

# Abdominal Pain

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# Objectives

- Approach to abdominal pain
- Evaluation
- Critical diagnoses and treatments

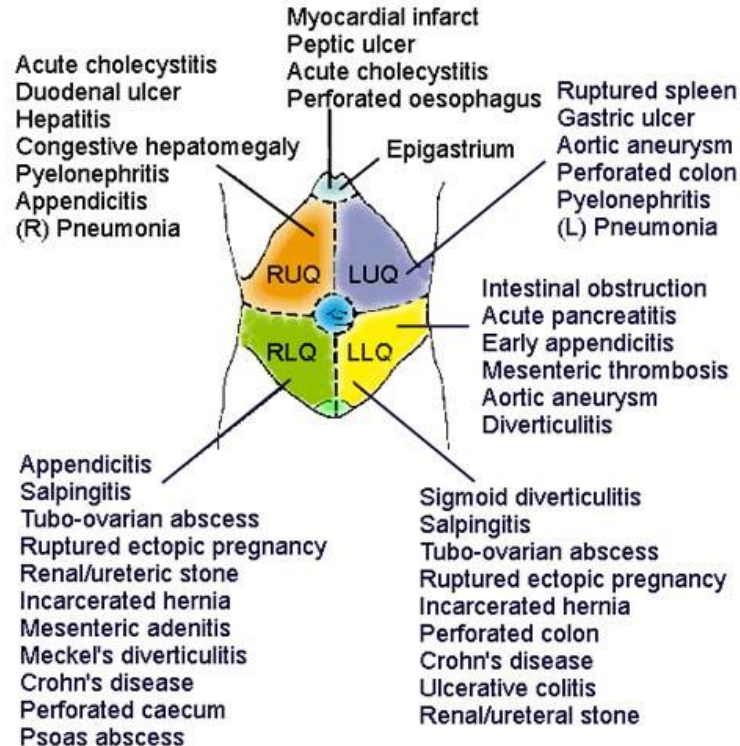
# Abdominal Pain

- Most Common ER Complaint
- Broad Differential
- Can often be indicative of illness involving other systems (MI, PNA, sepsis)
- Focus on intrinsic causes of abd pain

# Causes of abdominal pain

?

# Causes of abdominal pain



# Critical diagnoses

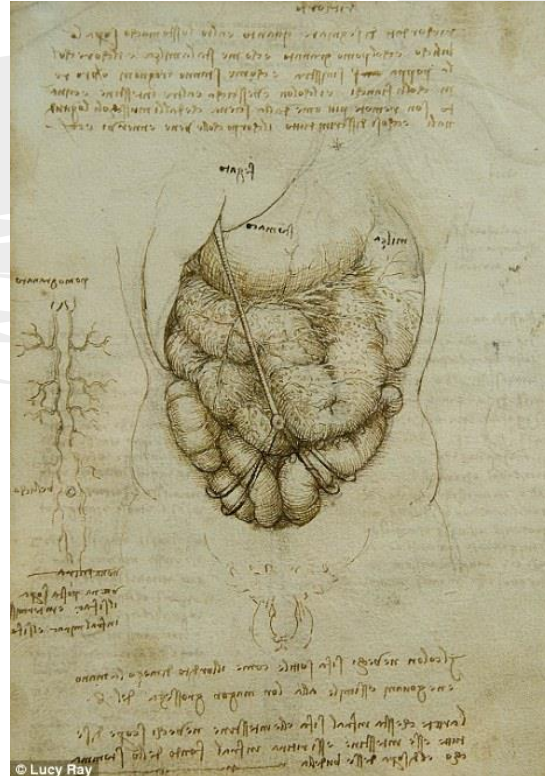
Appendicitis

AAA

Small Bowel  
Obstruction

Cholecystitis

Pancreatitis



Ectopic  
Pregnancy

Ovarian  
Torsion

# Initial assessment

- Primary survey
  - ABC, IV, O<sub>2</sub>, Monitor
- Abnormal vitals
- General appearance
- Urine HCG



# History

- Provocation/Palliation
- Quality
- Region/radiation
- Severity
- Timing
- Associated Symptoms
- Last BM/LMP/Last Meal



# History

- PMH
- PSH
- Meds/All
- Fam Hx
- Soc Hx

# Physical exam

General

Vitals

Lungs

Abdomen by quadrant

Check for rebound/guarding/distention

Check for pulsatile masses

Pelvic Exam

# EMS brings in patient



# Minute 1

Initial assessment/ABCs

Vital signs

IV, O<sub>2</sub>, Monitor

EMS history

# Minute 5

What kind of history do you want?

Any tests?

Any medications?

# Minute 5

SAMPLE history

If female under 50-urine HCG

ECG, US of aorta

Belly labs-(CBC, CMP, Lipase, VBG, UA)

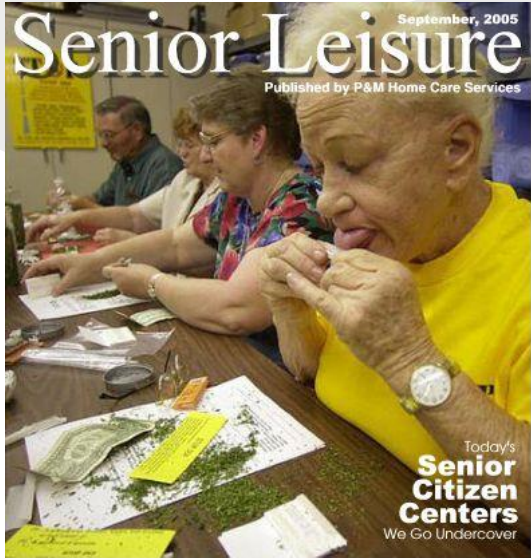
Medications:

Vomiting-Zofran

Indigestion/Heartburn-Pepcid

Pain-Morphine

# Be very worried if



The Latest Senior Citizen Humor

[www.pmcaregivers.com/Humor.htm](http://www.pmcaregivers.com/Humor.htm)

## OR



# Minute 15

Pt is stabilized, initial data gathered, labs and imaging ordered.

Meds ordered to address symptoms

Begin refining differential

-Use EKG, US, Urine HCG, Vitals



# Case 1

33 y/o F with no PMH presents with RLQ pain. Exam reveals TTP in RLQ with guarding.



# Differential

Appendicitis

Ovarian Torsion

Ectopic Pregnancy

Kidney Stone

AAA

# Findings

Gradual Onset, +nausea, +anorexia

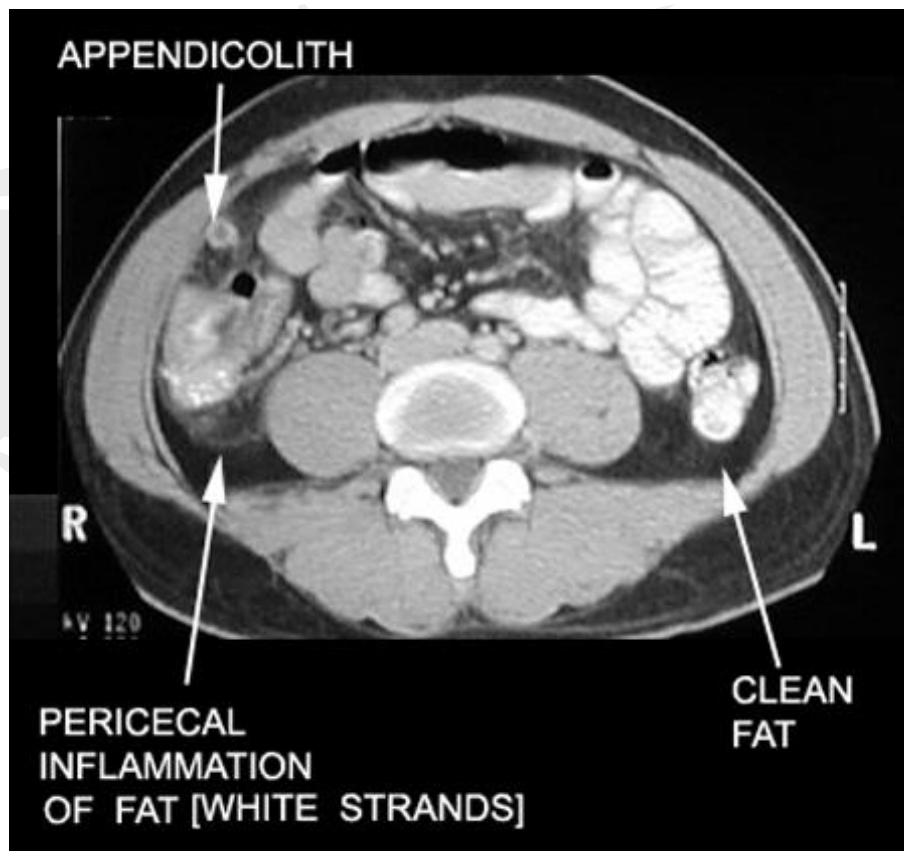
WBC 12, Hb-14, Lipase-nml, Alk Phos-nml

HCG--Negative

US: normal Aorta

Other Imaging?

# CT



# Appendicitis

## Symptoms

Right lower quadrant pain/Periumbilical Pain

Loss of appetite

Vomiting

## Exam

RLQ tenderness

Fever

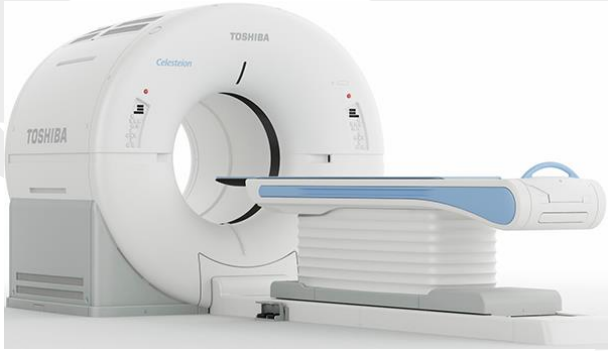
+/- rebound

**Table 30-2 Alvarado Scale for the Diagnosis of Appendicitis**

	<b>Manifestations</b>	<b>Value</b>
Symptoms	Migration of pain	1
	Anorexia	1
	Nausea and/or vomiting	1
Signs	Right lower quadrant tenderness	2
	Rebound	1
	Elevated temperature	1
Laboratory values	Leukocytosis	2
	Left shift in leukocyte count	1
		Total points 10

# Appendicitis

Test of Choice



Management

Surgery Consult

NPO

Fluids

Morphine

Abx

# Case 2

33 y/o F with no PMH presents with RLQ pain. Exam reveals TTP in RLQ with guarding.





# Differential

Appendicitis

Ovarian Torsion

Ectopic Pregnancy

Kidney Stone

AAA

# Findings

Gradual Onset, +nausea, +anorexia

WBC 12, Hb-14, Lipase-nml, Alk Phos-nml

Urine HCG--POSITIVE

Quant Beta HCG-5,000

Next Step?



## Ectopic Pregnancy-Likelihood Ratios

CMT-4.9

Adnexal mass-2.4

Adnexal tenderness 1.9

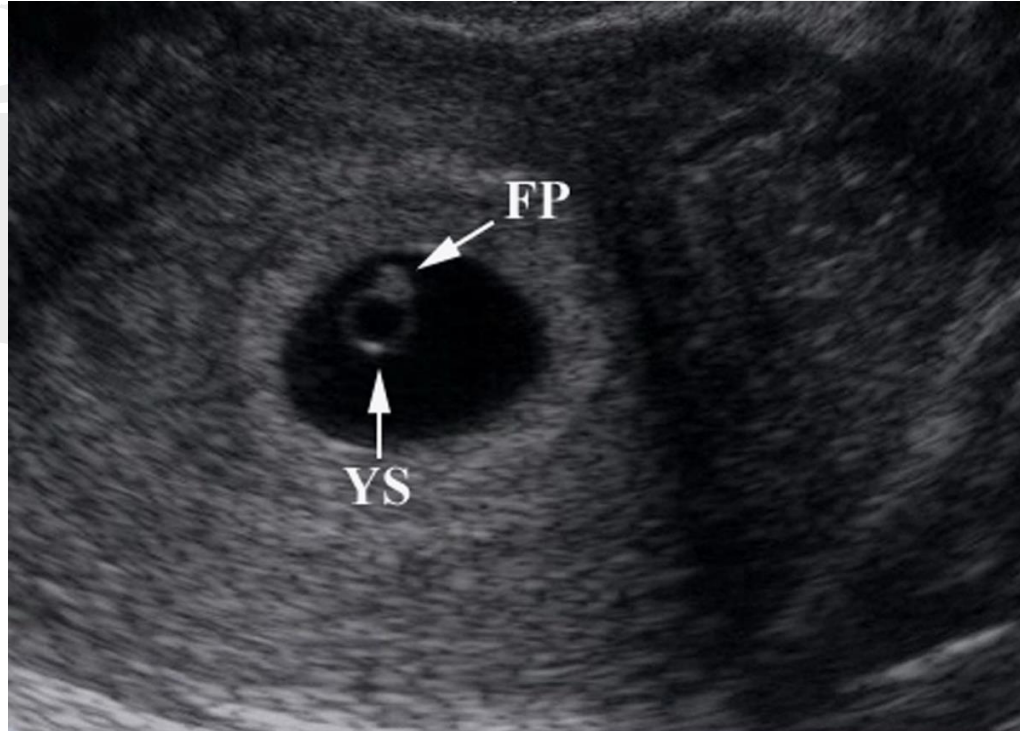
Ultrasound-111

No IUP on US in pregant patient is  
ectopic until proven otherwise

# IUP



# IUP



# NO IUP



# Ectopic



# Ectopic Pregnancy

## Symptoms

Abdominal Pain

Syncope

Vaginal Bleeding

Vomiting

## Exam

Lower abdominal tenderness

Adnexal TTP

CMT

Peritoneal Abdomen



# Ectopic Pregnancy

## Labs

Quant B-HCG, CBC, Coags, Type and Screen  
-very low B-HCG cannot rule out ectopic

## Management

- STAT GYN consult
- NPO
- Medical vs Surgical Management

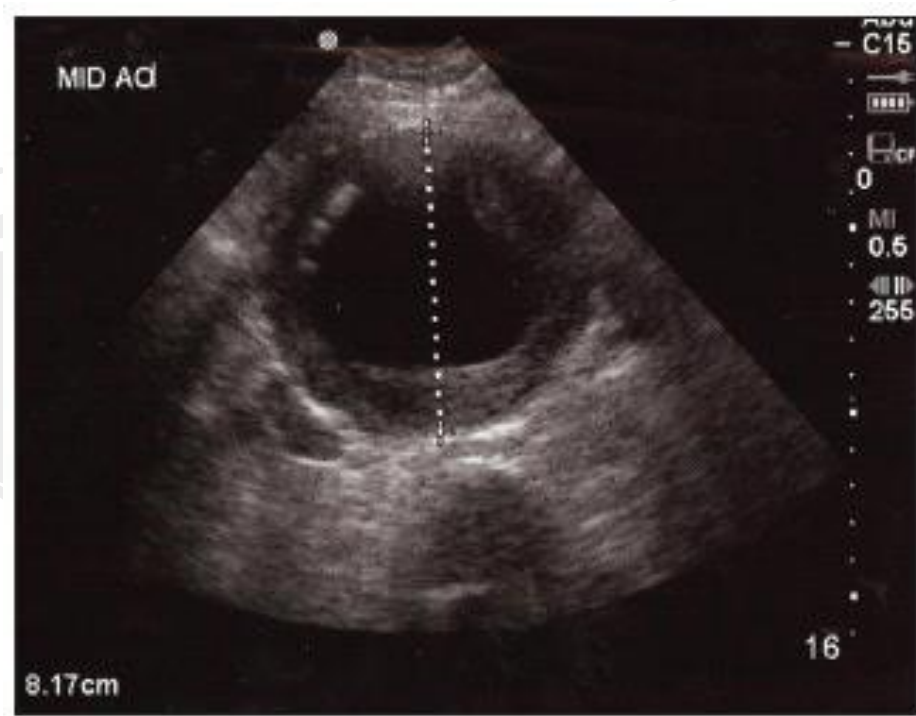
# Case 3

72 y/o M presents with abdominal pain, and back pain. Exam shows BP of 90/60 and a pulsatile mass in the abdomen.

Next Step???







>3cm-abnormal

# AAA

## Risk Factors

Smoking

Male Gender

Age over 65

HTN

HLD

## Symptoms

Abd, Flank or Back Pain-can mimic renal colic

Syncope or Dizziness-due to low BP

# AAA

## Risk Factors

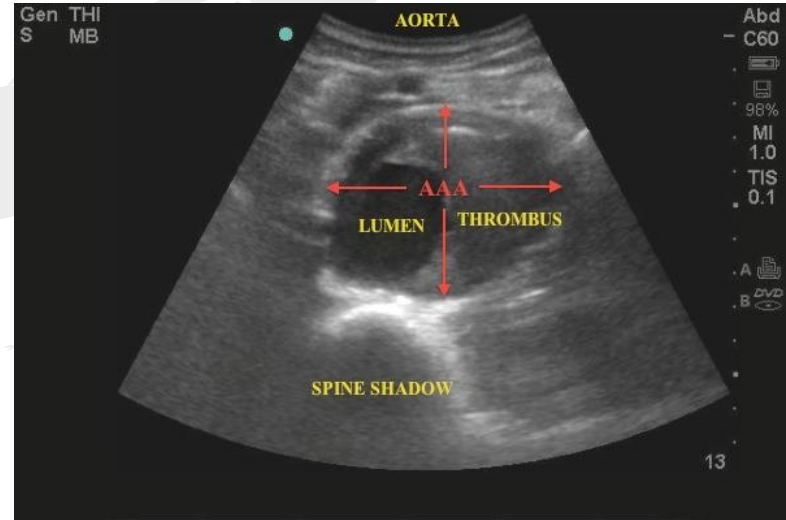
Smoking

Male Gender

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## Symptoms

Abd, Flank or Back Pain-can mimic renal colic

Syncope or Dizziness-due to low BP

# AAA

## Tests

- US is test of choice

- CT is useful for surgeons to plan procedure

- CBC

- Type and Screen-transfuse if ruptured

- Pre op labs

## Management-Rupture

- Surgical Repair

- Volume resuscitation

- Target Systolic 90-100

# Case 4

72 y/o M h/o appendectomy presents with diffuse abdominal pain and vomiting.

Vitals: 156/90 88 20 98.2 98%





# Differential

Pancreatitis

SBO

MI

Sepsis

Gastritis

Gastroenteritis

Colitis

Cholangitis

SBP

AAA

UTI

Perforated Viscous

GI bleed

# Findings

Last BM 3 days ago  
Vomiting green liquid

Exam:

- Belly distended, diffusely ttp
- Tympanic

Labs:

- lactate 4.6
- WBC 13, Hb 15, Lipase nml

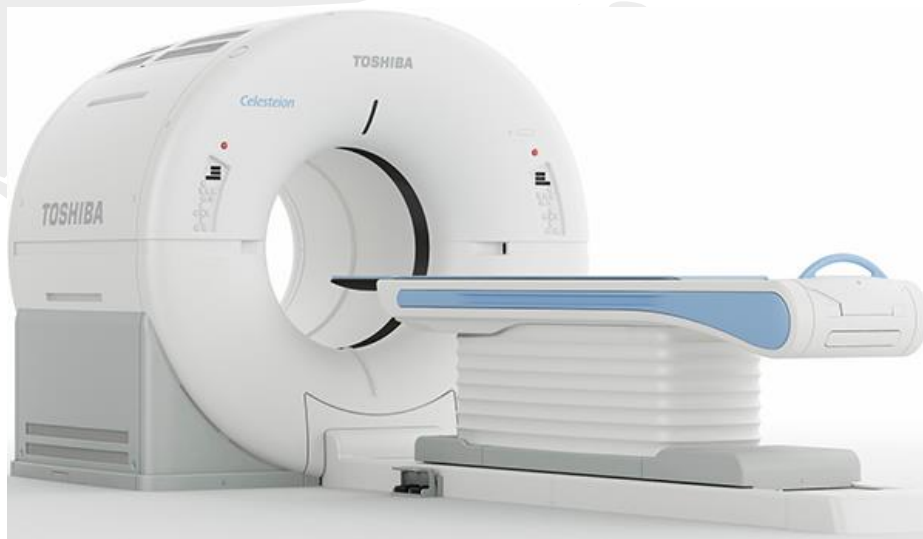
# Diagnosis



Small Bowel Obstruction

# SBO

## Test of Choice?



# SBO

## Management

- Gastric Decompression (NG Tube)
- IV fluids
- Anti emetics
- Pain Control
- NPO
- Surgery consult

# Case 5

48 y/o F no pmh, presents with epigastric and RUQ pain, fever and vomiting

Vitals: 150/90 88 20 100.5 98%

# DDX

Cholecystitis

Cholangitis

Hepatitis

Pancreatitis

Gastritis

Pyelonephritis

Perforated Ulcer

# Findings

Symptoms for 10 hours, began after eating

Exam:

- RUQ TTP
- +Murphy's sign

Labs:

- WBC 14, Lipase nml, lactate 2.4, Alk Phos-274
- AST 224 ALT 198



# Next Step?





# Cholecystitis

## Risk Factors

- gallstones
- female gender
- obesity

## Symptoms/Exam

- RUQ pain and tenderness
- no one finding can make diagnosis

## Diagnostic testing for cholecystitis

Trowbridge RL et al. Does this patient have acute cholecystitis?

JAMA. 2003; 289(1): 80-6.

Meta-analysis of 17 studies which evaluated role of history, physical, and lab tests in working up cholecystitis.

Finding	(+) LR	(-) LR
History and physical exam		
Anorexia	1.1-1.7	0.5-0.9
Emesis	1.1-2.1	0.3-0.9
Fever (>35C)	1.0-2.3	0.8-1.0
Guarding	1.1-2.8	0.5-1.0
Murphy sign	0.8-8.6	0.2-1.0
Nausea	1.0-1.2	0.6-1.0
Rebound	0.6-1.7	0.8-1.4
Rectal tenderness	0.3-0.7	1.0-1.3
Rigidity	0.5-2.32	1.0-1.2
RUQ mass	0.5-1.2	0.9-1.1
RUQ pain	0.9-2.5	0.3-1.6
RUQ tenderness	1.0-2.5	0.2-1.1
Laboratory tests		
Alkaline phosphatase >120 U/L	0.4-1.6	0.6-2.0
ALT >40 U/L or AST >48 U/L	0.5-2.0	0.8-1.4
Total bilirubin >2mg/dL	0.7-2.3	0.7-1.2
<b>All 3 elevated:</b> Total bili, AST, alk phosphatase	1.0-2.8	0.8-0.9
<b>Any 1 elevated:</b> Total bili, AST, alk phosphatase	1.0-1.5	0.6-0.9
WBC >10K	1.2-1.9	0.5-1.8
WBC >10K and a fever (>35C)	0.9-2.8	0.8-1.0
WBC ≤ 10K and no fever (≤35C)	0.4-0.7	1.4-1.8

### Note:

- All likelihood ratios (LR) cross or almost cross 1.0.
- This is no history, physical exam, or lab test that would comfortably allow you to rule-out or rule-in cholecystitis.
- Murphy's sign is perhaps the most useful sign because the +LR has been shown to be as high as 8.6.

# Cholecystitis

## Management

- infection so if septic treat accordingly
- Iv abx (zosyn)
- Fluids
- NPO
- STAT surgery consult

# Pearls

- Have a high index of suspicion in old patients
- Every female under 50 with abd pain is ectopic until proven otherwise
- Remember ovarian, testicular torsion as alternate causes of RLQ pain
- The ultrasound is the test of choice to evaluate for AAA and cholecystitis
- All patients with suspected serious causes of abdominal pain will need imaging