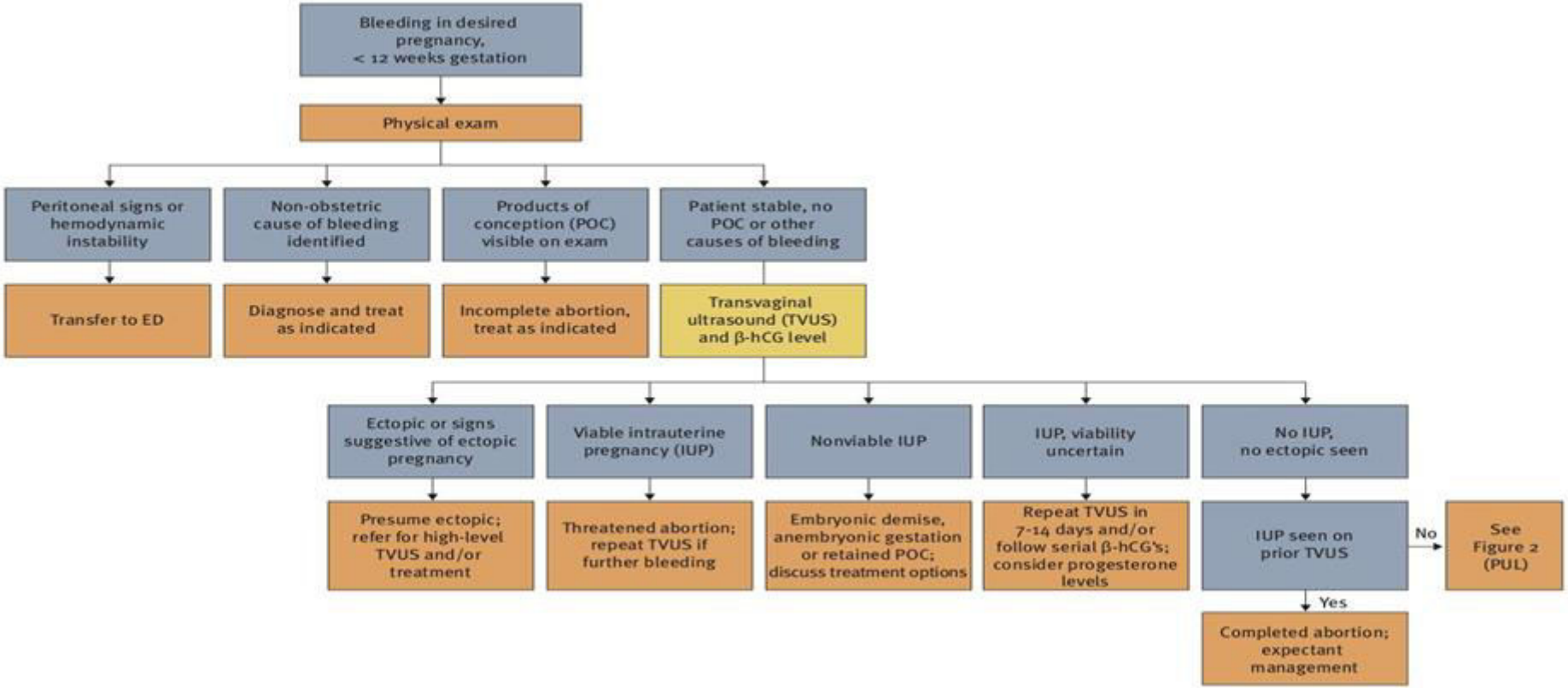
Epidemiology

- 1 in 4 women will experience EPL
- Up to 15-20% of diagnosed pregnancies
- 50% caused by chromosomal abnormalities
- The most common risk factors are advanced maternal age and a previous pregnancy loss

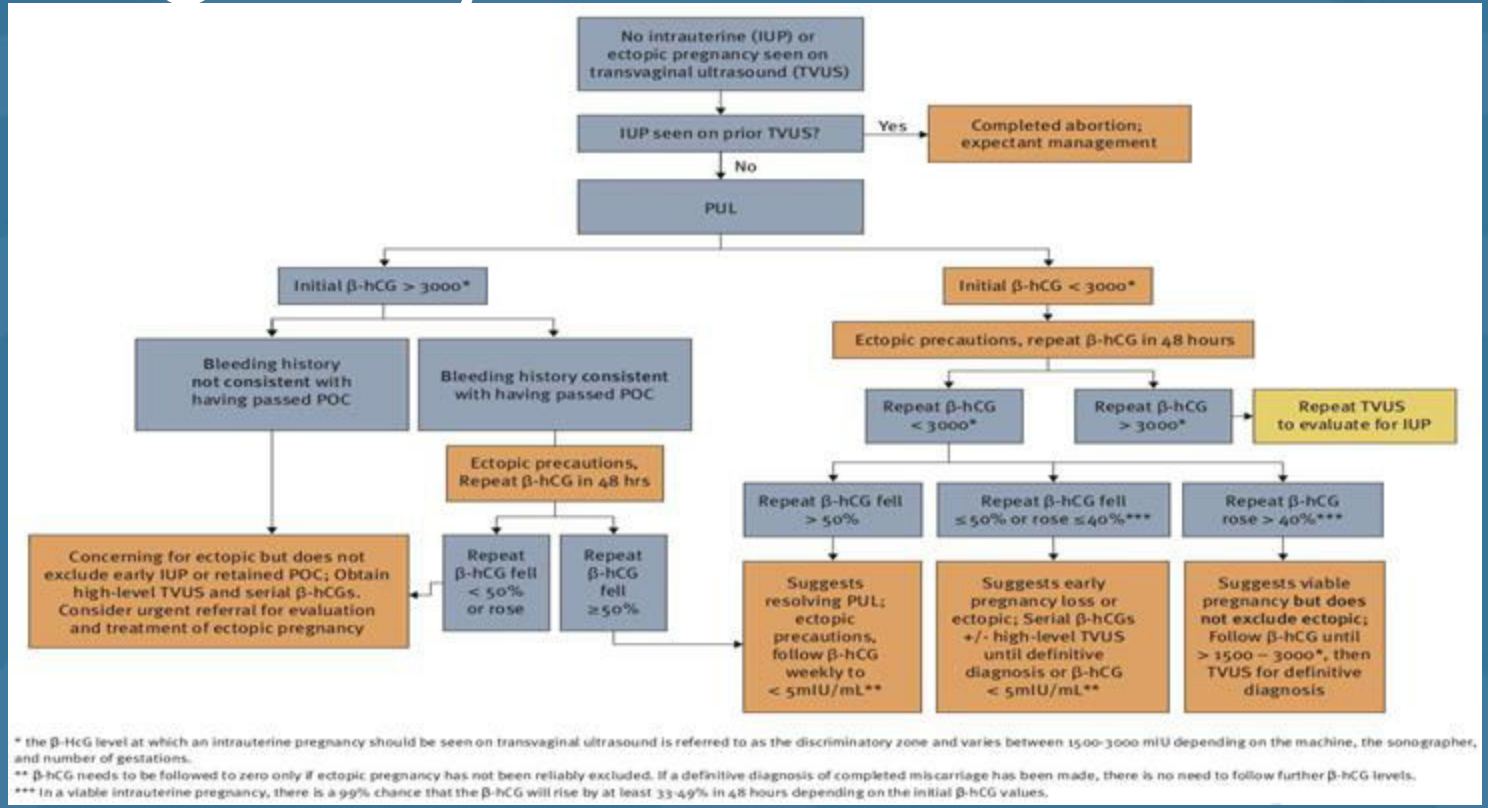
Signs and Symptoms of EPL

- Vaginal bleeding
- Pelvic pain or cramping
- Absent fetal heart tones on Doppler when pregnancy should be > 10 weeks
- Size-dates discrepancy on bimanual exam
- POCs seen by physician at cervical os or in vaginal vault on speculum exam

1st Trimester Bleeding Algorithm



Algorithm for Diagnosis of Pregnancy of Unknown Location



* the β-HcG level at which an intrauterine pregnancy should be seen on transvaginal ultrasound is referred to as the discriminatory zone and varies between 1500-3000 mIU depending on the machine, the sonographer, and number of gestations.

** β-hCG needs to be followed to zero only if ectopic pregnancy has not been reliably excluded. If a definitive diagnosis of completed miscarriage has been made, there is no need to follow further β-hCG levels.

*** In a viable intrauterine pregnancy, there is a 99% chance that the β-hCG will rise by at least 33-49% in 48 hours depending on the initial β-hCG values.

Re-evaluation of Discriminatory and Threshold Values

Table 2. Discriminatory and Threshold Values: Serum β-Human Chorionic Gonadotropin Levels

	Current Study (99% Predicted Probability of Detection, Milli-International Units/mL, Reported as Third International Standard)	Prior Studies[4–14] (Milli-International Units/mL Reported as First International Reference Preparation or Third International Standard)
Discriminatory values		
Gestational sac	3,510	1,000–2,000
Yolk sac	17,716	7,200
Fetal pole	47,685	5,100–10,800
Threshold values		
Gestational sac	390	500–1,000
Yolk sac	1,094	5,600
Fetal pole	1,394	24,000

Connelly Obstet Gynecol 2013;121:65–70

Diagnosis – Ultrasound Findings

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

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

NEJM 2013

Diagnosis – Ultrasound Findings

Classification	Vaginal bleeding	Endometrial thickness	Products of conception seen on ultrasound
Complete early pregnancy loss	Little or none	Any, though typically < 15mm	None
Incomplete early pregnancy loss	Little or none	Any	Heterogenous tissues (with or without a gestational sac) distorting the endometrial midline
Embryonic or fetal demise	Yes or no	Any	Gestational sac with fetal tissue (i.e., fetal pole or yolk sac) present, meeting ultrasound criteria for SAB (i.e. >7 mm with no FH)
An embryonic pregnancy	Yes or no	Any	Gestational sac without fetal tissue (i.e. no fetal pole or yolk sac) present, meeting ultrasound criteria for SAB (i.e. MSD > 25 mm without yolk sac)

Adapted from multiple sources

Outpatient Management

Expectant

Watchful Waiting

Medication

Mifepristone*

+

Misoprostol

Procedure

Manual vacuum aspiration (MVA)

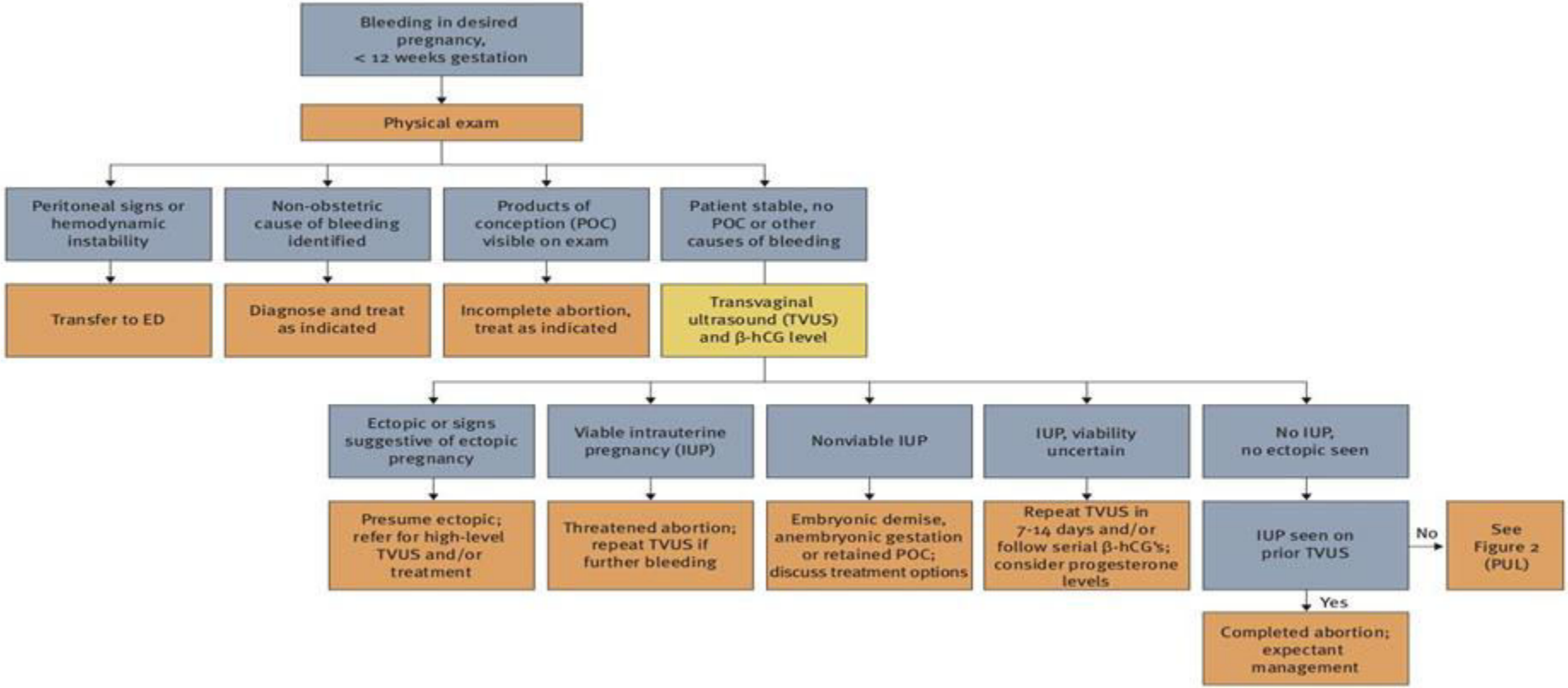
** Mifepristone is not always available. With mifepristone, the success rate is 84% overall. With only misoprostol, the success rate is 67% overall.*

Patient Case: Jennifer

- 22 years old
- LMP was 7 weeks ago
- Positive urine pregnancy
- She is having some vaginal bleeding

Additional history? And on physical?

First Trimester Bleeding

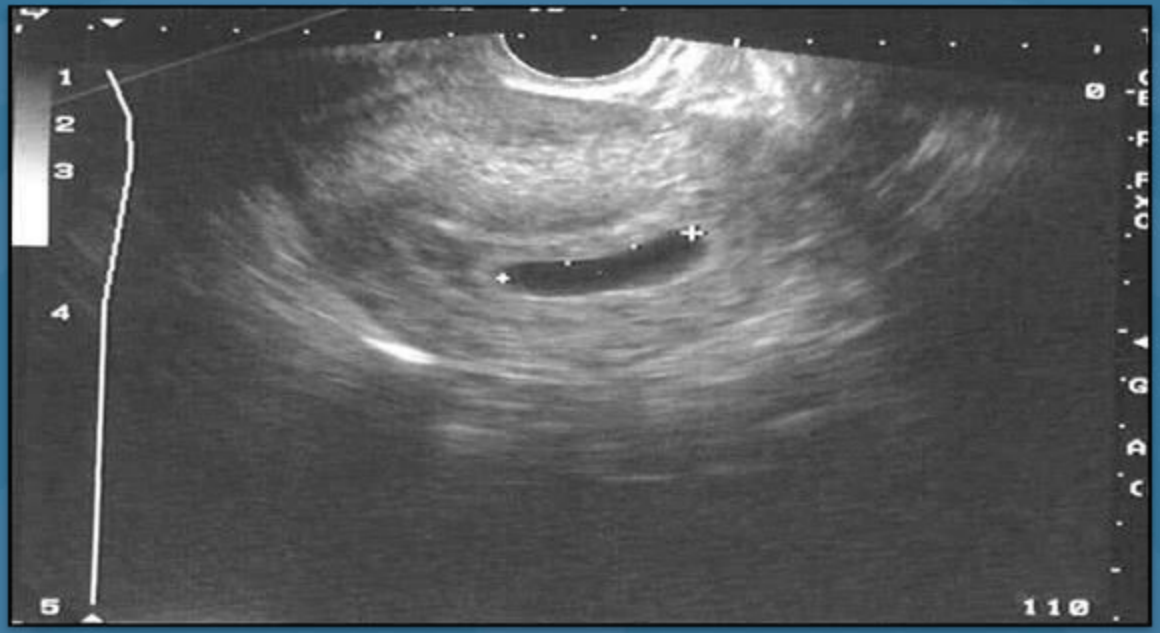


Audience Question

What would your next step be?

- Transvaginal US
- Beta HCG
- Send patient to the ED
- No further work up, follow up in 1 week

Jennifer's Ultrasound



Anembryonic Gestation

Mean sac diameter >25 mm with no embryo

Diagnosis- Ultrasound Findings

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NEJM 2013

Back to Jennifer…

What does she need to know? Discuss with your neighbor

- This is not her fault
- She can decide on the management option

Expectant Management

Success of Expectant Management

Group	N	Complete Day 7	Complete Day 14	Success Day 49
Incomplete	221	117 (53%)	185 (84%)	201 (91%)
Fetal demise	138	41 (30%)	81 (59%)	105 (76%)
Anembryonic	92	23 (25%)	48 (52%)	61 (66%)
TOTAL	**451**	**181 (40%)**	**314 (70%)**	**367 (81%)**

Luise C, et al. BMJ 2002; 324(7342):873-5.

Risks and Benefits of Expectant Management

Risks

- Timing not predictable
- Less effective
- Infection (rare)
- Need for emergent uterine aspiration (rare)
- Hemorrhage/transfusion (very rare)

Benefits

- Noninvasive
- More private
- More “natural”
- Inexpensive
- No medication side effects
- Availability

Patient Instructions: Expectant Management

- Expect cramping and heavy bleeding
- Pain control: ibuprofen, low dose narcotic, heating pad
- Call for “heavy bleeding”: soaking through ≥ 2 pads per hour for two hours in a row
- Give contact information for reaching provider
- Patient does NOT need to bring products of conception back to the provider

Medical Management: Mifepristone & Misoprostol

Jennifer gets tired of waiting

Medical Management

Risks

- Side effects from medications
- Infection (rare)
- Need for aspiration (rare)
- Hemorrhage or transfusion (rare)
- Mifepristone not available widely

Benefits

- Timing of bleeding more predictable than expectant management
- Noninvasive
- Private
- Inexpensive
- Flexible timing

Mifepristone + Misoprostol

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 JUNE 7, 2018 VOL. 378 NO. 23

Mifepristone Pretreatment for the Medical Management of Early Pregnancy Loss

Courtney A. Schreiber, M.D., M.P.H., Mitchell D. Creinin, M.D., Jessica Atrio, M.D., Sarita Sonalkar, M.D., M.P.H., Sarah J. Ratcliffe, Ph.D., and Kurt T. Barnhart, M.D., M.S.C.E.

Success Rates with Misoprostol Alone vs Mifepristone and Misoprostol

Medical management can be done with misoprostol alone or with the combination of mifepristone followed by misoprostol 24 hours later.

Success Rate (expulsion of gestational sac) by day 2	Misoprostol Alone	Mifepristone and Misoprostol
All subcategories of EPL	67%	84%
Embryonic demise	68%	85%
Anembryonic	65%	80%

Schrieber, C. et al. NEJM Vol. 378, 6/2018.

Guidelines for Medical Management

1. Candidates

   Those with diagnosis of nonviable intrauterine pregnancy less than 12.6 weeks by ultrasound

2. Labs
   - Rh screen (if status is not available)
   - Hematocrit
   - Quantitative serum hCG (quant not always needed if ultrasound diagnosis is definitive)
   - Consider gonorrhea/chlamydia if patient is at risk

3. Consent forms

   Danco mifeprex agreement; consider additional evidence-based consent form

Candidates for Medical Management

Eligibility criteria

Per UNM Guidelines

- Pregnancy loss measuring <12.6 weeks*
- Hemoglobin >9.5 mg/dL*
- SBP <160 mmHg and DBP <95 mmHg
- Clinically stable

*inclusion criteria for NEJM study

Exclusion criteria

- Molar or ectopic pregnancy
- Coagulopathy, anticoagulation, bleeding disorder
- Significant cardiovascular disease
- IUD in place (remove IUD)
- Uncontrolled seizure disorder
- Chronic systemic corticosteroid usel or Adrenal disease
- Glaucoma
- Sickle cell disease
- Allergy to medications

Guidelines for Medical Management

1. Mifepristone 200mg (one tab) orally
   - Dispensed in the office
   - Patient instructed to take when convenient
2. Misoprostol 800mcg (four tabs) vaginally or buccal
   - If prescribed with mifepristone, use 24-48 hours following mifepristone*
   - If prescribed alone, use when convenient
   - Repeat misoprostol dose in 24 hours if no bleeding or only light bleeding
3. Pain management
   - Ibuprofen 600mg Q6 hours
   - A few tablets of narcotics available if needed

*Alternative regimens exist

Side Effects of Misoprostol

- Bleeding
- Cramping
- Low grade fevers and/or chills
- Nausea and vomiting
- Diarrhea

All side effects should resolve within 24 hours

Patient Instructions

- If taking vaginally, lie down for 30 minutes after placing; okay if medication falls out after 30 minutes
- If taking buccally, allow to dissolve for 30 minutes
- Warning signs same as for expectant management:
  - Call for “heavy bleeding”, fever, purulent vaginal discharge, or uncontrolled pain not improved with medication
  - Patient does NOT need to bring products of conception back to the provider
  - Contact information for reaching provider

Patient Instructions

Pharmacist may refuse to fill prescription for Misoprostol as conscientious objection

What Do You Need to Start Using Medication for EPL in Your Practice?

- A plan for when medication doesn't work
  - Office aspiration or referral
- Patient handouts
- Danco consent form
- Order mifepristone to stock in office
- Clinical guidelines
- On-call group all familiar with medical management

Resource for handouts: www.reproductiveaccess.org

How to provide Mifepristone in your clinic

www.earyoptionpill.com

- Healthcare provider fills out Prescriber Agreement Form, faxes to Danco*
- Danco contacts provider to set up account

*this is a one time only process, subsequent orders may be phoned in; usually receive orders within 24hrs

Diagnosing Completion After Medical Management of EPL

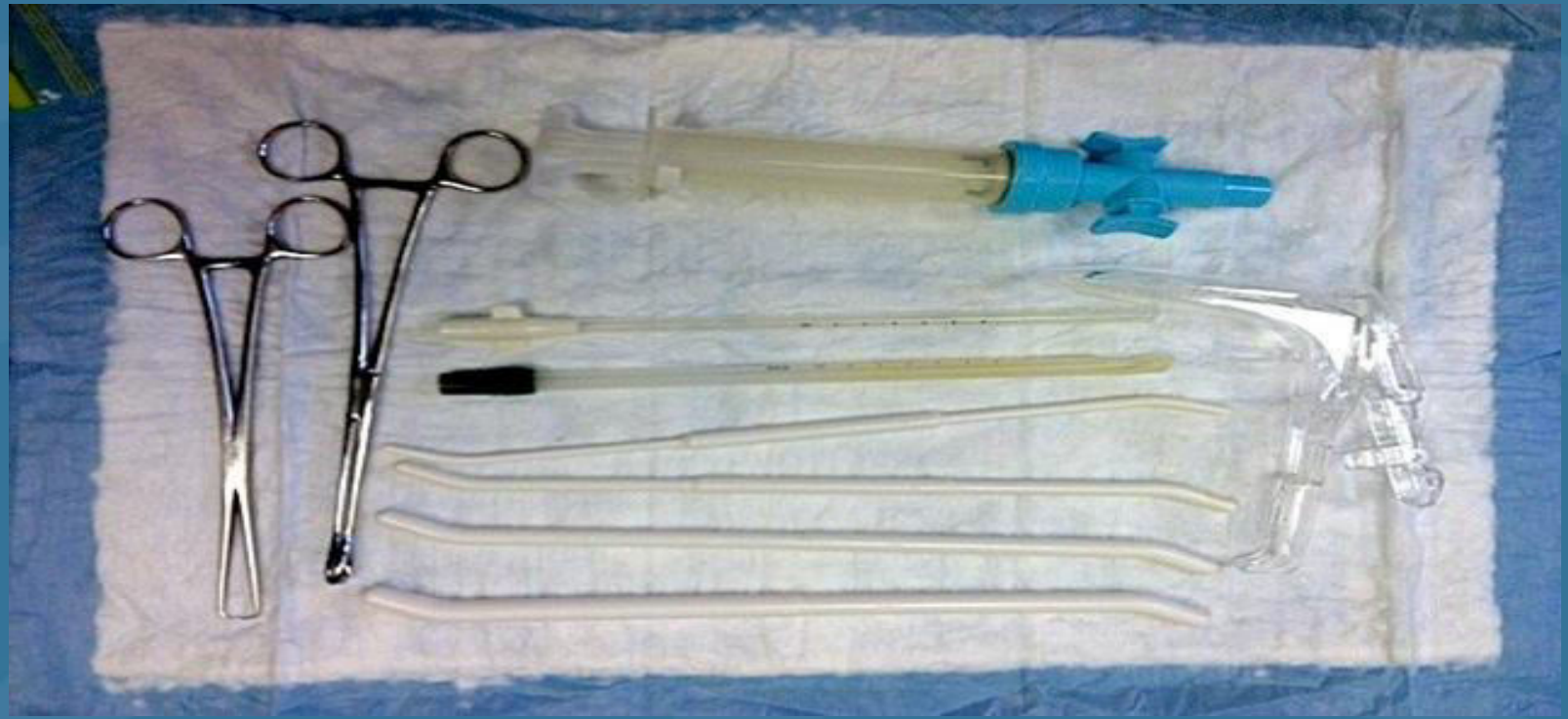
- Quantitative bHCG drop of more than 50% by 48 hours or 80% by 7 days
- Vaginal ultrasound with no sac or pregnancy after prior ultrasound documenting intrauterine pregnancy

Office Procedure Option

Manual Vacuum Aspiration (MVA)

- Sharp curettage (D & C) no longer an acceptable option due to higher complication rates

MVA Instruments & Supplies



Advantages to Office MVA

- Avoid repeated exams that occur in hospital
- Cost
- Avoid cumbersome OR protocols (NPO requirements, discharge criteria)
- Reduced wait time, OR scheduling difficulties
- Personalized care
- Convenience, privacy, patient autonomy

Key Learning Points

- There are three office options to be offered for miscarriage management:
  - Expectant
  - Medical (mifepristone and misoprostol)
  - Procedure (MVA)
- Mental health outcomes for patients are best when they are involved in the decision-making around their care

Resources

PREGNANCY LOSS (MISCARRIAGE)

WHAT IS PREGNANCY LOSS OR MISCARRIAGE?

Pregnancy loss, often called miscarriage, happens when a pregnancy stops growing. This is very common. About 1 in 4 pregnancies miscarry, mostly in the first 3 months.

WHAT CAUSES PREGNANCY LOSS?

A pregnancy loss is almost never caused by something you did. Past abortions, sex, exercise, mild falls, spicy foods, and most medications do not cause miscarriage. There is a higher chance of a miscarriage with older age, some chronic illnesses, some infections, changes in the uterus, and severe injury.

When a pregnancy starts, cells divide fast to make an embryo, and sometimes errors occur. Your body notices this, and the pregnancy stops growing.

Most types of miscarriage don't affect your chances of having a normal pregnancy in the future. If you have more than 2 miscarriages in a row, you may be at a greater risk of future pregnancy loss. You can talk to your clinician about this.

WHAT WILL I SEE AND FEEL WHEN I HAVE A PREGNANCY LOSS?

- Bleeding or spotting from the vagina
- Passing small or large clots
- Cramps or abdominal pain
- Back pressure or pain

These symptoms may be minor or severe. They may last a few days or weeks.

Contact your clinician for a visit as soon as you notice bleeding, cramping, and/or pain.

These symptoms can be part of a normal pregnancy, but it is a good idea to have more tests done. If you have very heavy bleeding or a fever above 101F, go to the emergency room.

WHAT HAPPENS DURING A PREGNANCY LOSS?

During a miscarriage, the pregnancy leaves the uterus through the cervix and the vagina.

A clinician can do an ultrasound image of the uterus to find out what is going on. If a miscarriage has started, it is not possible to stop your body from continuing to pass the pregnancy tissue.

If the pregnancy tissue does not pass on its own, or if you would prefer to help your body pass the pregnancy more quickly, you have options. Your clinician can give you a medication that you can take at home to help pass the tissue. You can also have a procedure in the health center to remove the pregnancy tissue with gentle suction.

AFTER A PREGNANCY LOSS:

Pregnancy loss can be hard. It is okay to give yourself time to heal and check in with your emotions. There is no right or wrong way to feel, and there is no "normal" amount of time that you will need to recover. Your period will return in 4-8 weeks.

Speak with your clinician to learn how to prevent another pregnancy until you are ready, or about becoming pregnant again. If you have a hard time going back to your normal activities, speak with your clinician so that you can get the support you need. You can also call the All-Options Support Talkline toll-free at 1-888-493-0092 for peer-based counseling and support.

August 2017 / www.reproductiveaccess.org

	Watch and Wait	Medication	Suction Procedure
How does it work?	You wait for the pregnancy tissue to pass, which happens with cramping and bleeding with clots.	Pills called misoprostol help to make the tissue pass. You use these pills at home.	A health care provider removes the pregnancy tissue using a simple office procedure.
What will happen?	You wait for the cramping and bleeding to happen. You won't know when it will start. The bleeding and cramping is most likely heavier than a period and lasts 2-6 hours. Lighter bleeding often lasts 1 to 2 weeks and it may stop and start a few times.	You will place the pills in your vagina at a time you choose after you take some pain pills. The pills may cause nausea. You will have heavy cramping and bleeding about 2-6 hours after taking the pills. The bleeding may be much heavier than a period. Lighter bleeding often lasts 1 to 2 weeks and it may stop and start a few times.	The procedure takes place in the office. It takes 5–10 minutes. Your health care provider puts instruments in your vagina and uterus to remove the tissue. You will have light bleeding and cramping for 3-7 days.
How painful is it?	You will have intense cramping. Pain pills and a heating pad can help relieve painful cramps.	You will have intense cramping. Pain pills and a heating pad can help relieve painful cramps.	You may have mild to strong cramps during the procedure. Medication given before the procedure helps.
How well does it work?	This works 66–90% of the time, depending upon the type of miscarriage you have.	This works 80–90% of the time, depending upon the type of miscarriage you have.	This works 98–100% of the time, depending upon the type of miscarriage you have.
What if it takes too long or doesn't work?	If it takes too long, you can return to your health care provider at any time for pills or a suction procedure.	If it didn't work or takes too long, you can return for a suction procedure or try another round of the pills.	In the rare case that it doesn't work, you can return for another suction procedure.
Is it safe?	**Yes.** All three treatment options are safe.		
Can I still have children afterwards?	**Yes.** These treatments don't prevent you from getting pregnant or staying pregnant in the future. Once the miscarriage is over you can start trying to get pregnant as soon as you feel ready.		
What caused the miscarriage?	You did not make it happen. A miscarriage is nature's way of ending a pregnancy that would not be healthy. Miscarriage is **not** caused by stress, sports, foods or sex.		

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