



# SURGICAL MGMT OF ECTOPIC PREGNANCY

FLAME LECTURE: 84

C KIM 3.7.17

# LEARNING OBJECTIVES

- ▶ To describe surgical management of ectopic pregnancies
- ▶ Prerequisites: None
- ▶ See also for closely related topics:
  - ▶ [FLAME LECTURE 82](#): Diagnosing an ectopic pregnancy
  - ▶ [FLAME LECTURE 83](#): Medical management of ectopic pregnancies

# ECTOPIC PREGNANCIES



- ▶ Historically (before the advent of ultrasound), ectopic pregnancies were managed surgically, due to the high mortality rate
- ▶ Currently, medical management is now preferred for most patients
  - ▶ Some women undergo surgical therapy by choice or by necessity

# CANDIDATES FOR SURGERY

- ▶ Absolute indications for surgical therapy include:
  - ▶ Hemodynamic instability
  - ▶ High suspicion of or risk for rupture
  - ▶ Contraindications to methotrexate
  - ▶ Failed medical management with methotrexate
- ▶ Relative indications for surgical therapy include:
  - ▶ Tubal pregnancy > 5cm, fetal cardiac activity present, gest. sac > 3.5cm
  - ▶ Unwilling or unable to be compliant with close surveillance
  - ▶ Do not have timely access to a medical institution
- ▶ In patients who are eligible for either medical or surgical treatment, the choice of therapy should be guided by the patient's preference after a detailed discussion of risks, benefits, outcome, and monitoring requirements of both medical and surgical approaches

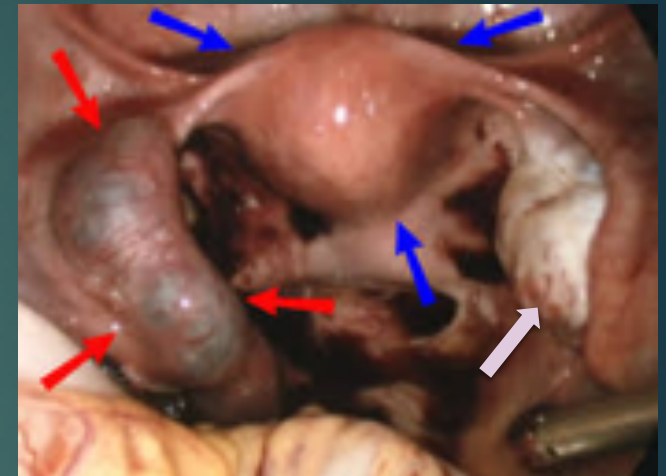
# ADVANTAGES OF SURGERY



- ▶ In modern times, *open surgery* is generally only reserved for acutely unstable patients or patients with significant abdominal adhesions from prior surgery/infection
- ▶ Laparoscopy is associated with:
  - ▶ Faster recovery
  - ▶ Shorter hospitalization
  - ▶ Reduced overall costs
  - ▶ Less pain
  - ▶ Less bleeding
  - ▶ Less adhesion formation

# OPEN VS LAPAROSCOPIC

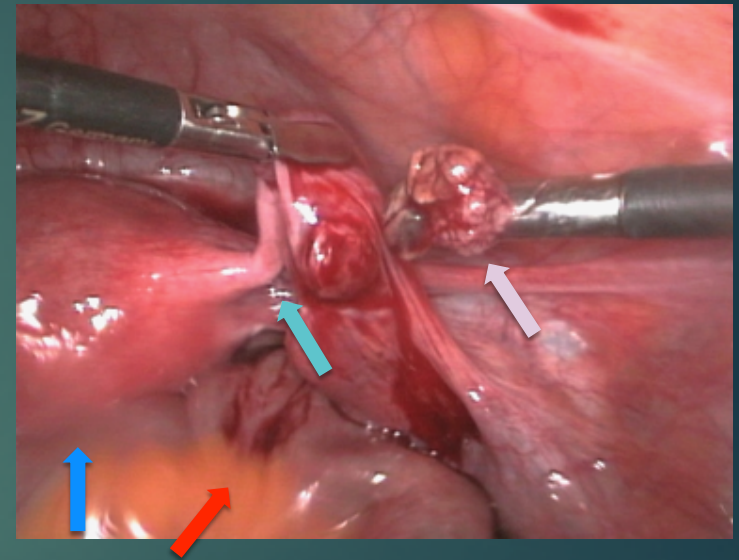
- ▶ L/S surgery is a good option for almost all unruptured ectopic pregnancies
  - ▶ However, even with ruptured ectopics, as long as the patient is hemodynamically stable and the bleeding can be identified and controlled, the procedure may continue laparoscopically
- ▶ Contraindications for laparoscopy
  - ▶ Surgeon's lack of skills, Inadequately-equipped operating room, shock, markedly increased intracranial pressure, retinal detachment
- ▶ Location of the ectopic may also be a factor since some surgeons prefer laparotomy for interstitial/cornual pregnancies



Red: unruptured left tubal ectopic pregnancy  
Blue: happy uterus  
Pink: normal right tube/ovary

# SURGICAL OPTIONS

- ▶ Whether surgery is performed open or L/S, if the pregnancy is in the tube, either a salpingostomy or salpingectomy can be performed
- ▶ Salpingostomy: opening up the tube and removing the pregnancy (pictured right)
- ▶ Salpingectomy: taking out a section of tube where there pregnancy located
  - ▶ Though given that tube is now non-functional, the recommendation would be to take the entire tube to decrease ovarian cancer risk
- ▶ Additional surgery may need to be performed if the pregnancy is not located in the tube
  - ▶ Ex. cornual ectopic, ovarian ectopic



Laparoscopic right salpingostomy with removal of the pregnancy from the tube. The uterus is featured on the left, and there is bowel in the pelvic cul-de-sac

# SALPINGOSTOMY

- ▶ Future natural conception rates within 3 years: 61%
- ▶ Recurrent ectopic in ANY tube: 8%
- ▶ Recurrent ectopic in SAME tube: 3%
- ▶ Rate of persistent ectopic: 7%
  - ▶ Must follow bHCG levels to 0, and if plateaus, requires MTX vs. salpingectomy
  - ▶ Failure rate increases when ectopic measures < 2cm
- ▶ Salpingostomy may be considered in women who:
  - ▶ Have an unruptured tubal pregnancy who desire future fertility, especially if the contralateral tube is absent/damaged

# SALPINGECTOMY

- ▶ Future natural conception rates within 3 years: 56% (thus why salpingostomy??)
- ▶ Recurrent ectopic in ANY tube: 5%
- ▶ Recurrent ectopic in SAME tube: <1%
- ▶ Rate of persistent ectopic: 1% → ↓ need for follow-up or adjuvant treatment with MTX
- ▶ Salpingectomy is the **GOLD standard** if:
  - ▶ The condition of the tube is compromised (ruptured or otherwise disrupted)
  - ▶ Bleeding is uncontrolled
  - ▶ It is a recurrent ectopic
  - ▶ Ectopic measures > 5cm
  - ▶ In settings of completed childbearing (consider bilateral salpingectomy)



# L/S SALPINGOSTOMY VS MTX

- ▶ MTX is as effective as L/S salpingostomy with similar future rates of tubal patency, future intrauterine pregnancy, and recurrent ectopic
- ▶ Adverse effects and complications MORE common in women treated with systemic MTX than with surgery (60 versus 12%)
- ▶ Medical treatment costs ~\$3000 less than surgery per resolved ectopic pregnancy
- ▶ Physical and psychological functioning after treatment was improved in patients treated w/ single dose MTX; however, women treated with multidose regimens showed greater functional impairment than their surgical counterparts
- ▶ The time required for hCG concentrations to reach undetectable levels is faster after surgery, thus reducing the period of posttreatment monitoring

# PRE-OP CONSIDERATIONS

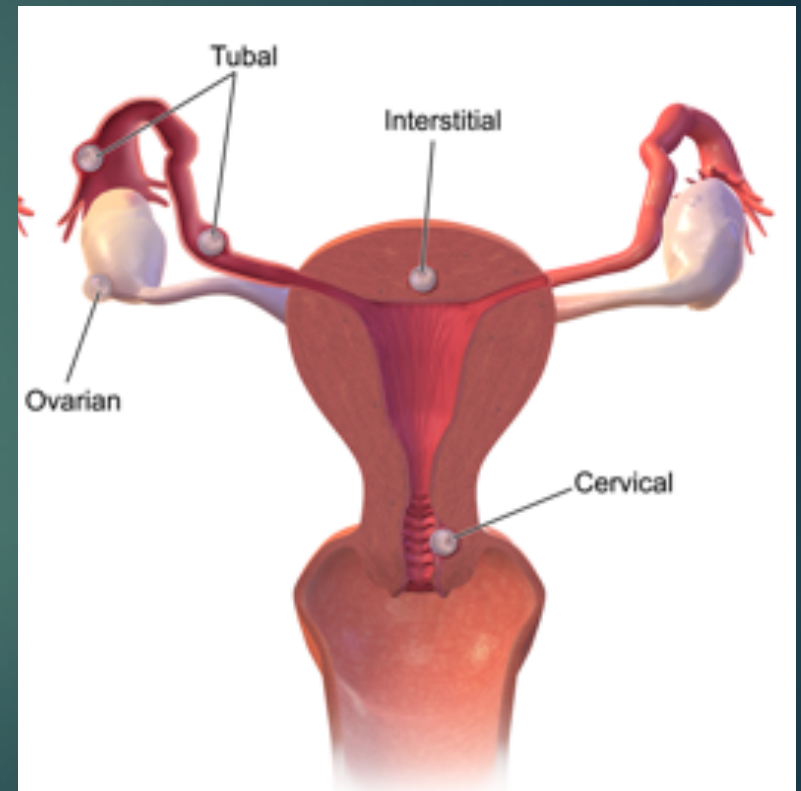
- ▶ **Pre-op Labs:** serum bHCG, PT/PTT/INR, CBC, Type & Hold/Cross for 2-4 units of PRBCs depending upon acuity
  - ▶ Not only is the having blood on hold in the blood bank important for predicting blood loss, but if the patient is **Rh negative**, she will still need **Rhogam** to prevent **isoimmunization**
  - ▶ Consider LFTs and Cr if primary procedure plan is for salpingostomy given a baseline labs are important if there is a chance the patient may receive adjunctive MTX
- ▶ Confirm patient's desires for future fertility
- ▶ Counseling
  - ▶ Always consider consenting for possible **salpingostomy, salpingectomy, salpingo-oophorectomy, and exploratory laparotomy** regardless of which procedure is planned as the primary procedure
  - ▶ Patients that desire a salpingostomy **MUST** be compliant to weekly lab and understand that they still may need MTX in case of persistent ectopic

# POST-PROCEDURE CONSIDERATIONS

- ▶ Discuss with patient surgery findings and encourage patient to obtain a copy of her records for future providers
- ▶ Follow up on surgical pathology
- ▶ For patients s/p salpingostomy, follow with bHCG weekly until normal
- ▶ Counseling
  - ▶ Probability of having IUP in the future after 1 ectopic is about ~50-60%
  - ▶ Probability of having another ectopic is 6-15%, increases to 30% if patient has had 2 ectopics
  - ▶ Recommend early prenatal care to locate all subsequent pregnancies

# NON-TUBAL ECTOPICS

- ▶ Cornual Ectopic (interstitial pregnancy)
  - ▶ Usually treated with segmental resection of the cornua or hysterectomy
  - ▶ Fixed multi-dose MTX to intra-sac MTX can be considered
- ▶ Cervical Ectopic
  - ▶ The best treatment is unclear due to the limited number of cases in the literature
  - ▶ Treatment ranges from multi-dose MTX to intra-sac MTX to hysterectomy. Dilation and evacuation is associated with a high incidence of severe hemorrhage
- ▶ Abdominal Ectopic
  - ▶ Early abdominal pregnancy is confirmed and managed via laparoscopy
  - ▶ Late abdominal pregnancy should be managed by laparotomy
- ▶ Cesarean Scar Ectopic
  - ▶ Similar management as cervical ectopics



## IMPORTANT LINKS / REFERENCES

- ▶ PRACTICE BULLETIN 94 – [Medical Management of Ectopic Pregnancies](#)
- ▶ Barnhart KT. [Ectopic Pregnancy](#). N Engl J Med. 2009; 261:379-387.
- ▶ Al-Sunaidi M, Tulandi T. [Semin Reprod Med](#). 2007 Mar;25(2):117-22. Surgical treatment of ectopic pregnancy.