



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

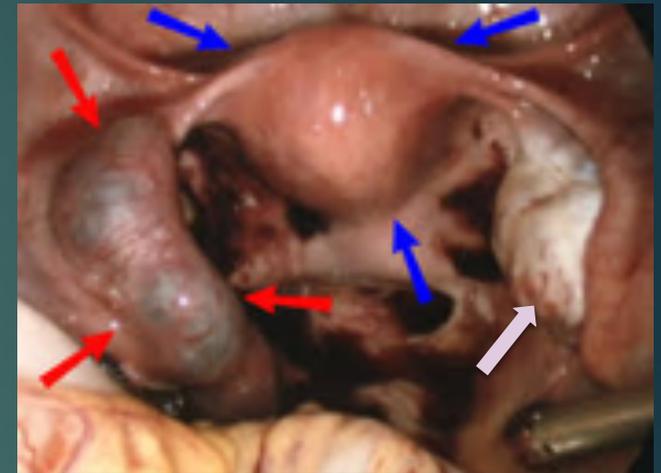
ADVANTAGES OF SURGERY



- ▶ 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

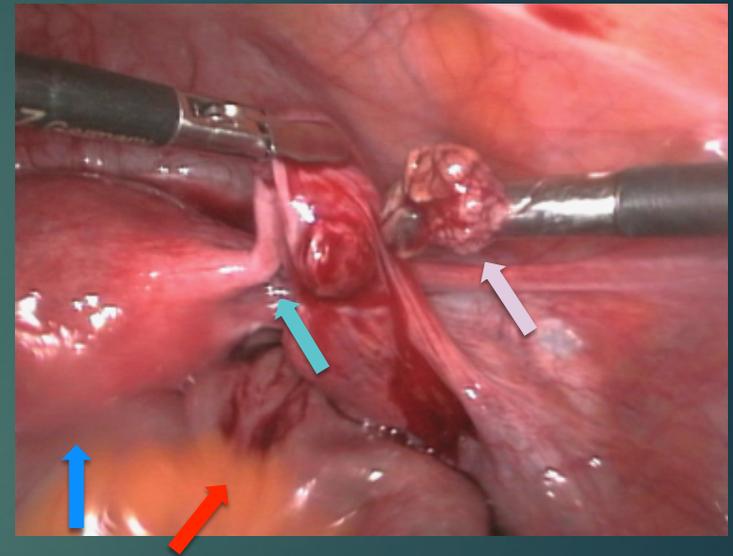
- ▶ L/S surgery is a good option for almost all unruptured ectopic pregnancies
 - ▶ However, even with ruptured ectopics, as long as the patient is hemodynamically stable and the bleeding can be identified and controlled, the procedure may continue laparoscopically
- ▶ Contraindications for laparoscopy
 - ▶ 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

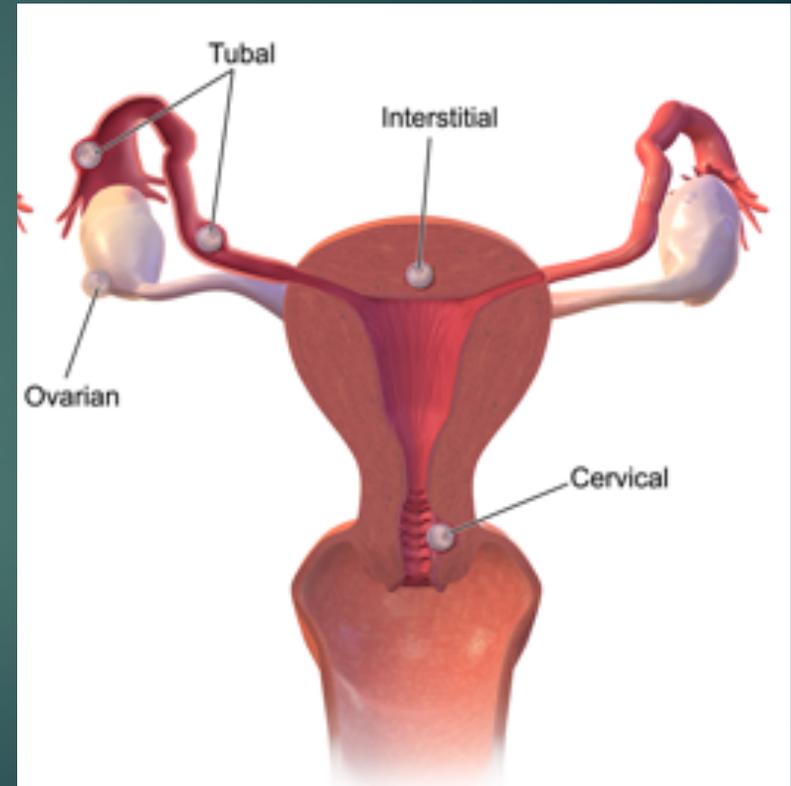
- ▶ Pre-op Labs: serum bHCG, PT/PTT/INR, CBC, Type & Hold/Cross for 2-4 units of PRBCs depending upon acuity
 - ▶ Not only is the having blood on hold in the blood bank important for predicting blood loss, but if the patient is Rh negative, she will still need Rhogam to prevent isoimmunization
 - ▶ Consider 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.