DIAGNOSIS & MANAGEMENT OF SABs

FLAME LECTURE: 86

BURNS 1.8.18

LEARNING OBJECTIVES

- Discuss the work up and diagnosis for suspected spontaneous abortion
- List the complications of spontaneous abortion
- Discuss treatment options for spontaneous abortion
- Prerequisite:
  - FLAME 81: Evaluation of 1st Trimester Vaginal Bleeding
- See also:
  - FLAME 85: Causes of Spontaneous Abortions

Diagnosis & Work-up

- Presentation: vaginal bleeding and lower abdominal cramping during pregnancy
- History
  - Bleeding?
  - Abdominal/pelvic pain?
  - Pregnancy dating/LMP
  - Previous abortions
- Physical Exam
  - Presence of blood from cervical os
  - Bleeding intensity
  - Presence of clots or tissue fragments
  - Evaluation of pain (guarding, rebound tenderness, CMT)
  - Open/closed status of cervical os

Presentation & Definitions

Terminology	Cervical Os	Intrauterine contents
Threatened Abortion	Os Closed	Viable pregnancy in uterus
Inevitable Abortion	Os Open	Pregnancy still in uterus ± heartbeat
Incomplete Abortion	Os Open	Pregnancy/POC in cervix/vagina
Complete Abortion	Os Open or Closed	No IUP or POC in cervix/vagina
Missed Abortion	Os Closed	Nonviable pregnancy in uterus

Management – Threatened Abortion

- *Vaginal bleeding without passage of fetal tissue through the os*
- Treatment is normally **expectant management with close monitoring** for conversion to inevitable or incomplete abortion (unless pregnancy is undesired)
- Note: a threatened abortion ≠ an inevitable abortion
  - 20-40% of women experience bleeding during their pregnancy without subsequent pregnancy loss
- Progression prevention: **progestins** most commonly used to maintain endometrium and protect pregnancy
  - In small studies, miscarriage rate decreased with progestin use
  - However, efficacy probably depends on abortion etiology (aka less likely to be effective if miscarriage due to fetal anomaly or genetic abnormality)
- Other recommendations include:
  - **Avoid**: sexual intercourse, vigorous exercise, contact sports and heavy lifting, but moderate exercise is ok
  - Patients do **not** need bed rest

Management – Inevitable/Incomplete Abortions

Expectant Management

- Highly successful in first trimester
  - Not appropriate for 2nd trimester
- Abortion can be verified as complete via ultrasound
- Advantages: private, noninvasive
- Disadvantages: unclear how long tissue will take to pass
  - Less effective in anembryonic pregnancies

Medical management

- Can be offered to patients who want to expedite completion and recovery from pregnancy loss
  - **Misoprostol** x1 given buccally or vaginally
  - Can offer 2nd misoprostol after 3-48 hrs if needed
  - Most completed within 7-10 days
  - Bleeding may be heavier than normal menses but generally >2 soaked maxi pads/hr x2 hrs is concerning, needs follow up

Surgical Management

- Appropriate for:
  - Quicker completion of miscarriage
  - Evacuation of retained products following expectant/medical management
  - Hemodynamic instability or infection
  - Certain medical conditions (ex. anemia)
- Procedure: evacuation of uterus with suction (electric or manual vacuum-MVA)

1st Trimester

All methods found to be very successful and choice of management should be left to patient preference.

Management – Inevitable/Incomplete Abortions

- Expectant management **NOT** recommended due to risks of hemorrhage after first trimester
- Patients generally offered medical management with misoprostol ± mifepristone with surgical management reserved for retained tissue
  - Surgical management involves Dilation & Evacuation similar to 2nd trimester Abortion (for more, see **FLAME 157: Surgical Abortion**)
  - Induction of labor can be started at home with mifepristone and continued with misoprostol in the hospital 24-48hrs later, unless patient wants immediate delivery
    - Care needed to fully deliver fetus and placenta as retained POC likely in 13-20wk pregnancies
    - Special care and sensitivity are required, and parents should be offered opportunity to hold their baby and take home photographs or mementos

2nd Trimester

Summary of Management

	Threatened	Inevitable	Incomplete	Complete	Missed
Vaginal Bleeding	Present	Present	Present	May or may not be present	May or may not be present
Cervical Os	Closed	Dilated	Dilated	Either	Closed
Fetal Heartbeat	Present	Absent	Absent	Absent	Absent
POC	Present, viable on US	Retained; Felt through cervical os	Retained	Not present; U/S: Empty uterus	Retained but nonviable on US
Management	Expectant	D&C, misoprostol, or expectant	D&C, misoprostol, or expectant		D&C, misoprostol, or expectant

Complications

- Alloimmunization:
  - Any time there is BLEEDING during PREGNANCY ➔ TYPE & SCREEN
    - If the mother is Rh(D)-negative ➔ give Rhogam
    - Anytime there is potential mixing of fetal and maternal blood, including in case of miscarriage, must evaluate need for Rhogam
- Septic abortion:
  - More common with TAB than SAB, but management similar
    - CAB's and hemodynamic assessment
    - Blood and endometrial cultures
    - Broad spectrum antibiotics
    - Surgical evacuation of retained products of conception

Complications

- Hemorrhage:
  - Causes similar to post-partum hemorrhage: uterine atony, abnormal placental implantation, cervical injury
  - Uterine atony ➔ uterotonics given (oxytocin or misoprostol)
    - There are very few receptive oxytocin receptors on the uterus <20 weeks
  - Following medical or expectant management, hemorrahge may be due to retained products of conception
    - Return for surgical management
- Repeated dilation and sharp curretage has the rare potential to cause Asherman's syndrome from intrauterine adhesions
    - This can impact return to menses and subsequent pregnancies if severe enough, however current D&C techniques are safer and post-procedure adhesions are an infrequent complication

Follow-Up

- Evaluating for abortion completion:
  - Examine products of conception (when SAB completed surgically)
    - Gross examination – look for presence of placental villi within clots
    - When villi present, signifies passage of fetal tissue
    - Histopathology – can be used to identify cause of recurrent pregnancy loss
  - Ultrasound
    - If there's concern for incomplete passage of tissue following expectant/medical management, uterine contents can be examined with ultrasound
  - ß-hCG
    - Usually takes 2-4 weeks to return to normal but may give false positive pregnancy tests for up to 6 weeks following miscarriage
    - Not regularly used to follow abortion completion

Follow-Up

- Interpregnancy interval:
  - There is no evidence to support delaying pregnancy following miscarriage
  - Women can be counseled to try for next pregnancy when they feel ready
  - May recommend abstain from vaginal intercourse 1-2 weeks to avoid infection risk
- Post-pregnancy contraception:
  - Hormonal contraceptives may be started immediately after abortion completion as long as not a septic abortion
  - IUDs may be placed at time of surgical management as long as not a septic abortion
    - No significant increased expulsion risk

Follow-Up

- Post-pregnancy workup:
  - No maternal or fetal work up is necessary after first miscarriage
  - Following second loss, can consider fetal autopsy, chromosomal analysis, maternal workup if patient wishes
- Prevention: there are no effective interventions for preventing early pregnancy loss
  - Progesterone is sometimes given in setting of *threatened abortion* in 2nd trimester but not for SAB prophylaxis
  - Cervical cerclage can be performed in 2nd trimester, but only if incompetent cervix has been identified as a factor in previous pregnancies
- Grief counseling: may be helpful for parents and provide education about miscarriage

Recurrent Pregnancy Loss Workup

Suspected Cause of RPL	Recommended testing by ASRM
Antiphospholipid antibody syndrome	Lupus anticoagulant, anticardiolipin IgG/igM, anti-beta-2-glycoprotein 1 IgG/IgM
Cytogenic	POC for chromosome abnormalities/microarray, Mother/Father for balanced reciprocal translocations
Anatomic	Hysterosalpingography, sonohysterography
Hormonal / Metabolic	Prolactin, TSH, Hemoglobin A1c
Infectious	None
Male factors	None
Pychological	None
Alloimmune	None
Environmental / Occupational / Personal habit	None

Recurrent Pregnancy Loss Management

- **Chromosomal abnormalities** → Refer to genetic counseling
  - When abnormalities found in parents or in abortus
  - For parental abnormalities can offer IVF with pre-implantation genetic diagnosis to ensure healthy embryo
  - Also can offer egg/sperm donation, surrogacy or adoption
- Uterine structural abnormalities can be treated via hysteroscopic surgery
  - Alternative is surrogate gestational carrier
- Antiphospholipid syndrome: aspirin + heparin
  - Prevention of arterial or venous thrombosis

Recurrent Pregnancy Loss Management

- Endocrinopathy-associated miscarriage risk (thyroid disease, diabetes mellitus) can be reduced by managing underlying disorder

- Hyperprolactinemia: risk reduced with bromocriptine therapy
  - Dopamine agonist that inhibits prolactin release
  - Bromocriptine has better safety profile in pregnancy than cabergoline

Recurrent Pregnancy Loss Management

- Conception/Pregnancy alternatives:
  - IVF with pre-implantation diagnosis: ensure chromosomally-healthy embryos implanted but expensive
  - Oocyte donation: high success rate in setting of recurrent pregnancy loss
  - Gestational carrier: for pregnancy loss not associated with fetal factors

REFERENCES & RESOURCES

- UpToDate:
  - Spontaneous abortion: Risk factors, etiology, clinical manifestations, and diagnostic evaluation
  - Spontaneous abortion: Management
  - Definition and etiology of recurrent pregnancy loss
- Callahan, Tamara L., and Aaron B. Caughey. *Blueprints Obstetrics & Gynecology*. Philadelphia: Wolters Kluwer Health/Lippincott William & Wilkins, 2009. 6th ed.
- ACOG Practice Bulletin No. 150, *Early Pregnancy Loss.* May 2015
- Chen BA, Creinin MD. Contemporary management of early pregnancy failure. Clin Obstet Gynecol. 2007;50(1):67–88.
- Early Pregnancy Loss in Emergency Medicine Medication. http://emedicine.medscape.com/article/795085
- Schliep, KC et al. Trying to Conceive After an Early Pregnancy Loss. *Obstetrics & Gynecology*. Feb. 2016
- National Institute for Health and Clinical Excellence. Ectopic pregnancy and miscarriage: diagnosis and initial management in early pregnancy of ectopic pregnancy and miscarriage. NICE Clinical Guideline 154.
- ASRM Comittee Opinion. Evaluation and treatment of recurrent pregnancy loss: a committee opinion. 2012