



Ch 31 - Vaginal Bleeding

EPISODE CONTENT BASED ON ROSEN'S EMERGENCY MEDICINE (9TH ED.)

Italicized text is quoted directly from Rosen's.

Key Concepts:

- 1. Pregnancy status is the single most important determination to make when evaluating a woman with vaginal bleeding.*
- 2. There are many causes of abnormal bleeding in non-pregnant patients. Most non-pregnant patients presenting to the ED with vaginal bleeding can be safely discharged home, with timely gynecology follow-up.*
- 3. The use of the term "dysfunctional uterine bleeding" is no longer recommended; instead use the term "abnormal uterine bleeding".*
- 4. Hormonal and non-hormonal treatments can be initiated in the ED to temporize an acute bleeding episode in non-pregnant patients until she can follow up with her gynecologist.*
- 5. Vaginal bleeding is common in early pregnancy. Most patients will be diagnosed with threatened miscarriage, but ectopic pregnancy should always be considered at any level of serum BHCG.*
- 6. Vaginal bleeding after the 20th week of pregnancy is less common and is often associated with significant morbidity and mortality for the mother and fetus. These patients should be managed in close consultation with an obstetrician.*

Core Questions

1. Define the following terms:
 - a. Menorrhagia
 - b. Metrorrhagia
 - c. Menometrorrhagia
 - d. Oligomenorrhea
2. What points on history are important to elucidate in the patient with PV bleeding?
3. Outline an approach to the physical examination in the patient with PV bleeding.
4. Describe an approach to ancillary testing in the patient with PV bleeding.
5. Outline the DDX of PV bleeding in the non-pregnant patient.
6. Outline the DDX of PV bleeding in the pregnant patient.
7. Detail an approach to the management of PV bleeding in nonpregnant patients in the ED.



Wisecracks

1. What is the average volume of blood lost during typical menstruation?
2. What is the risk of spontaneous abortion in the patient who presents with vaginal bleeding in the first trimester?
3. List five risk factors for placental abruption.
4. List five risk factors for PPH.
5. List five risk factors for ectopic pregnancy.
6. List five absolute contraindications to the use of oral contraceptive pills.

Rosen's in Perspective

Alright CRACKCast listeners, we are back at it again with our podcast on Chapter 31 - Vaginal Bleeding in Rosen's 9th edition. Today, we will start out with a case that will get your blood pumping.

You are strolling through a community hospital on a bone-chilling February night shift when you are called into your resuscitation bay by your ED charge nurse. She says she has a 41-year-old female that is hemorrhaging large amounts of clotted blood per vagina. As you walk into the room, you note that she has the following vital signs: HR 150 BPM, BP 70/30, RR 30, Temp 35.4, and your SpO2 monitor is not able to read. The patient appears pale, diaphoretic, and has a GCS of 10. Your nurse looks at you and asks "What do you want done?"

While that case may be making you feel faint, fear not. We here at CRACKCast are going to give you all the tools to manage this patient.

Remember, vaginal bleeding is an exceedingly common issue in both pregnant and non-pregnant patients. In fact, it is the most common reason for women seeking care from gynecologists. For context, 20-40% of women in the first trimester of pregnancy will experience PV bleeding. Similarly, 14-25% of women of reproductive age will experience abnormal uterine bleeding in their lifetime. While most instances of PV bleeding in both populations are not life-threatening, having a solid approach to this issue is essential for any practitioner of Emergency Medicine. Today's podcast will provide you with the foundation for that approach, covering the relevant definitions to know for these patients, an approach to the history and physical examination for patients with PV bleeding, and the knowledge you need to manage the patient with this presenting complaint on your next shift.



Core Questions:

[1] Define the following terms:

- a. Menorrhagia
 - b. Metrorrhagia
 - c. Menometrorrhagia
 - d. Oligomenorrhea
- Menorrhagia is defined as menstrual bleeding for either an excessive amount of time (typically >7 days) or having heavy menstrual bleeding
 - Metrorrhagia is defined as irregular uterine bleeding between menstrual cycles
 - Menometrorrhagia is defined as Prolonged or excessive uterine bleeding that occurs irregularly
 - Oligomenorrhea is defined as infrequent or light uterine bleeding

While your head may be spinning trying to understand these definitions, don't worry - they don't actually matter anymore. These are historic definitions that are no longer endorsed by professional organizations. Instead, the International Federation of Gynecologists and Obstetricians (FIGO) incorporated all these definitions under the term "abnormal uterine bleeding". Acute AUB is defined as "an episode of heavy bleeding that, in the opinion of the clinician, is of sufficient quantity to require immediate intervention to prevent further blood loss."

So, when it comes down to it, just remember AUB, and you'll be in the clear.

[2] What points on history are important to elucidate in the patient with PV bleeding?

Vaginal Bleeding Historical Key Points:
<ol style="list-style-type: none">1. Onset of bleeding2. Duration of bleeding3. Pattern of bleeding4. Volume of blood loss5. Presence of clots6. Typical menstruation pattern7. Associated symptoms of hypovolemia/anemia (e.g., presyncope, weakness)8. Other associated symptoms (e.g., presence of fever, vaginal discharge, abdominal pain)9. History of trauma (both localized and systemic)10. Sexual history11. Obstetrical history12. Use of medications that can interfere with normal clotting processes13. Use of reproductive technologies (if applicable)14. Family history of thrombophilias15. Social history specifically probing for potential sexual abuse



[3] Outline an approach to the physical examination in the patient with PV bleeding.

The physical examination of these patients is typically directed to the abdomen and pelvis. While we have all done these examinations in the past, here are a few things to consider:

Abdominal Examination

- Inspection
- Palpation
- Percussion
- Auscultation
- Special testing
- +/- DRE

Pelvic Examination

- Done in almost all female patients presenting to the ED with acute pelvic pain
 - This includes all pregnant patients up to 20 weeks gestation. Once you hit the 20-week mark, it is best to get an ultrasound to determine placental placement before performing this exam
- Important aspects of the pelvic examination include:
 - Inspection of external genitalia, specifically looking for areas of swelling, lesions, or gross vaginal discharge or blood
 - Speculum examination to evaluate the structural components of the vagina and cervix
 - Bimanual examination to evaluate the cervix for motion tenderness and the adnexa for masses/tenderness

[4] Describe an approach to ancillary testing in the patient with PV bleeding.

Ancillary Testing in Patients with PV Bleeding
<ul style="list-style-type: none">▪ CBC, Lytes, Creatinine<ul style="list-style-type: none">○ Can consider iron studies and ferritin○ Platelet level especially high-yield▪ Quantitative BHCG<ul style="list-style-type: none">○ MOST IMPORTANT TEST TO ORDER○ Cannot rely on urine betas▪ Coagulation Profile▪ Thyroid Studies<ul style="list-style-type: none">○ Particularly useful for oligomenorrhea or amenorrhea



- Can be useful if no other cause identified with heavy menstrual bleeding
- Type and Crossmatch (if significant bleeding and anticipating transfusion)
- Vaginal Swabs for G+C
- Bedside US
- Formal ultrasound
 - Remember, your quantitative HCG influences the yield of your US. TV US will generally pick up intrauterine pregnancies with beta's >1000-2000 IU/mL. Your bedside ultrasound generally will detect the same at 3-5000IU/mL.

[5] Outline the DDX of PV bleeding in the non-pregnant patient.

The following table is adapted from Box 31.1 - Differential Diagnosis of Abnormal Uterine Bleeding in Nonpregnant Females in Rosen's 9th Edition. Please see the text for further clarification.

Differential Diagnosis of Abnormal Uterine Bleeding in Nonpregnant Females
<p>Structural Causes</p> <p>Polyps Fibroids Malignancy Endometrial Hyperplasia Endometriosis</p>
<p>Nonstructural Causes</p> <p>Coagulopathies (e.g., vWb disease, Factor Xi deficiency, thrombocytopenia, ITP) Endocrine (PCOS, hypothyroidism, hyperprolactinemia, adrenal hyperplasia, Cushing's) Weight loss Extreme exercise Stress Obesity Trauma Sexual abuse Infections (STI's, TOA's, vaginitis) Systemic disease (liver disease, kidney disease) Foreign bodies Medications (antiepileptics, antipsychotics, anticoagulants, hormonal medications, steroids) IUD</p>



If this list is a little difficult to commit to memory, a much more commonly endorsed differential that specifically provides the DDx for uterine causes of PV bleeding is encapsulated in the mnemonic PALM-COEN. Again, this comes from the all-powerful FIGO, and will direct you to the most important diagnoses in this Rosen's box.

Structural:

Polyps – only will see if prolapsed; ultrasound and hysteroscopy can help make definitive Dx; likely to at least contribute to your patient's AUB if present

Adenomyosis – no longer need histopathologic confirmation to make Dx; MRI and ultrasound sufficient

Leiomyomas – remember, these are very common (up to 70% of women will have); the presence of these on imaging does not mean you have found the diagnosis. Generally, only submucosal fibroids cause bleeding

Malignancy/Hyperplasia – consider as a cause in all women (pre-intra-post-menopausal)

Systemic:

Coagulation – common cause of AUB; 13% quoted by FIGO; most commonly VWB

Ovulatory Dysfunction – think polycystic ovary syndrome, hypothyroidism, hyperprolactinemia, mental stress, obesity, anorexia, weight loss, or extreme exercise such as that associated with elite athletic training; also think antipsychotics and TCA's

Endometrial Dysfunction - think of patient's whose AUB only occurs in context of normal predictable periods; has to do with local endometrial function and stabilization

Iatrogenic – caused by medications or devices used by medical practitioners – progestin-only OCP's, copper IUD's, anticoagulants

Not otherwise classified

[6] Outline the DDx of PV bleeding in the pregnant patient.

Differential Diagnosis of PV Bleeding in Pregnant Females
Bleeding at <20 Weeks Gestation
Implantation bleed Early pregnancy loss Ectopic pregnancy Molar pregnancy Cervical Insufficiency



Bleeding at >20 Weeks Gestation
Placenta previa Abruptio placentae Uterine rupture Vasa previa

NOTE: PV bleeding in the pregnant patients can also be caused by uterine, vaginal, and cervical pathologies detailed in question five. Don't forget to cast a wide net!

[7] Detail an approach to the management of PV bleeding in nonpregnant patients in the ED.

Alright, this deviates a bit from the Rosen's approach, but this is our recommended approach to addressing PV bleeding in the ED.

Heavy Bleeding (not life-threatening)

- Levonorgestrel IUD
- Progestin-only oral contraceptive pill
 - 20 mg PO TID x 7 days OR
 - 10 mg PO QID for 10 days
- OCP (Combined)
 - Typical use per pill pack
 - Alternatively,
 - One pill PO TID x 7 days
 - One pill PO BID x 5 days, then one QD until pack is finished
- Tranexamic Acid
 - 1300 mg PO TID x 5 days during menstruation
- NSAID's
 - Naproxen 500 mg at onset, then 250 mg PO TID or QID x 5 days
 - Ibuprofen 200-400 mg PO QID x 5 days
 - Mefenamic Acid 500 mg PO TID x 4-5 days or until bleeding stops

Heavy Menstrual Bleeding (life-threatening)

- Fluid resuscitation, blood product administration
- Intrauterine Tamponade (Don't forget broad-spectrum Abx once packing/balloon placed)
 - 30-ml Foley Cath
 - Bakri Balloon (for larger uteruses; has 500 ml capacity)
 - Gauze packing
 - One continuous piece of Kerlix
 - Can soak with 5000 units thrombin in 5 ml sterile NS
- TXA
 - 10 mg/kg or max 600 mg IV q8h
- High dose IV estrogen
 - Premarin 25 mg in 5 mL isotonic saline injected over two minutes with a dose repeated at four and six hours from the initial dose if bleeding continued. Dose until bleeding stops or 24 hrs have elapsed



Wisecracks:

[1] What is the average volume of blood lost during typical menstruation?

Answer:

On average, 35cc of blood is lost per period of menstruation. Losing > 80 cc is considered abnormal.

[2] What is the risk of spontaneous abortion in the patient who presents with vaginal bleeding in the first trimester?

Answer:

Approximately 50% of women with PV bleeding in pregnancy before 20 weeks gestational age will miscarry

[3] List five risk factors for placental abruption.

Answer:

Risk Factors for Abruption Placentae

1. Prior Hx of same
2. Hypertensive Disorder, including preeclampsia, eclampsia, HELLP
3. Abnormal placental implantation (e.g., placenta previa, placenta accreta/increta/percreta)
4. Smoking
5. Cocaine use

[4] List five risk factors for PPH.

Answer:

Risk Factors of Postpartum Hemorrhage

1. Past Hx of same
2. LGA fetus
3. Polyhydramnios
4. Multiparity
5. Prolonged labour
6. Induced labour
7. Augmentation of labour with oxytocin



8. Instrumentation delivery

[5] List five risk factors for ectopic pregnancy.

Answer:

Risk Factors for Ectopic Pregnancy

1. Past Hx of same
2. Hx PID
3. Prior tubal surgery
4. Use of IUD
5. Hx endometriosis
6. Use of reproductive technologies

[6] List five absolute contraindications to the use of oral contraceptive pills.

Answer:

Absolute Contraindications to OCP's

1. Hx VTE
2. Hx vascular disease
 - a. CAD
 - b. CVD
3. Hx liver disease
4. Undiagnosed vaginal bleeding
5. Pregnancy
6. Hx Breast CA
7. Migraine HA with aura
8. Tobacco use over 35 years of age

Relative Contraindications to OCP's

1. HTN with SBP >160 mmHg or DBP >99 mmHg
2. Hyperlipidemia
3. DM with secondary complication
 - a. Neuropathy
 - b. Retinopathy
 - c. Nephropathy
 - d. Vascular Disease
4. DM >20Y duration
5. Postpartum <3 weeks



6. Lactation (6 weeks to 6 months)
7. Long-leg cast or prolonged immobility
8. Non-compliance