Vaginal Bleeding

The main approach to non pregnant patients with vaginal bleeding in the Emergency Department centers on determining the stability of the patient. Vital signs and the patient’s description of bleeding are used to estimate the magnitude of hemorrhage. You must ask yourself: If I send this patient home, what is the likelihood that she will bleed significantly? Is close follow-up sufficient? Does hormone therapy need to be implemented in the ED? If bleeding has not led to hemodynamic compromise (and is not likely to), and pregnancy has been ruled out, the majority of patients can be safely discharged with close follow-up.

Any patient with abnormal uterine bleeding needs their endometrium evaluated by an OB/Gyn before hormonal therapy is implemented. Endometrial biopsy can be significantly altered by premature hormone therapy in the ED. Occasionally an OB/Gyn consultant will recommend implementing hormonal therapy in the ED. A young person may be placed an Ovral® 4 times daily for five days to stabilize the endometrium. Older patients require an ultrasound and biopsy. Patients who are hemodynamically unstable because of vaginal bleeding require a hemoglobin, a type and screen, IV resuscitation, and admission. Patients who have suffered trauma such as a vaginal laceration must be evaluated by an OB/Gyn in the ED. In all cases pregnancy must be excluded.

Pelvic Pain

Chronic pelvic pain is rarely investigated primarily in the ED. Once pregnancy is ruled out, acute conditions such as infection, ovarian torsion, urinary tract infection, renal colic, or a ruptured ovarian cyst must be considered. Your history and physical exam will assist in determining which of these conditions among others are most likely to be present. Urinalysis, CBC, ultrasound, and CT scan are the most useful tests to consider. As in all cases of patient management in the ED, the first rule of business is to take care of the patient. Patients with moderate pain and no peritoneal signs may be sent home on analgesics with appropriate follow-up. Patients with intractable pain or those with a surgical abdomen should be admitted for further evaluation.

Etopic Pregnancy (EP)

Any physician engaged in patient care in Emergency Medicine must consider this diagnosis in any female presenting to the ED with pain or bleeding. Ectopic pregnancy represents approximately 2 percent of pregnancies. Patients who have undergone tubal ligation have a risk of 3 in 1000 of having an ectopic pregnancy. Its importance cannot be overstated.

The classic triad of abdominal pain with vaginal bleeding or spotting in a female with amenorrhea may not be present. Menstrual histories cannot always be relied upon. Abdominal or pelvic pain may be transient. Bleeding or spotting does not have to be present. Neither do risk factors such as the presence of an IUD or prior history of pelvic inflammatory disease (PID).

Pregnancy testing is mandatory. Once a positive urine HCG is established, a quantitative βHCG is drawn along with a CBC and a type and screen, particularly if there is bleeding. Diagnosis is confirmed by ultrasound or laparoscopy.

The goal of ultrasound is to determine whether or not an intrauterine pregnancy (IUP) exists. If an IUP is seen, there is still a 1 in 3000 risk of having a co-existing ectopic pregnancy (heterotopic pregnancy). This condition is most commonly seen in in-vitro fertilization (IVF) patients. In this group, an ectopic pregnancy should still be considered, even in the presence of an IUP. For other patients, the presence of an IUP on ultrasound is a fairly reliable finding to rule out an ectopic pregnancy.

If nothing is seen on ultrasound, an ectopic pregnancy is not ruled out. The patient still may have an ectopic pregnancy, but one of insufficient size to cause findings such as embryonic cardiac activity outside the uterus. When a pelvic mass or free fluid are seen in conjunction with an empty uterus, EP is considered highly likely.

If ultrasound fails to confirm a definite IUP, or findings suggestive of an EP, it is deemed indeterminate. The OB/Gyn may choose to admit the patient, or follow the patient with serial quantitative HCGs as an outpatient. The patients clinical stability, βHCG level, and examination help guide the emergency department disposition. Confirmed ectopic pregnancies may be managed either surgically or medically with methotrexate.
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Pelvic Inflammatory Disease

*Neisseria gonorrhoea* and *Chlamydia trachomatis* are isolated in most cases of PID. However, *Gardnerella, Streptococcus,* and *Hemophilus* are also implicated.

Lower abdominal pain is the most frequent chief complaint in PID. Diagnostic criteria must also include cervical motion tenderness, adnexal tenderness, tenderness on lower abdominal examination and at least one of the following:

- Temperature > 100 F (38.3 C)
- Abnormal cervical or vaginal discharge
- Elevated sedimentation rate or C-reactive protein
- WBC count > 10,000
- Positive gram stain for gram negative diplococci

Because of the implications of fertility, assigning a patient a diagnosis of PID should not be taken lightly. For example, a reproductive age female has a 30% incidence of infertility with her first episode of PID. The incidence increases to 50% with her second episode. Therefore, if a patient with PID has vomiting, a pelvic mass, high fever or uncertain diagnosis admission should be sought. IV antibiotics and serial examinations are efficacious in these cases. Adolescents or patients who have never been pregnant should be admitted.

Outpatient antibiotic management of PID includes the following:

- **Ceftriaxone 250 mg IM** or **Cefoxitin 2 g IM plus Probenecid 1 g p.o.**
  - plus Doxycycline 100 mg p.o. bid x 14 days
  - Or Ofloxacin 400 mg p.o. bid x 14 days
  - plus Metronidazole 500 mg p.o. bid x 14 days

Note that these regimens are different from the recommended treatment for uncomplicated cervicitis, which includes single doses of ciprofloxacin and a 10 day course of doxycycline or a single large dose of azithromycin.

Vulvovaginitis

The most common causes of acute vulvovaginitis include infections with *Trichomonas, Candida albicans,* *Gardenerella,* and *Herpes.*

Trichomonas

Trichomonas in the female patient presents as an itchy foul smelling discharge that is sometimes associated with dysuria and abdominal pain. It is diagnosed by visualizing a foamy green or gray discharge and an erythematous “strawberry” cervix or vagina.

On wet prep, there are flagellated, motile, tear drop shaped organisms and PMNs. Male patients are asymptomatic 90 percent of the time. Sexual partners must be treated to prevent reinfection.

Treatment in the nonpregnant patient is metronidazole 2 grams p.o. in a single dose or 500mg BID for 7 days. In the pregnant patient or the metronidazole allergic patient. It is clotrimazole cream or suppositories Q HS for 7 days.

Monilial vaginitis

Yeast is normal vaginal flora in 50% of healthy women. Colonization or overgrowth of the organism can be caused by diabetes, pregnancy, postmenopausal state, menstruation, immunosuppressive drugs, or antibiotics.

The clinical presentation is classically of extreme pruritis, vaginal discharge, and sometimes dysuria or dyspareunia. Physical diagnosis is made by observation a thick white discharge, vulvovaginal erythema and edema, and satellite lesions on perineum. Pseudohyphae and spores may seen on KOH wet prep; however, 20% of cases have no pseudohyphae on KOH prep. Treatment includes terconazole vaginal
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cream or fluconazol 150 mg p.o. single dose. Patients who are on oral hypoglycemics cannot take fluconazol.

**Bacterial Vaginosis**
Symptomatic bacterial vaginosis is the result of alterations in the vaginal microflora that promote the synergistic activity of aerobic *Gardnerella vaginalis* and vaginal anaerobes. The CDC states that for the disease to be diagnosed, three or four of the following criteria should be present: homogenous discharge, pH of discharge greater than 4.5, positive amine odor test, or presence of clue cells.

The diagnosis of Gardnerella vaginitis is often made from the wet mount saline preparation which shows clue cells or clusters of bacilli clinging to the surface of desquamated epithelial cells. Addition of 10% KOH to vaginal secretions will result in the release of the fishy odor.

Treatment of bacterial vaginosis is achieved with metronidazole 500 mg BID for 7 days. Clindamycin 300mg p.o. BID for 7 days is the other option. Metronidazole vaginal gel q d x 5 days or clindamycin vag cream with application q HS x 7 days are two more options.

**Herpes**
Genital Herpes is a sexually transmitted disease caused by a DNA containing virus specific to human beings. Eighty to 90% of genital herpes is felt to be caused by HSV2. It has an incubation period from 1 to 45 days with a mean of 5.8 days post exposure.

Usually the initial infection of genital herpes is the most severe and lasts longer than subsequent infections. Local manifestations of the disease include painful, fluid filled vesicles or papules that progress to well circumscribed, occasional coalescent, shallow based ulcers.

Systemic manifestations include generalized lymphadenopathy, severe urethritis, pharyngitis, rash other than at the primary site, hepatitis, aseptic meningitis, myalgias, fever, headaches, and autonomic dysfunction.

Recurrences are less severe and of shorter duration. Treatment of active infection is acyclovir 200 mg p.o. 5 times daily for 7-10 days or until clinical resolution or Valtrex® bid 500mg for 5 days. Recurrent episodes are treated with 200 mg orally 5 times/day for 5 days. Suppression is 400 mg orally BID.

**STDs in Children**
Abused children present to the ER with a variety of somatic complaints including dysuria, discharge, and abdominal pain. Diagnosis of gonorrhea, chlamydia, trichomonas, genital herpes, and condylomata indicate sexual contact. Presence of the above infections should prompt full investigation for probable sexual abuse.

Prepubertal gonorrhea presents as a vaginitis in a child rather than the endocervicitis of an adult. In culture proven gonorrhea, all household contacts should have cultures taken from the vagina, urethra, and pharynx.

**Problems in Pregnancy**
Pregnant patients present to the ER with a multitude of medical problems. They provide a particular challenge and many factors must be considered. The ER physician often has to prescribe drugs in the pregnant patient or advise her to stop or continue a drug that she is already on, in light of her newly diagnosed pregnancy.

The evaluation of an effect of a drug on a fetus is a complex issue. The Food and Drug Administration lists five categories of labeling for drug use in pregnancy.

A: - remote fetal harm, studies performed in women.
B: - no obvious fetal harm, studies performed in animals.
C: - either studies show adverse effects on animal fetuses or no studies have been performed.
D: - positive evidence of fetal risk, but benefits may outweigh risks.
X: - studies in animals or humans have demonstrated definite fetal abnormalities.
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Antibiotics that are safe in pregnancy include penicillin, cephalosporins, nitrofurantoin, macrolides, and clindamycin can be used on any tissue. There are two category D antibiotics. Tetracyclines distort tooth and bone growth. Quinolones cause abnormal cartilage formation. Avoid sulfamethoxazole/trimethoprim in pregnancy.

Antiemetics that are safe in pregnancy included meclizine, dramamine, diphenhydramine, and trimethobenzamide (Tigan®), promethazine (Phenergan®), and prochlorperazine (Compazine®).

Treatment of asthma in pregnancy is relatively easy. β-agonists such as terbutaline and albuterol are safe. Steroids are also acceptable if the benefits in the mother outweigh the risks to the fetus.

Analgesics that are safe in pregnancy include narcotics, acetaminophen, propoxyphene, codeine, meperidine, and morphine. Do not give nonsteroidal antiinflammatory drugs.

It is safe to extrapolate that if a drug is safe in pregnancy, it is safe in breastfeeding and vice versa.