Do Nothing
Do Something
Aspirate:
Management Of Early Pregnancy Loss

Sarah Prager, MD, MAS

Department of Obstetrics and Gynecology
University of Washington

February 23, 2017

Disclosure

- I train providers in Nexplanon insertion and removal
- I do not receive any honoraria for this

Objectives

By the end of this workshop participants will be able to:

1. Understand diagnosis of early pregnancy loss (EPL)
2. Describe EPL management options in a clinic or the ED.
3. Describe the uterine evacuation procedure using the manual uterine aspirator (MUA).
4. Demonstrate the use of MUA for uterine evacuation using papayas as simulation models.
5. Express an awareness of their own values related to pregnancy and EPL management.

TEAMM Training, Education, & Advocacy in Miscarriage Management

Nomenclature

Early Pregnancy Loss/Failure (EPL/EPF)
Spontaneous Abortion (SAb)
Miscarriage

These are all used interchangeably!

Manual Uterine Aspiration/Aspirator (MUA)
Manual Vacuum Aspiration/Aspirator (MVA)
Uterine Evacuation
Suction D&C/D&C/dilation and curettage

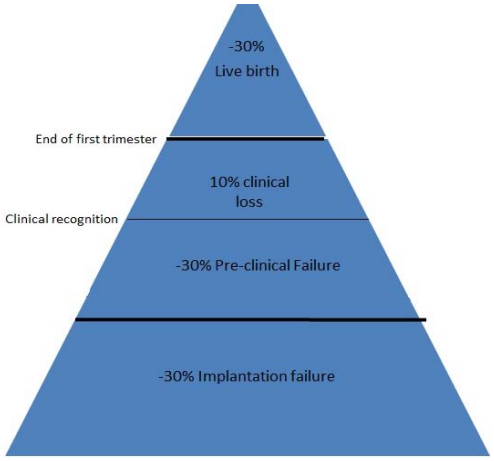
TEAMM Training, Education, & Advocacy in Miscarriage Management

Background

- Early Pregnancy Loss (EPL) is the most common complication of early pregnancy
  - 8–20% clinically recognized pregnancies
  - 13–26% all pregnancies
  - ~ 800,000 EPLs each year in the US
- 80% of EPLs occur in 1st trimester
  - Many women with EPL first contact medical care through the emergency room

TEAMM Training, Education, & Advocacy in Miscarriage Management

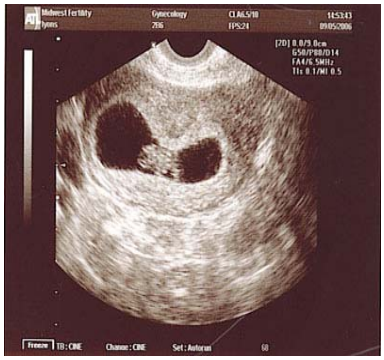
Imperfect obstetrics: most don't continue



Brown S, Miscarriage and its associations. Sem Repro Med.

Samantha

- 26 yo G2P1 presents to the emergency room with vaginal bleeding after a positive home pregnancy test. An ultrasound shows a CRL of 7mm but no cardiac activity.
- She wants to know why this happened.

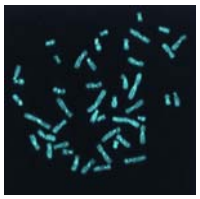


Risk Factors for EPL

- Age
- Prior SAb
- Smoking
- Alcohol
- Caffeine *(controversial)*
- Maternal BMI <18.5 or >25
- Celiac disease *(untreated)*
- Cocaine
- NSAIDs
- High gravidity
- Fever
- Low folate levels

Etiology

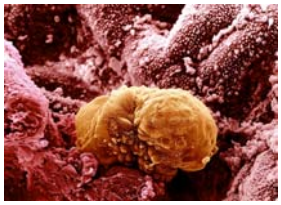
- 33% anembryonic
- 50% due to chromosomal abnormalities
  - Autosomal trisomies 52%
  - Monosomy X 19%
  - Polyploidies 22%
  - Other 7%
- Host factors
  - Structural abnormalities
  - Maternal infection/endocrinopathy/coagulopathy
- Unexplained



TEAMM Training, Education, & Advocacy in Miscarriage Management

Normal Implantation & Development

- Implantation:
  - 5-7 days after fertilization
  - Takes ~72 hours
  - Invasion of trophoblast into decidua
- Embryonic disc:
  - 1 wk post-implantation
  - If no embryonic disc, trophoblast still grows, but no embryo *(anembryonic pregnancy)*
- Embryonic disc embryonic/fetal pole



TEAMM Training, Education, & Advocacy in Miscarriage Management

Milestone of embryology as assessed by TVUS

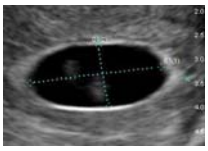
Timing of first appearance of gestational landmarks on transvaginal ultrasound examination

Landmark	First appearance on transvaginal ultrasound examination
Gestational sac	4.5 to 5 weeks
Yolk sac	5 weeks
Cardiac activity	5.5 to 6 weeks
Measurable crown-rump length	6 weeks

UpToDate®

U/S Dating in Normal Pregnancy

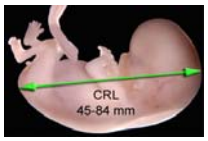
Gestational Age *(days)* =



Mean Sac Diameter *(mm)* + 30

OR

Crown-Rump Length *(mm)* + 42



Clinical Presentation of EPL

- Bleeding
- Pain/cramping
- Falling or abnormally rising ßhCG
- Decreased symptoms of pregnancy
- No symptoms at all!

TEAMM Training, Education, & Advocacy in Miscarriage Management

The American College of Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

PRACTICE BULLETIN

CLINICAL MANAGEMENT GUIDELINES FOR OBSTETRICIAN–GYNECOLOGISTS

NUMBER 150, MAY 2015

Early Pregnancy Loss

Early pregnancy loss, or loss of an intrauterine pregnancy within the first trimester, is encountered commonly in clinical practice. Obstetricians and gynecologists should understand the use of various diagnostic tools to differentiate between viable and nonviable pregnancies and offer the full range of therapeutic options to patients, including expectant, medical, and surgical management. The purpose of this Practice Bulletin is to review diagnostic approaches and describe options for the management of early pregnancy loss.

Society of Radiologists in Ultrasound Guidelines for Transvaginal Ultrasonographic Diagnosis of Early Pregnancy Loss*

Findings Diagnostic of Early Pregnancy Loss†	Findings Suggestive, but Not Diagnostic, of Early Pregnancy Loss‡
Crown–rump length of 7 mm or greater and no heartbeat	Crown–rump length of less than 7 mm and no heartbeat
Mean sac diameter of 25 mm or greater and no embryo	Mean sac diameter of 16–24 mm and no embryo
Absence of embryo with heartbeat 2 weeks or more after a scan that showed a gestational sac without a yolk sac	Absence of embryo with heartbeat 7–13 days after an ultrasound scan that showed a gestational sac without a yolk sac
Absence of embryo with heartbeat 11 days or more after a scan that showed a gestational sac with a yolk sac	Absence of embryo with heartbeat 7–10 days after an ultrasound scan that showed a gestational sac with a yolk sac
	Absence of embryo for 6 weeks or longer after last menstrual period
	Empty amnion (amnion seen adjacent to yolk sac, with no visible embryo)
	Enlarged yolk sac (greater than 7 mm)
	Small gestational sac in relation to the size of the embryo (less than 5 mm difference between mean sac diameter and crown–rump length)

*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.

†These are the radiologic criteria only and do not replace clinical judgment.

‡When there are findings suspicious for early pregnancy loss, follow-up ultrasonography at 7–10 days to assess the pregnancy for viability is generally appropriate.

Reprinted from Doubilet PM, Benson CB, Bourne T, Blaivas M, Barnhart KT, Benacerraf BR, et al. Diagnostic criteria for nonviable pregnancy early in the first trimester. Society of Radiologists in Ultrasound Multispecialty Panel on Early First Trimester Diagnosis of Miscarriage and Exclusion of a Viable Intrauterine Pregnancy. N Engl J Med 2013;369:1443–51.

Samantha

26 yo G2P1, CRL of 7mm but no cardiac activity

Samantha and her partner request information on all the treatment options. You confirm the rest of her history.

Past Medical History: wisdom teeth removed

Ob History: term vaginal delivery without complication

Allergies: no known drug allergies

TEAMM Training, Education, & Advocacy in Miscarriage Management

Management Options

Do Nothing:	Expectant management
Do Something:	Medical management
Aspirate:	Uterine Aspiration

Sotiriadis A, Obstet Gynecol 2005
Nanda K, Cochrane Database Syst Rev 2006

TEAMM Training, Education, & Advocacy in Miscarriage Management

Do Nothing

Expectant Management

- Requirements for therapy:
  - <13 weeks gestation
  - Stable vital signs
  - No evidence infection
- What to expect:
  - Most expel within 1st 2 weeks after diagnosis
  - Prolonged follow-up may be needed
  - Acceptable and safe to wait up to 4 weeks post-diagnosis
  - If a woman comes to the ED within 2-4 weeks of a miscarriage or abortion, a pregnancy test will likely still be positive and does NOT necessarily indicate a continuing pregnancy or incompletely treated EPL.

TEAMM Training, Education, & Advocacy in Miscarriage Management

Pain Management

- Miscarriage is often painful
- For patients wanting expectant or medical management, give pain medications for home use
  - NSAID
    - Ibuprofen 800 mg q 8
    - Naproxen 500 mg q 12
  - Narcotic of choice (Vicodin or Percocet, etc)
- Treat pain in the ED as needed

Outcomes

Expectant Management

• Overall success rate	81%
• Success rates vary by type of miscarriage *(helpful to tailor counseling)*	
Incomplete/inevitable abortion	91%
Embryonic demise	76%
Anembryonic pregnancies	66%

Luise C, Ultrasound Obstet Gynecol 2002

TEAMM Training, Education, & Advocacy in Miscarriage Management

What is Success?

Definitions Used in Studies

- ≤15 mm endometrial thickness (ET)
  3 days to 6 weeks after diagnosis
- No vaginal bleeding
- Negative urine hCG

Problems with ET Cut-off

- No clear rationale for this cut-off
- Study of 80 women with successful medical abortion
  - Mean ET at 24 hours 17.5 mm (7.6–29 mm)
  - At one week 15% with ET >16 mm
- Study of medical management after miscarriage
  - 86% success rate if use absence of gestational sac
  - 51% success rate if use ET ≤15 mm

Harwood B, Contraception 2001
Reynolds A, Eur. J Obstet Gynecol Reproduct. Biol 2005

When to intervene for Expectant Management?

- Continued gestational sac
- Clinical symptoms
- Patient preference
- Time (?)
- Vaginal bleeding and positive UPT are possible for 2–4 weeks
  - Poor measures of success

Samantha

26 yo G2P1, CRL of 7mm but no cardiac activity

Samantha is continuing to bleed, though not heavily. She appears anxious about expectant management and shares with you that she really needs to do something before a follow up visit with her doctor.

Do Something

Medical Management

- Misoprostol

- Misoprostol + Mifepristone

- Misoprostol + Methotrexate

No medical regimen for management of EPL is FDA approved

Medical Management

Requirement for Therapy

- <13 weeks gestation
- Stable vital signs
- No evidence of infection
- No allergies to medications used
- Adequate counseling and patient acceptance of side effects

TEAMM Training, Education, & Advocacy in Miscarriage Management

Misoprostol

- Prostoglandin E1 analogue
- FDA approved for prevention of gastric ulcers
- Used off-label for many Ob/Gyn indications:
  - Labor induction
  - Cervical ripening
  - Medical abortion *(with mifepristone)*
  - Prevention/treatment of postpartum hemorrhage
- Can be administered by oral, buccal, sublingual, vaginal and rectal routes

Chen B, Clin Obstet Gynecol 2007

TEAMM Training, Education, & Advocacy in Miscarriage Management

Why Misoprostol?

- Do something while still avoiding a procedure
- Cost effective
- Stable at room temperature
- Readily available

TEAMM Training, Education, & Advocacy in Miscarriage Management

Misoprostol Dosing

Medical Management

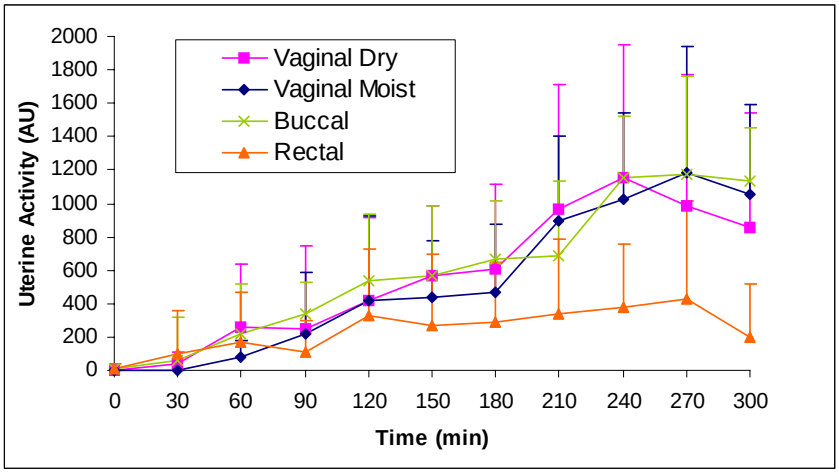
- 800 mcg per vagina or buccal
- Repeat x 1 at 12–24 hours, if incomplete
  - Occasionally repeat more than once
- Measure success as with expectant management
- Intervene with Uterine Aspiration management as with expectant management
- Success rate depends on type of miscarriage
  - 100% with incomplete abortion
  - 87% for all others

Wood SL, Obstet Gynecol 2002; Bagratee JS, Hum Reproduct 2004;
Blohm F, BJOG: Int J Obstet Gynecol 2005.

TEAMM Training, Education, & Advocacy in Miscarriage Management

Uterine Activity Over 5 Hours

Misoprostol by Route of Administration



Meckstroth, Obstetrics and Gynecology, 2006.

Side Effects and Complications

Misoprostol vs. Placebo

Nausea/Vomiting: Increased with misoprostol (SL>oral>buccal>Rectal>vaginal)

Diarrhea: Increased with misoprostol (least with vaginal placement)

Pyrexia and shivering: increased with misoprostol (if persists past 8 hours, assess for infection)

Pain: More pain and analgesics needed in one study

Hemoglobin Concentration: No difference

Infection: No statistical difference placebo vs. misoprostol

- 90% women found medical management acceptable and would elect same treatment again

Wood SL, Obstet Gynecol 2002; Bagratee JS, Hum Reproduct 2004; Blohm F, BJOG: Int J Obstet Gynecol 2005

TEAMM Training, Education, & Advocacy in Miscarriage Management

Misoprostol Bottom Line

Medical management

- 800 mcg per vagina or buccal
- Repeat x 1 at 12–24 hours, if incomplete
  - Occasionally repeat more than once
- Measure success as with expectant management
- Intervene with Uterine Aspiration management if
  - Continued gestational sac
  - Clinical symptoms
  - Patient preference
  - Time (?)

TEAMM Training, Education, & Advocacy in Miscarriage Management

Mifepristone and Misoprostol
Medical Management

- ***Mifepristone:*** Progestin antagonist that binds to progestin receptor
  - Used with elective medical abortion to "destabilize" implantation site
    - Current evidence-based regimen: 200 mg mifepristone + 800 mcg misoprostol
- Success rates for mifepristone & misoprostol in EPL:
  - 52–84% *(observational trials, non-standard dose)*
  - 90–93% *(standard dose)*
- No direct comparison between misoprostol alone and mifepristone/misoprostol with standard dosing
- Mifepristone probably helps, use if you can easily

Gronlund A, Acta Obstet Gynaecol 1998; Nielsen S, Br J Obstet Gynaecol 1997; Niinimaki M, Fertility Sterility 2006; Schreiber CA, Contraception 2006

TEAMM Training, Education, & Advocacy in Miscarriage Management

Methotrexate and Misoprostol
Medical Management

- ***Methotrexate***
  - Folic acid antagonist
  - Cytotoxic to trophoblast
- Used in medical management for ectopic pregnancy
- Introduced in 1993 in combination with misoprostol to treat elective abortion medically
  - Success rates up to 98% *(misoprostol administered 7 days after methotrexate)*
- No data for use in early pregnancy loss

Creinin MD, Contraception 1993

TEAMM Training, Education, & Advocacy in Miscarriage Management

Samantha

26 yo G2P1, CRL of 7mm but no cardiac activity

Samantha opts to try misoprostol but returns to the ED 7 days later after checking a home pregnancy test and finding it still positive. She is worried the misoprostol didn't work.

Samantha says that she had a period of heavy bleeding and is now spotting. Her cramping has resolved. She has noted a marked decrease in breast tenderness and nausea.

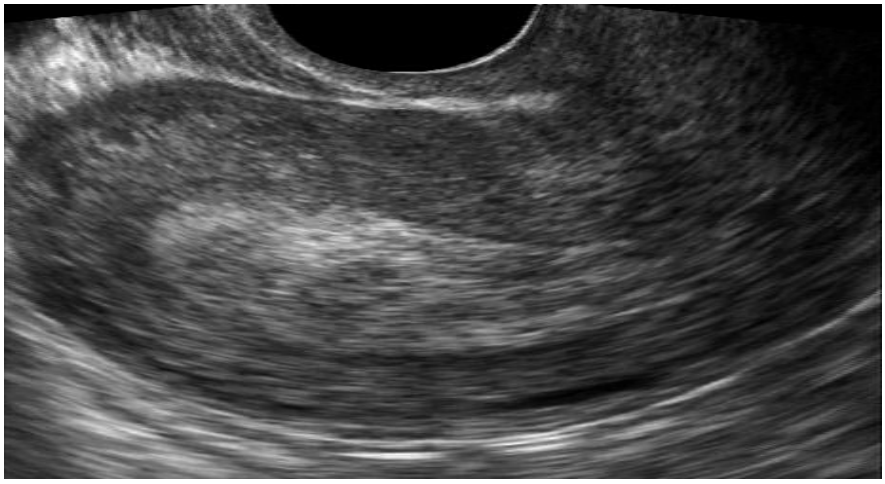
Her ultrasound shows a uniform endometrial stripe measuring 30mm in its greatest width.

Is she complete?

TEAMM Training, Education, & Advocacy in Miscarriage Management

Samantha

26 yo G2P1, CRL of 7mm but no cardiac activity



Rebecca

32 yo G3P2 at 8 weeks by LMP was diagnosed with a fetal demise on her ultrasound and presents to your clinic after 2 weeks of unsuccessful expectant management stating that she “needs her baby out”. She declines medical management and requests an aspiration procedure right then, as it’s making her very anxious to carry a dead fetus.

Rebecca

32 yo G3P2, 8 weeks LMP, fetal demise, 2 weeks of expectant management, requesting uterine aspiration

Is there any medical history you could elicit that would make you uncomfortable doing an aspiration procedure?

Uterine Aspiration Management

Early Pregnancy Loss

- Also called suction dilation and curettage (D&C)
  - Misleading term, prefer uterine aspiration or evacuation
- Who should have management with uterine aspiration?
  - Unstable
  - Significant medical morbidity
  - Infected
  - Very heavy bleeding
  - Anyone who WANTS immediate therapy

TEAMM Training, Education, & Advocacy in Miscarriage Management

Uterine Aspiration Management

Early Pregnancy Loss

BENEFITS	RISKS
Convenient timing Observed therapy High success rates (almost 100%)	Infection (1/200) Perforation (1/2000) Cervical trauma Uterine synechiae (very rare)

Infection Prophylaxis

Uterine Aspiration Management

- Periabortal antibiotics ↓ infection risk 42%
- No strong evidence on what to use
- Doxycycline *(1–14 doses)*
  - 100 mg bid x 7 days
  - 200 mg x 1 preop
  - 100 mg preop and 200 mg post op (ACOG recommendation)
- Azithromycin 1000 mg x 1
- Metronidazole:
  - Bacterial vaginosis
  - Trichomoniasis
  - Suspicious discharge
- Test for gonorrhea and chlamydia per CDC guidelines

Sawaya GF, Obstet Gynecol 1996; Prieto JA, Obstet Gynecol 1995; Achilis SL, Reeves MF, SFP Clinical Guideline, Contraception, 2011

TEAMM Training, Education, & Advocacy in Miscarriage Management

Comparison of Outcome by Method

Management of Early Pregnancy Loss

Factor	***Comparison of Methods***
Success rate Number differed by highly variable success rates reported for expectant management	Uterine Aspiration > Medical Medical ≥ Expectant
Resolution within 48 hrs	Uterine Aspiration > Medical > Expectant
Infection risk .2–3%	Expectant = Medical = Uterine Aspiration

Nanda K, Cochrane Database Syst Rev 2006; Nielsen S, Br J Obstet Gynaecol 1999; Shelly JM, Aust. NZ J Obstet Gynaecol 2005; Sotiriadis A, Obstet Gynecol 2005; Tinder J, (MIST) BMJ, 2006

TEAMM Training, Education, & Advocacy in Miscarriage Management

Patient Satisfaction
Management of Early Pregnancy Loss

- Meta-analysis: studies report high satisfaction with medical management
- *Caution:* Few studies looked at satisfaction
- Satisfaction depended on choice:
  - If women randomized — 55-74% satisfied
  - If women chose — 84-88% satisfied
  - Both were independent of method

Sotiriadis 2005

TEAMM Training, Education, & Advocacy in Miscarriage Management

Table 4. Adverse Events and Acceptability of Medical and Surgical Treatment of Early Pregnancy Failure.*

Variable	Misoprostol	Vacuum Aspiration	P Value†
Adverse event			
Hemorrhage requiring hospitalization with or without blood transfusion — % (no./total no.)	1 (5/488)	1 (1/148)	1.0
Hospitalization for endometritis — % (no./total no.)	<1 (2/488)	0 (0/148)	1.0
Fever (temperature ≥38.0°C [100.4°F]) — % (no./total no.)	3 (13/477)	4 (6/148)	0.41
Emergency visit to hospital within 24 hr after treatment — % (no./total no.)	3 (15/488)	2 (3/148)	0.59
Unscheduled hospital visits — % (no. of visits/total no. of patients)‡	23 (114/488)	17 (25/148)	0.09
Change in hemoglobin between day 1 and day 15 — g/dl§	−0.65±1.10	−0.18±0.89	<0.001
Decrease in hemoglobin ≥2 g/dl — % (no./total no.)§	9 (38/421)	4 (5/134)	0.05
Decrease in hemoglobin ≥3 g/dl — % (no./total no.)§	5 (19/421)	1 (1/134)	0.04
Nausea — % (no./total no.)¶	53 (250/472)	29 (41/141)	<0.001
Vomiting — % (no./total no.)¶	20 (96/475)	7 (10/142)	<0.001
Diarrhea — % (no./total no.)¶	24 (113/473)	10 (14/142)	<0.001
Abdominal pain — % (no./total no.)¶	99 (473/476)	95 (134/141)	<0.001
Pain-severity score¶‖	5.7±2.4	3.2±2.4	<0.001
Acceptability — % (no./total no.)			
Would probably or absolutely recommend this procedure	83 (379/456)	83 (125/150)	0.95
Would probably or absolutely use this treatment again	78 (357/456)	75 (112/150)	0.36

Zhang, NEJM 2005

Cost Analysis

A study estimating the economic consequences of expanding options for EPL treatment found that the cost per case was less for women in the expanded care model as compared with the usual care model.

Usual care	
Expectant	$1274.58 per case
OR evacuation	

Expanded care	
Expectant	$1033.29 per case
Medication	
Office evacuation	
OR evacuation	

Dalton VK, Liang A, Hutton DW, et al. Beyond usual care: the economic consequences of expanding treatment options in early pregnancy loss. Am J Obstet Gynecol 2015;212:177.e1-6.

TEAMM Training, Education, & Advocacy in Miscarriage Management

Cost Analysis

Medical management most cost effective

- 2 studies
- Misoprostol vs. Expectant vs. Uterine Aspiration:

$1000 $1172 $2007

Expectant management most cost effective

- MIST trial
- Expectant vs. Medical vs. Uterine Aspiration:

£1086 £1410 £1585

Doyle NM, Obstet. Gynecol 2004; You JH, Hum Reprod 2005; Petrou S, BJOG 2006

TEAMM Training, Education, & Advocacy in Miscarriage Management

Rebecca

32 yo G3P2, 8 weeks LMP, fetal demise, 2 weeks of expectant management, requesting uterine aspiration

Notify the OR and call OBGYN if needed?

Send to the emergency department for further evaluation/management?

Is this an emergency?

TEAMM Training, Education, & Advocacy in Miscarriage Management

Where to perform?

Uterine Aspiration Management

- Women with SAb in Canada:
  - 92.5% presenting to the ED are managed in the OR
  - 51% presenting to family physician have uterine aspiration

- Manual uterine aspiration (MUA) in outpatient setting (including the ED) can ↓ hospital costs by 41%
  - MUA also often called MVA (manual vacuum aspiration) – we use MUA so as not to have it confused with motor vehicle accidents

Weibe E, Fam Med 1998; Finer LB, Perspect Sexu Reproduct Health 2003; Blumenthal PD, Int J Gynaecol Obstet 1994

TEAMM Training, Education, & Advocacy in Miscarriage Management

Advantages

Keeping treatment in the ED Setting

- Simplify scheduling and reduce wait time
  - Average OR waiting time in UK-based study: 14 hours, with 42% of women not satisfied
- Save resources
- Avoid cumbersome OR protocols
  - Prolonged NPO requirements and discharge criteria

Demetroulis 2001; Lee and Slade 1996

TEAMM Training, Education, & Advocacy in Miscarriage Management

Moving Incomplete Abortion to Outpatient Setting

Johns Hopkins Study

Methods

- N = 35, incomplete 1st-trimester abortion
- Treatment comparison:

Procedure:	Manual Uterine Aspiration		Conventional care (Electric Uterine Aspiration)
Setting:	L&D	VS.	OR

Blumenthal and Remsburg, 1994

Moving Incomplete Abortion to Outpatient or Emergency Room Setting

Johns Hopkins Study

Results

- ↓ Anesthesia requirements
- ↓ Overall hospital stay, from 19 hours ➡ 6 hours
- ↓ Patient waiting time by 52%
- ↓ Procedure time, from 33 minutes ➡ 19 minutes
- ↓ Costs per case: $1,404 in OR
  $827 in L&D
  $200 or less in ER

Blumenthal 1994

TEAMM Training, Education, & Advocacy in Miscarriage Management

Use Outpatient/ED Management Cautiously in Women with…

- Uterine anomalies
- Coagulation problems
- Active pelvic infection
- Extreme anxiety
- Any condition causing patient to be medically unstable

*In an urgent/emergent setting, use the MUA in the office/ED as soon as possible.

TEAMM Training, Education, & Advocacy in Miscarriage Management

What is needed for outpatient/ED management?

- Ability to diagnose EPL
- Ability to counsel appropriately about the management options
- Ability to manage pain
- Appropriate equipment for uterine evacuation
- Ability/skills to perform uterine evacuation

TEAMM Training, Education, & Advocacy in Miscarriage Management

Counseling for MUA

Effective counseling occurs before, during, and after the procedure

- Prepare women for procedure-related effects
- Address women's concerns about future desired pregnancies

Breitbart V, Repass DC. J Am Med Womens Assoc. 2000.; Hogue CJ, et al. Epidemiol Rev. 1982; Steward FH, et al. 2004. Hyman AG, Castleman L. 2005

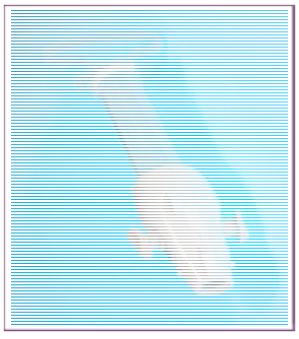
TEAMM Training, Education, & Advocacy in Miscarriage Management

Counseling for MUA

Quality of counseling → Patient satisfaction with care

Picker Institute. 1999.

What is a Manual Uterine Aspirator?



- Locking valve
- Portable and reusable
- Equivalent to electric pump
- Efficacy same as electric vacuum (98%–99%)
- Semi-flexible plastic cannula

Creinin MD, et al. Obstet Gynecol Surv. 2001.; Goldberg AB, et al. Obstet Gynecol. 2004. Hemlin J, et al. Acta Obstet Gynecol Scand. 2001.

Comparison

EUA to MUA

	EUA	MUA
Vacuum	Electric pump	Manual aspirator
Noise	Variable	Quiet
Portable	Not easily	Yes
Cannula	4–16 mm	4–12 mm
Capacity	350–1,200 cc	60 cc
Suction	Constant	Decreases to 80% (50 mL) as aspirator fills

Dean G, et al. Contraception. 2003.

TEAMM Training, Education, & Advocacy in Miscarriage Management

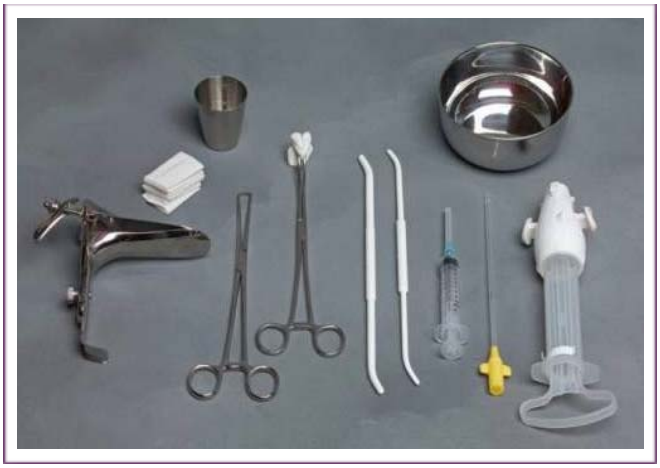
Clinical Indications for MUA

- Uterine evacuation in the first trimester:
  - Induced abortion
  - Spontaneous abortion/EPL
- Incomplete medication abortion
- Uterine sampling
- Post-abortal hematometra
- Hemorrhage

Creinin MD, et al. Obstet Gynecol Surv. 2001.; Edwards J, Creinin MD. Curr Probl Obstet Gynecol Fertil.1997.; Castleman LD et al. Contraception. 2006; MVA Label. Ipas. 2007.

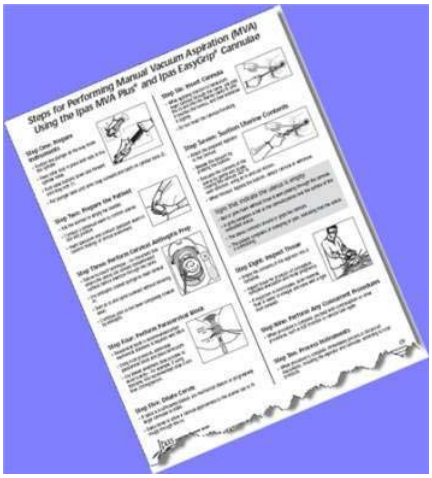
TEAMM Training, Education, & Advocacy in Miscarriage Management

MUA Instruments



Steps for Performing MUA

A step-by-step poster is available from the manufacturer to guide clinicians through the procedure. Please see handout in your folder entitle "Performing Manual Vacuum Aspiration (MVA). . ."



Complications with MUA

- Very rare
- Same as EUA
- May include:
  - Incomplete evacuation
  - Uterine or cervical injury
  - Infection
  - Hemorrhage
  - Vagal reaction

MVA Label. Ipas. 2004.

MUA vs. EUA Complication Rates

Methods

- Retrospective cohort study
- Uterine aspiration to 10wks
- Choice of method (MUA vs. EUA) up to physician
- n = 1,002 for MUA
- n = 724 for EUA

Complications

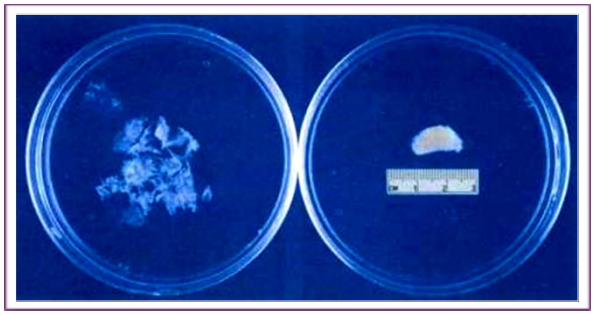
- 2.5% for MUA
- 2.1% for EUA (p = 0.56)
- No significant difference

*Elective, not spontaneous studies

Goldberg AB, et al. Obstet Gynecol. 2004.

Products of Conception (POC)

Procedure is complete when POC are identified.



Electric Suction Machine | Manual Uterine Aspirator

Edwards J, et al. Am J Obstet Gynecol. 1997.
MacIsaac L, et al. Am J Obstet Gynecol. 2000.

Patient Satisfaction

- Both EUA and MUA groups were highly satisfied
- No differences in:
  - Pain
  - Anxiety
  - Bleeding
  - Acceptability
  - Satisfaction
- More EUA patients were bothered by noise

Bird ST, et al. Contraception. 2003.; Dean G, et al. Contraception. 2003.; Edelman A, et al. Am J Obstet Gynecol. 2001.

TEAMM Training, Education, & Advocacy in Miscarriage Management

MUA Safety and Efficacy: Summary

MUA is simple and easily incorporated into clinic/ED setting.

Kinariwala, et al. Manual vacuum aspiration in the emergency department for management of early pregnancy failure. Am J Emerg Med. 2013 Jan;31(1):244-7

Rebecca

32 yo G3P2, 8 weeks LMP, fetal demise, 2 weeks of expectant management, requesting uterine aspiration

Rebecca is wanting to have her procedure right there in clinic, but she is concerned about the pain.

What can you tell her about pain management in an outpatient clinic?

Would it be different if she had presented directly to the emergency department for care?

Effective Pain Management

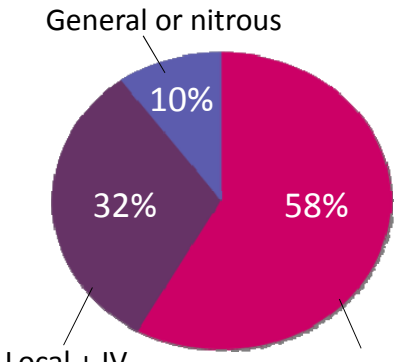
Pain is made worse by:

- Fearfulness
- Anxiety
- Depression

- Improve pain management:
  - Respectful, informed, and supportive staff
  - Warm, friendly environment
  - Gentle operative technique
  - Women's involvement
  - Effective pain medications

TEAMM Training, Education, & Advocacy in Miscarriage Management

Pain Management Techniques



With addition of:

- Respectful, informed, and supportive staff
- Focused breathing: 76%
- Visualization: 31%
- Localized massage: 14%

Lichtengerg ES, et al. Contraception. 2001.
Good M, et al. Pain Manag Nurs. 2002.

TEAMM Training, Education, & Advocacy in Miscarriage Management

Oral Pain Medications for Uterine Aspiration

- NSAID
  - Ibuprofen 800 mg
  - Naproxen 500 mg
- Benzodiazepine
  - Ativan 1-4 mg
  - Valium 2-10 mg
- Narcotic
  - Not routinely recommended
  - Doesn't increase pain control
  - Increases vomiting

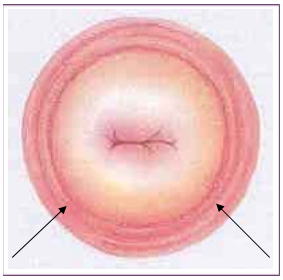
Micks E, et al. Hydrocodone-acetaminophen for pain control in first trimester surgical abortion: a randomized controlled trial. *Obstet Gynecol.* 2012 Nov; 120(5): 1060-9.

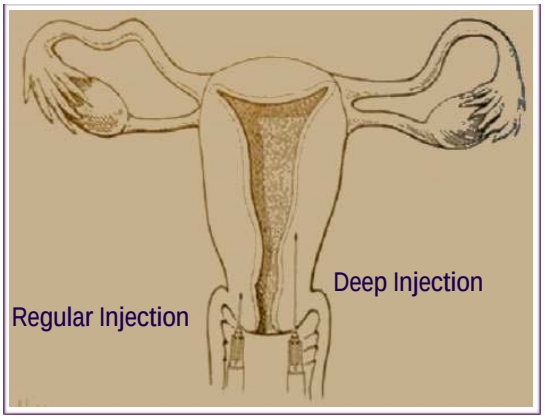
Efficacy of Ancillary Anesthesia

- Importance of psychological preparation and support
- Music as analgesia for abortion patients receiving paracervical block
  - 85% who wore headphones rated pain as "0,"
  - compared with 52% of controls
- Verbicaine ("Vocal Local")/Distraction Therapy

Shapiro AG, Cohen H. Contraception. 1975.
Stubblefield PG.Suppl Int J Gynecol Obstet. 1989.

Paracervical Block





1% Lidocaine 20 cc block
1cc at 12:00
10 cc at 4:00 and 8:00
½ deep and ½ tracking back through the cervix.

Castleman L, Mann C. 2002. Maltzer DS, et al. 1999.

TEAMM Training, Education, & Advocacy in Miscarriage Management

Sharp Curettage and Pain

- Requires increased dilatation
- Increases pain
- Not recommended for routine use after MUA

Forna F, Gulmezoglu AM. Cochrane Library. 2002.
WHO. 2003

TEAMM Training, Education, & Advocacy in Miscarriage Management

Ultrasound and MUA

- Not required for MUA
- Used by some providers routinely
- Use contingent on provider preference and experience

- You can use to help diagnose non-viable pregnancy prior to EPL management

Word Health Organization. 2003.

Rebecca

32 yo G3P2, 8 weeks LMP, fetal demise, 2 weeks of expectant management, requesting uterine aspiration

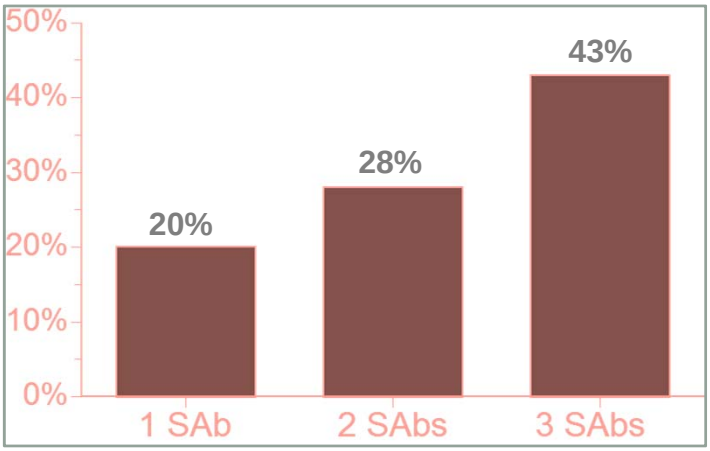
Rebecca has her uterine aspiration with MUA procedure right then in the clinic.

The procedure is uncomplicated and her questions after include:

"Can I get pregnant right away?"

"Am I at risk for another miscarriage?"

Future Miscarriage Risk



TEAMM Training, Education, & Advocacy in Miscarriage Management

Post Early Pregnancy Loss Care

- Rhogam at time of diagnosis or surgery
- Pelvic rest for 2 weeks
- No evidence for delaying conception
- Initiate contraception upon completion of procedure (even IUDs!)
- Expect light-moderate bleeding for 2 weeks
- Menses return after 6 weeks
- Negative ßhCG values after 2–4 weeks
- Appropriate grief counseling

Goldstein R, Am J Obstet. Gynecol 2002; Wyss P, J Perinat Med 1994; Grimes D, Cochrane Database Syst Rev 2000

TEAMM Training, Education, & Advocacy in Miscarriage Management

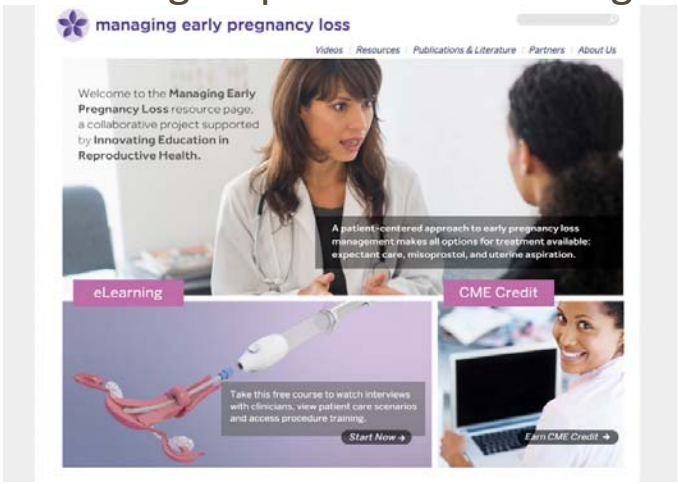
When Women Should Contact Clinician

- Heavy bleeding with dizziness, lightheadedness
- Worsening pain not relieved with medication
- Flu-like symptoms lasting >24 hours
- Fever or chills
- Syncope
- Any questions

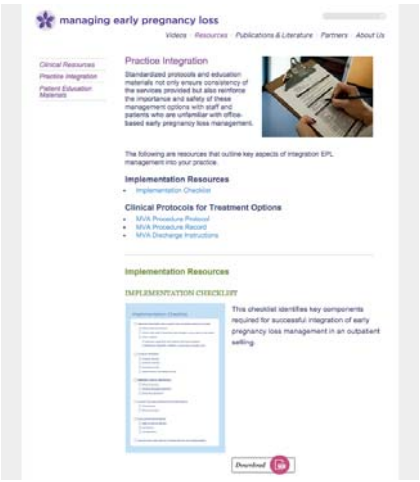
For More Information on EPL

- TEAMM website: www.miscarriagemanagement.org
- UCSF website: www.earlypregnancylossresources.org
- Association of Reproductive Health Professionals (ARHP) archived webinar: Options for Early Pregnancy Loss: MVA and Medication Management: www.arhp.org/healthcareproviders/cme/webcme/index.cfm
- Ipas WomanCare Kit for Miscarriage Management www.ipaswomancare.com
- Papaya Workshop Videos: www.papayaworkshop.org

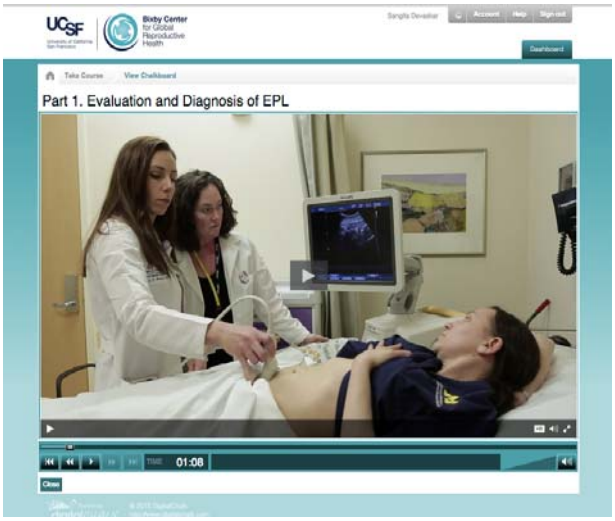
Managing Early Pregnancy Loss: Digital learning for practice and training



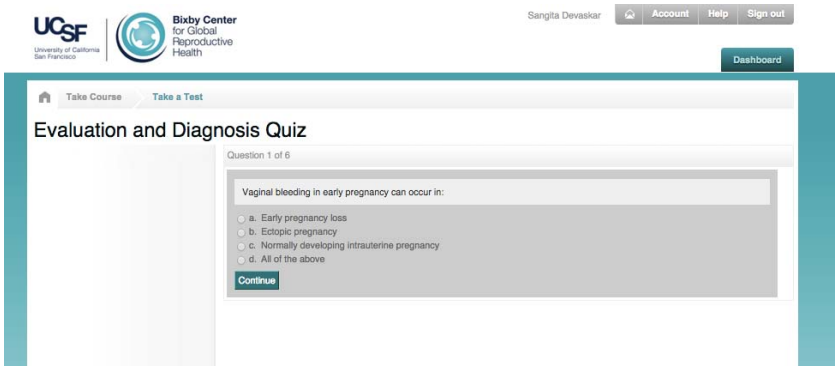
Managing Early Pregnancy Loss: Clinical Resources and Patient Materials



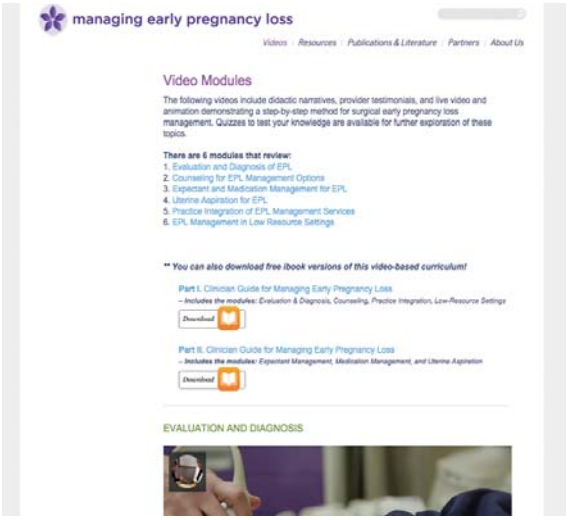
Managing Early Pregnancy Loss: Video-based Curriculum (Digital Chalk)



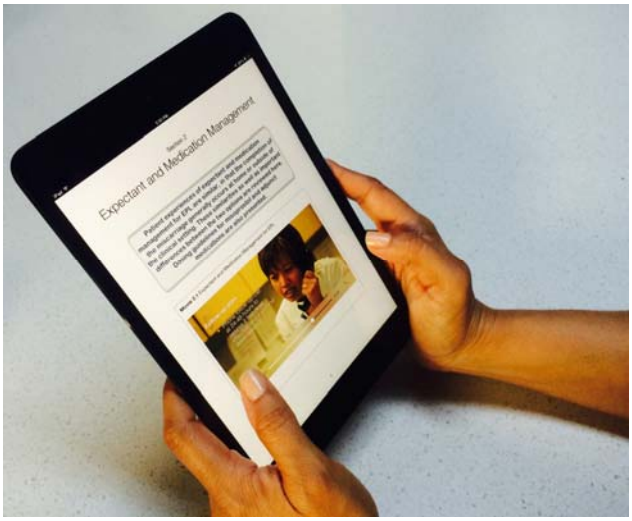
Managing Early Pregnancy Loss: Video-based Curriculum (Digital Chalk)



Managing Early Pregnancy Loss: Open-Source Video Access



Managing Early Pregnancy Loss: Use in clinical teaching setting



Thanks!

?

Questions

teamm@uw.edu