DIAGNOSIS OF ECTOPIC PREGNANCY

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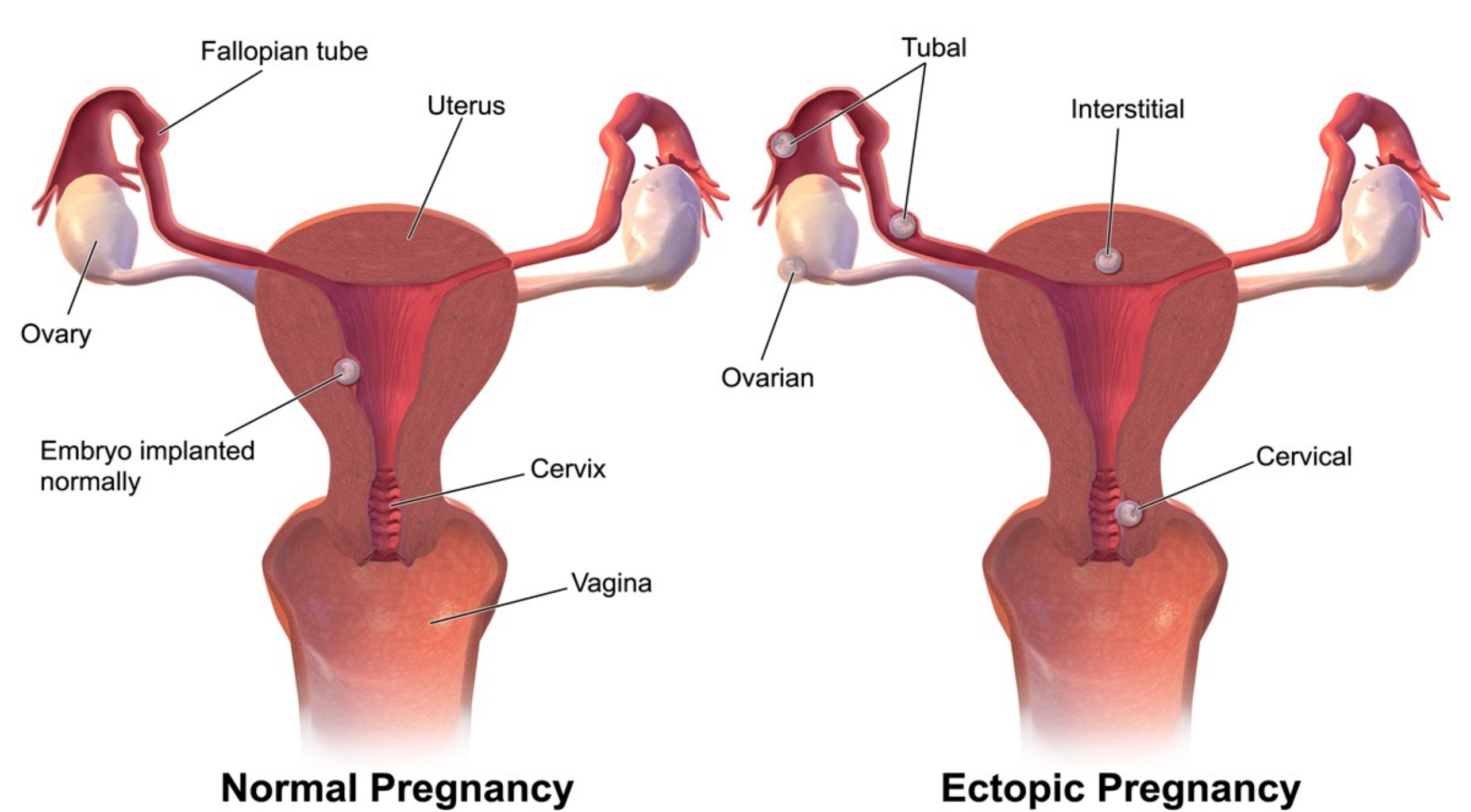
LEARNING OBJECTIVES

- To describe the epidemiology of ectopic pregnancy
- To list risk factors for ectopic pregnancy
- To describe how an ectopic pregnancy is diagnosed
- Prerequisites:
  - FLAME LECTURE 81: EVALUATION OF 1ST TRIMESTER VAGINAL BLEEDING
- Closely related topics:
  - FLAME LECTURE 83: MEDICAL MANAGEMENT OF ECTOPIC PREGNANCY
  - FLAME LECTURE 84: SURGICAL MANAGEMENT OF ECTOPIC PREGNANCY

DEFINITION

- An ectopic pregnancy is an EXTRAUTERINE pregnancy – one in which the BLASTOCYST implants anywhere other than the endometrial lining of the uterine cavity
- 95% of ectopic pregnancies implant in the fallopian tube[1]


Fallopian tube
Uterus
Ovary
Embryo implanted normally
Cervix
Vagina
Normal Pregnancy
Tubal
Interstitial
Ovarian
Cervical
Ectopic Pregnancy

EPIDEMIOLOGY

- Accounts for 1-2% of pregnancies in U.S.
- Up to 18% of ED visits for 1st trimester bleeding associated w/ abdominal pain are ectopics[5]
- Accounts for 9% of pregnancy-related mortality (3rd most common cause)[1]
- 1/200,000 pregnancies are bilateral ectopics[2]
- Since 1970, the frequency has increased 4X[3-4], however mortality has decreased 10X
- Risk of mortality 3.4X higher in non-white women 2/2 issues with access to care[3]

RISK FACTORS

- DON'T MESS WITH THE FALLOPIAN TUBE![1]
  - STIs/PID (especially chlamydia[2]) can damage the tube
  - Prior pelvic or lower-quadrant abdominal surgery
  - ART (artificial reproductive technologies)
- Advanced maternal age
- Smoking
- STERILIZATION & IUDs
  - ↑ risk of ectopic IF a patient gets pregnant. HOWEVER, because they reduce the overall chance of even becoming pregnant to begin with, the overall risk of ectopic is decreased
- In utero diethylstilbestrol exposure (DES)
  - Largely historical, however some patients may still be prescribed this in other countries like Mexico

RISK FACTORS	ODDS RATIOS[1-4]
1 prior ectopic / 2 prior ectopics	3.0 / 16.0
Prior tubal surgery	4.5-4.7
Smoking 20+ cigarettes/day	2.5-3.5
Outpatient GC/CT / Inpatient GC/CT or PID	1.2 / 2.5-3.4
3+ prior spontaneous miscarriages	3.0
40+ years of age	2.9
Prior medical or surgical abortion	1.6-2.8
12+ months of Infertility	2.5-2.6
5+ sexual partners over lifetime	1.6-2.1
Previous IUD-use / Current IUD-use	1.3-1.6 / 4.2

Up to **ONE THIRD** of pregnancies following even one ectopic pregnancy are **RECURRENT!**

CLINICAL PRESENTATION

- Approximately 50% of women diagnosed with ectopic have no identifiable risk factors
- Classic symptoms include:
  - Abdominal pain (98% of patients)
  - Nausea / vomiting
  - Missed period
  - Vaginal bleeding
- Other symptoms may include: dizziness, lightheadedness, or referred shoulder pain (due to blood in the abdomen irritating the diaphragm)

DIFFERENTIAL DIAGNOSIS

- Obstetric complications of an intrauterine pregnancy:
  - Threatened / Missed / Completed / Incomplete abortion
  - Molar pregnancy / Gestational trophoblastic neoplasia
- Non-pregnant gynecologic causes:
  - PID, follicular or corpus luteum cyst rupture, endometriosis, ovarian torsion
- Common non-gynecologic causes:
  - Appendicitis, gastroenteritis, UTI, kidney stones, inguinal hernia

CLINICAL EVALUATION

- Physical exam
  - Vitals: look for tachycardia, or orthostatic changes in BP
  - General: can range from comfortable to severely ill/unconscious
  - Abdominal: can range from unremarkable to acute abdomen; abdominal or pelvic tenderness to palpation is present in 50% of patients
  - Pelvic: CMT is common, but adnexal masses may be hard to palpate

CLINICAL EVALUATION - LABS

- Serum Beta HCG (mIU/ml): Confirm pregnancy and evaluate for abnormal vs normal pregnancy by trending ß-hCG values across 48hrs
  - If first hCG <1500, it should rise by **49%** in 48hrs
  - If first hCG 1500-3000, it should rise by **40%** in 48 hours
  - If first hCG >3000, it should rise by **33%** in 48 hours

More on **FLAME 81:** Evaluation of 1st Tri Vaginal Bleeding

- CBC: To check for anemia
- Blood type and screen: If Rh negative, will need Rhogam
- Serum progesterone: >20 ng/mL: normal IUP; 5-20: equiv; <5: abnormal
  - MUCH less specific and rarely used anymore, however if truly <5 ng/mL, there is a 100% chance of abnormal pregnancy[2]

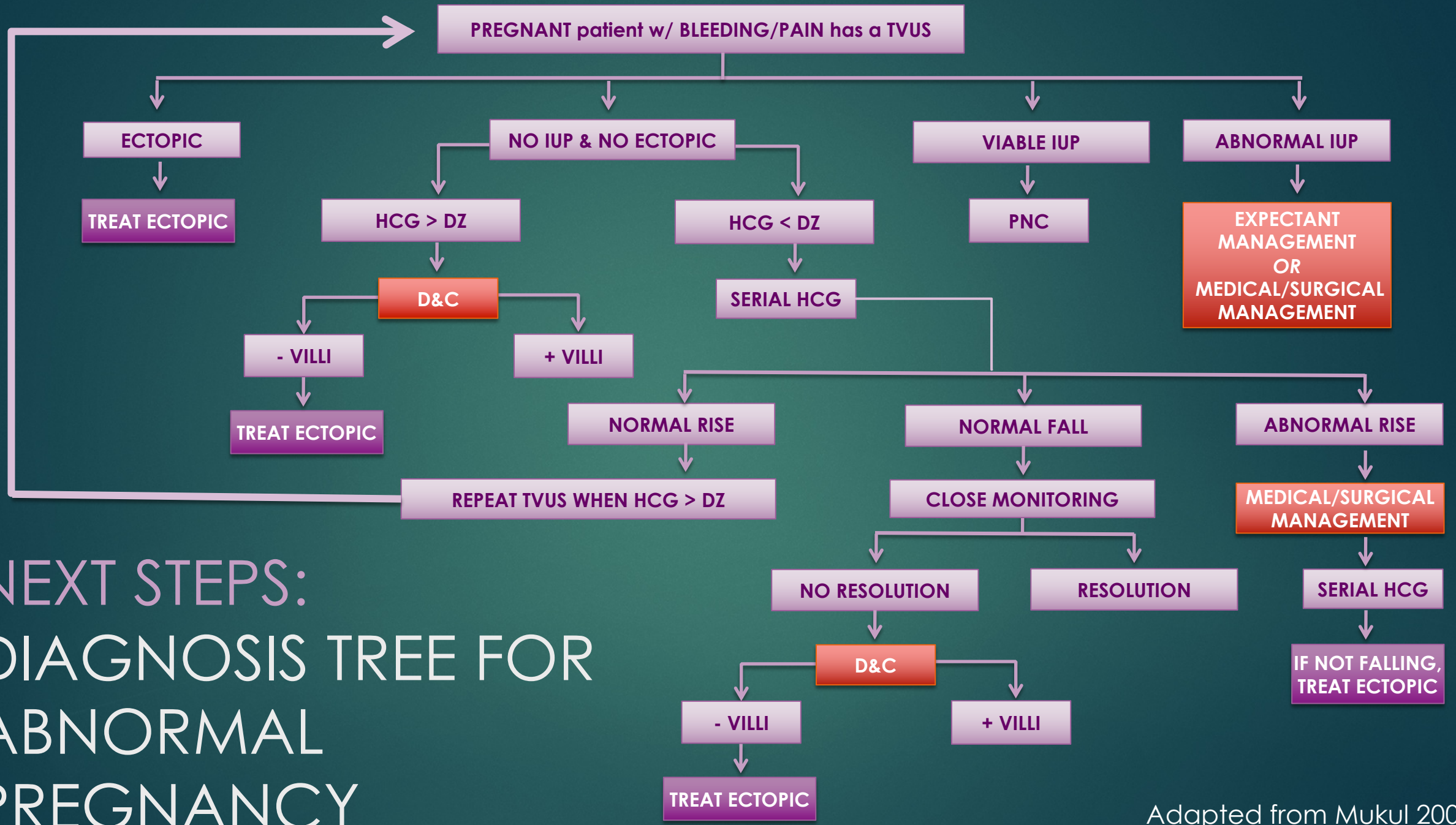
OTHER DIAGNOSTIC TOOLS

- Imaging: Transvaginal ultrasound used to evaluate for pregnancy location and signs of internal bleeding

More on **FLAME 81:** Evaluation of 1st Tri Vaginal Bleeding

- Dilation & curettage (aspiration)
  - Used when an abnormal pregnancy has been confirmed by US or ß-HCG, however, one is unsure whether there is an abnormal IUP or ectopic
    - Evaluating for chorionic villi on D&C may decrease morbidity before escalating care to MTX or laparoscopy
- Culdocentesis - using a needle to check for blood in the posterior cul-de-sac which would be present if an ectopic pregnancy ruptured
  - Rarely used given modern ultrasound availability

NEXT STEPS: DIAGNOSIS TREE FOR ABNORMAL PREGNANCY



Adapted from Mukul 2007

IMPORTANT LINKS & REFERENCES

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