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Bleeding in Early Pregnancy (Abortion)

Objectives:

- Develop a differential diagnosis for first trimester vaginal bleeding
- Differentiate the types of spontaneous abortion (missed, complete, incomplete, threatened, septic)
- List the causes of spontaneous abortion
- List the complications of spontaneous abortion
- Discuss treatment options for spontaneous abortion

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Sources: 433 team, Hacker and Moore, APGO video and Kaplan notes

Introduction

- **Spontaneous abortion:** is the loss of pregnancy before 20 weeks of gestation.(in kaplan before 12 weeks)
- It affects up to 20% of recognized pregnancies.
- About 80% of spontaneous abortions occur in 1st 12 weeks.
- **DDx for vaginal bleeding:**
    - Spontaneous abortion
    - Viable intrauterine pregnancy
    - Ectopic pregnancy

Abortion=Miscarriage

When a female presents with vaginal bleeding in 1st trimester you have to asses the following:

Site of pregnancy ⟶ is it viable or not? ⟶ serial of beta- HCG values ⟶ transvaginal ultrasound

- **B-HCG should rise 50% in 48 hours (normally) , if it is decreasing it means the pregnancy is not viable and you should think of either (Spontaneous abortion , ectopic pregnancy).**
- **Molar and ectopic pregnancy should be rule out in all patients with early pregnancy bleeding**
- **Rule of 10s:**
    - Beta - HCG(if less than 1500 can't see anything in the uterus(TVUS) embryo is very small) peaks at approximately 10th week of EGA at approximately 100.000
    - Then it decreases at term at about 10.000
- **Transvaginal Ultrasound the following can be identified:**
    - Gestational sac at ⟶ 4.5-5 weeks of EGA
    - Yolk sac at ⟶ 5-6 weeks of EGA
    - Fetal pole with cardiac activity at ⟶ 5.5-6 weeks of EGA

	Opened Cervix	Closed Cervix
Products passed	**Incomplete abortion:** it's when some of the products have passed and cervix is still opened.	**Complete abortion:** it's when all products have passed without the need for any intervention and cervix is closed.
Products didn't pass	**Inevitable abortion:** it's when cervix is open but none of the products have passed.	**Missed abortion:** there's been a fetal demise usually for a number of weeks but products haven't been expelled and cervix is closed.

Causes of spontaneous abortion:

- **1st trimester:**
  - Chromosomal abnormalities (trisomy 18 “Edward’s syndrome”, trisomy 13 “Patau syndrome” and trisomy 21 “down syndrome”) 50% of early recognized spontaneous abortions are due to chromosomal abnormalities.
  - Increased maternal age(>35 called Advanced maternal age) which will increase the risk of chromosomal abnormalities.
- **2nd trimester:**
  - Maternal systemic disease (thyroid disease, luteal phase defect, autoimmune diseases, and TORCH infections.
  - Antiphospholipid syndrome. (Some women with SLE produce antibodies against their own vascular system and fetoplacental tissues. Treatment is subcutaneous heparin)
  - Abnormal placentation.
  - Other anatomic considerations.
  - Less well-defined causes include: history of spontaneous abortion, smoking, having an IUD placed and uncontrolled diabetes.

*Note that caffeine consumption, sex and exercise are not risk factors for miscarriage.

Types of abortions:

Type	Definition	Diagnosis	Management
Threatened abortion	Pregnancy is complicated by vaginal bleeding before 20 weeks in absences of other explanations.	- Mild bleeding. - Mild pain. - Cervix is closed. - U\S + bimanual all fine.	- **Reassurance** - Rest - Progesterone - Anti-D if Rh-
Inevitable abortion	Pregnancy is complicated by both vaginal bleeding and cramp-like lower abdominal pain	- Heavy bleeding with clots. - Severe pain. - Cervix is open. - Products are felt in cervical canal. - No passage of tissue.	- IV fluid. - Cross match blood. - Oxytocin - Syntocinon IV infusion - Emergency evacuation of the uterus. - Anti-D if Rh-
Incomplete abortion	In addition to vaginal bleeding, cramp-like pain,and cervical dilation, there’s partial explosion of products.	- Often described by the woman as looking like pieces of skin or liver - Open cervix. - U\S:retained products of conception.	SAME as above. Once the patient is stable the remaining products of conception evacuated under appropriate pain management.
Complete abortion	Passage of all products of conception.	- Heavy bleeding + clots.	- Conservative if an intrauterine pregnancy had

		- Severe pain. - Passage of tissue. - Stoppage of pain and bleeding. - Cervix is closed. - Uterus is smaller than the gestational age. - Pregnancy symptoms abate. (Pregnancy test becomes -ve)	been previously confirmed. - If not, then weekly monitoring of beta HCG until it's negative to make sure that ectopic pregnancy has not been missed.
Missed abortion	When the fetus has died but is retained in the uterus, usually for more than 6 wks.	- Gradual disappearance of pregnancy signs and symptoms. - Brownish discharge. - Pregnancy test may remain + for 3-4 wks. - U\S: no fetal heartbeat, empty sac.	Can be complicated by septic abortion and DIC so better to be evacuated surgically to minimize the risks
Blighted Ovum	It occurs when a fertilized egg implants in the uterus but doesn't develop into an embryo. The pregnancy sac forms and grows, but the embryo does not develop. This is caused by problems with chromosomes, poor-quality sperm or egg or abnormal cell division.	This is differentiated from missed abortion by US. In the missed abortion you can see fetal tissue while in blighted ovum you won't be able to see any.	Similar to missed abortion.
Septic abortion	Uterine infection at any stage of pregnancy. Caused by: delay evacuation, incomplete surgical evacuation followed by vaginal organisms after 48 hours. Usually preceded by a predisposing factor such as another type of abortion and opening of the cervix.	Fevers, chills. - Lower abdominal discomfort - Foul vaginal discharge. - Cervical motion tenderness (Only type)	- Oral broad spectrum antibiotics.
Recurrent abortion	3 consecutive miscarriages, but many clinicians feel that 2 successive 1'st trimester losses or a single 2'nd trimester spontaneous abortions is justification for an evaluation of a couple for the causes of pregnancy losses.		- Rule out systemic diseases. - Paternal And maternal chromosomes. - Hysteroscopy or historiography. - Rule out infectious diseases. - Pelvic U\S to rule out any congenital anomalies of the uterus.

Treatment options:

Conservative	Watch carefully and wait.
Medical	Vaginal misoprostol (it's a prostaglandin analogue used to induce labour)
Surgical	Dilatation and curettage (Any women who's Rh -ve and undergoing D&C should be given RhoGAM. D&C may cause adhesions) Manual vacuum aspiration

Complications:

Hemorrhage	If a patient presents with heavy vaginal bleeding with retained products of conception then a Surgical evacuation should be performed .
Endometritis	Should be treated with oral antibiotics.
Septic abortion	Signs and symptoms of septic abortion include fever, chills, lower abdominal discomfort and foul vaginal discharge

Case

A 32 year-old G1 woman presents with a positive urine pregnancy test at 9 weeks 4 days from start of last normal menstrual period. She reports 5 days of moderate painless vaginal bleeding and chills. Physical examination shows a temperature of 101.5° orally, pulse 95, and BP 95/60 with normal bowel sounds, no rebound, and 5/10 suprapubic tenderness. Pelvic exam shows moderate amount of blood in vagina with a closed 5/10 tender cervix and an 8/10 tender uterus. No adnexal masses or tenderness.

Lab data shows a serum β-hCG level of 6,500 mIU/ml and ultrasound shows a gestational sac in the uterus with no
fetus seen. The ovaries and tubes appear normal.

1. What are the different types of spontaneous abortion?

•Threatened abortion
• Incomplete abortion
• Inevitable abortion
• Complete abortion
• Missed abortion
• Septic abortion
• Recurrent abortion

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2. Which type or types is most likely in this case and why?

Septic abortion

Because she has :Fever, Tenderness, Hypotension and Tachycardia

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3. Why does this patient have a fever and tenderness and what needs to be done about it?

The fever originates from infected non-viable products of conception. The patient needs immediate evacuation of the uterus and antibiotics in order to prevent worsening infection, sepsis and possible septic Shock.

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4. If this patient was 6 weeks pregnant with no fever or tenderness, had an β-hCG level of 700 mIU/ml and a negative ultrasound with no evidence of a gestational sac, what would be your differential diagnosis if she had a small amount of bleeding and no fever or tenderness?

• The first diagnosis to exclude would be ectopic pregnancy. A closed cervical os could indicate either a threatened abortion with a gestation which was so early that it could not be visualized on ultrasound or completed abortion in which the products of conception have already passed though this is less likely given the small amount of bleeding she has had. A missed abortion occurs when the patient is asymptomatic but has a non-viable pregnancy, as diagnosed by falling β-hCG levels or ultrasound imaging.

when beta hCG level reaches 2500 you should be able to see a gestational sac. if still can't see it consider ectopic so you should look somewhere else, in this question repeat beta HCG after 48 hours if it doesn’t increase by 50% this is abortion .

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5. How would you make the diagnosis in question 4?

If no intrauterine gestational sac can be seen on ultrasound, order serial beta β-hCGs since the initial B-HCG level is too low for ultrasound to show an intrauterine pregnancy (IUP) (which usually is seen onvaginal ultrasound at 1500-2000 mIU/ml β-hCG). If this is a viable intrauterine pregnancy, the β-hCG level usually will increase at least 66% when repeated in 48 hours. If it does not, then a viable intrauterine pregnancy is unlikely. If the patient is stable, repeated quantitative β-hCG levels can be performed and followed until negative. Diagnostic D&C can be performed as well once viable IUP has been ruled out.Once a diagnosis of ectopic or abnormal intrauterine pregnancy is confirmed, appropriate treatments can be implemented.

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6. For a patient with any type of abortion, what blood test is essential to do?

Blood typing for Rh factor is essential followed by RHoGAM injection if patient is Rh negative. This is vital to prevent Rh sensitization in a subsequent pregnancy.

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7. What are the causes of spontaneous abortion?

Fetal chromosomal abnormality (the most common in the first trimester), Possible causes include infection, uterine malformation (septate uterus), immunologic dysfunction, diabetes, thyroid disease, subclinical infection, trauma, as well as teratogenic or environmental exposures. (these mostly are the causes in the second trimester)

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8. What are treatment options for spontaneous abortion?

For incomplete, inevitable and missed abortions, management may include expectant, medical or surgical management. We start with Medical management with prostaglandins, or expectant management it may be associated with bleeding and still require surgical evacuation.if it's failed we will move to Surgical management with dilation and curettage or manual vacuum aspiration which is more definitive.