

## Vesalius SCALpel™ : Gynecology (see also: gynecology folios)

### Infancy and premenarche

ovarian cysts rare < 6mo, occasionally large, transilluminate  
do not resect: affects fertility  
if torsed untwist, tack  
only remove if solid mass, may be testicle  
most tumors outside infancy are malignant, most germ cell v epithelial  
when in doubt get FS, intraoperative consult

### PID

initial infection: gonorrhea, chlamydia  
once in pelvis polymicrobial, predominantly anaerobic  
elevated sed rate, C-reactive protein  
pt > 35 diverticulitis more common than PID  
large tuboovarian abscess does not need to be drained  
surgery  
    > 10 cm 70% need drainage  
    ruptured tuboovarian abscess (33% of cases)  
increased incidence of ectopic (2%), infertility, pelvic pain after PID  
Fitz-Hugh-Curtis: ascending perihepatitis  
    mimic cholecystitis, pneumonia, hepatitis, PID  
    acute pleuritic RUQ to shoulder pain, chronic dull ache  
    cervical culture chlamydia, neisseria, US, CT

### Endometriosis

endometrioma: pain, enlargement with menstrual cycle  
    med Rx: danazol/gonadotropin releasing hormone, treats pain, does not enhance  
        fertility  
    surgical: laser or resection  
        extensive may need TAH/BSO, bowel resection  
    laparoscopic Rx better results for fertility

### Ectopic

young woman with pelvic pain always think ectopic  
differentiate from early appendicitis, late PID  
    T > 101, WBC > 15k more likely PID  
    beta HCG blood, urine  
        >1500 95% chance it is pregnancy  
        transvaginal US 90% accurate  
terminate  
    MTX 50mg/M<sup>2</sup>

inject gestational sac (if not immediate risk of rupture): prostaglandin, hyperosmolar glucose, NaCl  
potential benefit for future pregnancy  
betaHCG < 1000, decreasing likely absorbing, observe

## Pregnancy

trauma: treat the mother, best outcome for fetus

physiologic changes:

50% increase in blood volume, 30% increase RBC mass  
= hemodilution, normal Hct 34

loss of 2L/30-40% of volume before tachy or drop BP, rapid deterioration > 2,500cc

CO increases 50% 1<sup>st</sup> trimester, uterine blood flow 20%, dependent on MAP  
20 weeks aortocaval compression decreases CO 30% supine

decreased BP due to progesterone induced decreased SVR

CVP drops from 9 to ~4 as uterus enlarges, HR increases ~15BPM

15-20% increased O<sub>2</sub> consumption

20% decrease FRC, rapid desaturation with decreased respiration

increased minute ventilation, decreased PaCO<sub>2</sub> 25-30, (normal level of 40 in pregnant trauma patient is concerning)

compensatory renal excretion bicarb, slight metabolic acidosis is normal  
increased PaO<sub>2</sub> ~105

maintain maternal O<sub>2</sub> sat > 95 to maintain PaO<sub>2</sub> > 70

fetal compromise < 60BPM

decreased gastric tone and motility and decreased LES tone, risk aspiration

lower ext. pooling increases blood loss in leg injury & increases risk of thrombosis

pelvic pooling increases risk retroperitoneal bleeding, hematoma

leukocytosis 15-25K normal

increased procoagulant factors helps hemostasis

low fibrinogen, split products, low platelets suggests DIC

increased risk DVT/PE, prophylaxis after stable

abruptio 3% with minor trauma, 50% with life-threatening

vaginal bleeding (80%), uterine tenderness, change fetal heart rate

US not sensitive for abruptio

if shock cannot be controlled with fetus > 26w do C-section

hyperthyroid: PTU preferred in pregnancy and lactation (carbimazole: fetal toxicity)

if poor control, total thyroidectomy during 3<sup>rd</sup> trimester

RAI option post partum

appendicitis:

prompt surgery all trimesters

US Dx

1<sup>st</sup> trimester hi risk fetal loss; open or laparoscopic appendectomy

as pregnancy advances, increasing rate of misdiagnosis, rupture

3<sup>rd</sup> trimester can do open appendectomy or laparoscopic with fetal monitor

same complication rate

3-5% fetal loss with acute appendicitis  
perforation, peritonitis, abscess results in 20-36% fetal loss  
cholecystitis: 2<sup>nd</sup> most common surgical emergency in pregnancy  
less Murphy's sign  
surgery better outcome than observation unless near term, then defer  
pancreatitis rare in pregnancy, gallstone related  
breast cancer: mastectomy or delay radiation to post partum if do breast conservation (BCT)  
no sentinel lymph node  
chemotherapy 2<sup>nd</sup>, 3<sup>rd</sup> trimester little risk to fetus

hot flashes: clonidine, gabapentin (selective serotonin reuptake) inhibit

overactive bladder: oxybutyryn (anticholinergic)

## Ovarian

adnexal mass

benign ovarian teratoma most common, shell out

cyst: explore at 8-10cm

endometrioma shell out

Meigs: hydrothorax, ascites associated with benign ovarian fibroma

also associated with ovarian stimulation from fertility Rx

torsion:

from mass: consider malignancy in older

more common during pregnancy (first pregnancy, 3<sup>rd</sup> trimester)

sudden onset with marked nausea and vomiting to OR

detorse, observe for color, necrotic do oophorectomy

if suspect cancer do most conservative thing first, unilateral

most present as stage III

pelvic exam and pelvic US only screening tools

marker CA125, also elevated in endometriosis, PID, liver disease, pancreatitis

contralateral Bx, not wedge

palpate opposite, if in doubt do FS

spreads by exfoliation

Bx suspicious areas, PAP diaphragm, washings

risks for ovarian: family history, older, early menarche, late menopause, BRCA1 16% lifetime

risk, nulliparity

BCP may decrease risk

proven ovarian cancer: TAH/BSO (facilitate F/U exam), omentectomy, debulk, leave no

tumor > 1cm

cytoreduction affects prognosis, more important than size or number of mets

platinum based systemic chemo

chemoresistance assay useful only for recurrent or refractory

bowel obstruction most common complication

post-menopausal adnexal mass = ovarian cancer until disproven

## **Endometrial cancer**

most common GYN cancer  
most detected early by bleeding  
90% 5y survival  
risks: increased estrogen exposure  
    exogenous  
        HRT  
        2X risk with TAM in women > 50  
    endogenous  
        obesity  
        anovulatory cycles  
        nulliparity  
        late menopause  
        FH  
        HNPCC  
reduced risks: OCP, multiple pregnancies

## **Cervical cancer**

screen starting 3y after 1<sup>st</sup> intercourse and < age 21  
liquid-based PAP more sensitive  
55% sensitive for cervical intraepithelial neoplasia  
human papilloma virus implicated, potential for future testing