Acute Pelvic Pain: A Practical Approach
Christine Isaacs, MD
Associate Professor Department of Obstetrics & Gynecology
Virginia Commonwealth University
School of Medicine
Richmond, VA

Richmond, Virginia

“I’ve have this terrible pain…”
23 year-old female with acute onset left lower quadrant pain

- Sharp, severe and stabbing in nature (“10 out of 10”)
- Started while running but is persisting despite rest
- Had a similar episode 1 week ago that resolved spontaneously after leaving work
- She has had 2 episodes of nausea and vomiting while waiting for her appointment
- OTC analgesics have not helped

PMHx…none
PSurgHx…none
No current prescriptive meds
G0
Not sexually active at present
Uses condoms

Physical Exam & Office Assessment

- Vital Signs:
  - Afebrile
  - BP: 126/72
  - Pulse: 107
  - Respiratory rate: 19
- Appearance: uncomfortable
- Abdomen: moderate tenderness to deep palpation
- Pelvic: Left adnexal pain with a palpable tender mass
- UPT…negative
- CBC…normal

Transvaginal Ultrasound

What is your diagnosis? How would you manage this patient?
Send to the ER for more evaluation?
- Treat with antibiotics?
- Pain medications?
- Surgery?

To OR for diagnostic laparoscopy

Intraop...
Ovary was unwound
A cystectomy was performed
The patient had an uneventful postoperative course
Pathology: Benign serous cyst

Ovarian torsion
- Rotation of an ovary around its vascular and lymphatic pedicle resulting in vascular compromise
- Most common in early reproductive years
- Prompt diagnosis and surgical management optimizes preservation of ovarian function
- Diagnosis is difficult!
- Requires high clinical suspicion!

Diagnosis...
- Often acute, sharp pain
- Pain may radiate
  - Flank
  - Groin
  - Thigh
  - Back
- Vital signs are usually normal
- No specific lab findings
- PE can be inconclusive ~50% have palpable masses

Ultrasound
- Large ovary...most constant finding
  - Cysts, neoplasm
  - Rare to see torsion from cysts <5cm
  - Most common tumor predisposed for torsion...benign mature cystic teratoma
  - How often? 3.5%

Up to 3/4 cases US may demonstrate multiple small uniform cysts aligned in the periphery (appearance due to follicles displaced to the periphery due to marked edema and venous congestion)

(Olivi, Clinical Obstetrics & Gynecology, 2004)

(Chang, radiographics.rsna.org, 2008)
Ultrasound...Doppler

- Color Doppler flow...highly variable
- Reflects the degree of vascular compromise
- Increased smooth muscle tone in arteries may allow for an uncompromised appearance despite collapse of the thin vein walls
- The presence of Doppler flow does not exclude torsion
- Most common finding is decreased or absent venous flow
  [Chang, RadioGraphics 2008]

- Studies have shown “normal” color Doppler up to 60%
  [Albayram, J Ultrasound Med, 2001]

Treatment...

- Expedient operative evaluation
- Diagnostic laparoscopy
- Untwisting the vascular pedicle to reestablish blood flow
- Ovarian function is preserved in 88-100% of cases
- Removal of pathology...controversial
  [Oelsner, Clinical Obstyn, 2006]

- Percentage of cases get the correct presurgical diagnosis?
  [Roche, J. Insights Imaging 2012; 3(3):265-75.]

23-66%

Ischemic-hemorrhagic, black-bluish appearance of the adnexa is a result of venous and lymphatic stasis...NOT gangrene
[Oelsner, 2006]

Does NOT indicate the degree of true damage to ovarian tissue

The duration of ischemia causing irreversible tissue damage is unknown

23 year-old with pelvic pain who reports low grade fevers x 24 hours

- G1P1, LMP 3 weeks prior
- 1 month history of vague lower abdominal pain which has gotten much worse over the past 3 days
- Sexually active with the same partner
- OCPs for birth control
- Tearful with discomfort
PMHx...none
PSurgHx...none
Ob Hx...SVD x 1, uncomplicated
Meds... Oral Contraceptive Pills
Social Hx...works in retail. Same partner x 18 months. Non smoker, occasional alcohol consumption

What is your diagnosis?
How would you manage this patient?

• Immediate treatment for PID (Pelvic Inflammatory Disease)
• CDC guidelines for treatment

Minimum Criteria

Criteria to enhance specificity to support the diagnosis:

• Pelvic or lower abdominal pain
• No other cause for the illness
• ONE or more of the following:
  • Cervical motion tenderness
  • Uterine tenderness
  • Adnexal tenderness

• Temp 38 C
• Abdomen...soft, bilateral lower tenderness to palpation. No guarding or rebound. No flank pain.
• Pelvic:
  • Cervix: (image)
  • Bimanual: + Cervical motion tenderness. Right adnexal fullness with moderate tenderness on palpation
• UPT ...negative

Endometrial biopsy with histopathologic evidence of endometritis
TV US or MRI showing thickened, fluid-filled tubes with or without free pelvic fluid or tubo-ovarian complex, or Doppler studies suggesting pelvic infection
Laparoscopic abnormalities confirming PID

Most specific criteria for diagnosis of PID...

1995

Obstetrics Gynecology & Infertility

Severe illness, nausea, vomiting, high fever? TRUE!
Unable to tolerate outpatient oral regimens? TRUE!
Inadequate response to oral treatment? TRUE!
Pregnancy? TRUE!
Presence of a tubo-ovarian abscess? TRUE!
Surgical emergencies (ex. appendicitis) cannot be excluded? TRUE!
Teen? FALSE!

48 hours later.... Still with pain and fever

(CDC 2010, MMWR 2010; 59.)
Ascending bacterial infection of the upper female genital tract
- Often polymicrobial
  - N. gonorrhoea
  - C. trachomatis
  - Vaginal anaerobes
  - Enteric gram-negative rods
  - Genital mycoplasma

PID (Pelvic Inflammatory Disease)

Presentation: diverse & often subtle
- Delays in treatment:
  - 3 day delay in treatment = 3 fold increase in sequela

Chronic pelvic pain up to 30% after a single occurrence

3 or more episodes of PID:
- Tubal infertility...up to 75%
- Ectopic pregnancy...up to 14%
  [Soper, Obstet Gynecol 2010]

PID (Pelvic Inflammatory Disease)

What if she had an IUD in place?

- Remove it?
- Admit to the hospital for IV antibiotics?
- Treat with close follow up?

IUD may be left in place

- Close follow up within 2-3 days
- Consider removing if outpatient treatment fails
- Insufficient evidence to recommend removal of IUDs in women diagnosed with acute PID
  [www.cdc.gov/std/treatment/2010/pid.htm]

After 48 hours of inpatient IV antibiotic treatment, she met criteria for discharge
Her sexual partner was asymptomatic. He received Expedited Partner Treatment.

1 patient left....
• Started 2 days ago but has gotten progressively worse
• Rates this as “9 out of 10”
• No other symptoms (fevers, nausea, emesis, dysuria, constipation)
• LMP 21 days prior
• Sexually active with 1 partner
• Uses condoms for birth control
• No Medical or Surgical history to report

23 year-old female with abdominal and low back pain

• General: Mild distress
• Vital Signs: Normal
• Abdomen: moderately tender to palpation in the LLQ, + voluntary guarding, no obvious masses
• Pelvic:
  • No vaginal discharge
  • No cervical motion tenderness
  • Normal pelvic anatomy, no masses
  • Tender to palpation in the left adnexa

Physical exam...

Office labs...
• Negative UPT
• U/A negative
• Hgb 13.2 g/dL (nl 12.0-16.0)

Ultrasound evaluation....

Ultrasound

Ruptured Hemorrhagic Ovarian Cyst

What is your diagnosis?

Common cause of acute abdominal pain in reproductive age women
• US is the diagnostic tool of choice
• Presentation can vary greatly
  • Asymptomatic incidental findings
  • Severe pain
  • Hemodynamic instability

Ruptured Ovarian Cysts

The pain of a ruptured hemorrhagic ovarian cyst can persist for days to weeks while the hemoperitoneum is resorbed

(Johnsen, Acute Care and Emergency Gynecology, 2015)
• Vessels in the highly vascular corpus luteum are disrupted...leads to hemorrhage into the ovary
• If cyst rupture occurs, the resulting hemoperitoneum will cause peritoneal irritation and pain
• R:L frequency

• Surgery may be necessary if:
  • Large amounts of blood in the abdomen
  • Significant anemia
  • Signs of hemodynamic instability
  • Uncertain diagnosis

• Given analgesics and followed conservatively
• Repeat imaging in 2 months showed full resolution and normal pelvic anatomy
• OCPs were initiated to decrease the risk of developing a recurrent cyst

(Johnson, Acute Care and Emergency Gynecology, 2015)

Follow up....

Shameless plug...

January 2015

Effective Lectures....

• Your attention span to listen is between 10-15 minutes
• Students capture ~20-40% of main ideas
• After 3 weeks, you remember less than 10% of what was said

- Torsion...
  - Hard to diagnose
  - Must act on clinical suspicion!
  - You need an ovarian mass

- PID...
  - Have low clinical suspicion and initiate treatment
  - CDC app for guidelines

- Ruptured ovarian cyst...
  - Transvaginal ultrasound is the method of imaging
  - Most patients can be managed conservatively

20-40%...

10%...

Returning 2016!!!