Examination Of The Abdomen

POM – November 6, 2019
Charlie Goldberg, M.D.
cggoldberg@health.ucsd.edu
Abdominal Exam

• 4 Elements: **Observation, Auscultation, Percussion, Palpation**

• **Pelvic, male genital** & male/female **rectal** exams all critical parts of Abdomen exam → covered later in the year
GI Review of Systems

- [http://meded.ucsd.edu/clinicalmed/ros.htm](http://meded.ucsd.edu/clinicalmed/ros.htm)
Observation & Draping

• Exposure → Drape for success – expose what you need to see!
• Use sheet to cover lower half of body
• Good lighting, warm room, table flat, hands at side, head resting on table
• +/- Feet flat on table
Observation (cont)

• Make note of:
  • general shape
  • contours
  • symmetry
  • color
  • scars
• easiest to make observations from foot of bed.
• Examine from right side
Examples of Abnormal Findings On Observation

Obese

Ascites (fluid), Yellow

Enlarged gall bladder

Umbilical Hernia (Right with Valsalva)
Auscultation

- Normal **intestinal propulsion** of food (peristalsis) generates **noise** (*Borborygmi*)

- **Listen** (diaphragm of stethoscope) x 15-20 seconds in **4 quadrants**

- Pay attention to: **presence**, quantity (normal ~ 2-5 seconds), & **quality** of sounds
Auscultation (cont)

• Clinical utility:
  • Intestinal Obstruction: Increased frequency early ("rushes") → declines in quantity, increase pitch ("tinkles") → stop
  • After handled (surgery) → no function or noise (ileus) → w/normal recovery, noise returns
  • Infection of mucosa (gastroenteritis) → increased frequency

• No findings pathognomonic

• Auscultation not helpful in otherwise normal exam

• Clinical context most important
Auscultation (cont)

- **Bruit**: Sounds of *turbulent* arterial flow → **atherosclerosis**
- **Relevant if**: Unexplained hypertension, kidney disease, ischemic symptoms and risk factors
- **Listen over**:  
  - **Renal arteries**: several cm above umbilicus, either side rectus)  
  - **Central abdomen**: celiac, SMA, IMA  
  - **Iliac arteries**: below umbilicus
Percussion

• Same principle as Lung

• **Tapping** over **solid** or **liquid** filled structure →
  - dull tone; air filled → **tympanitic** (resonant)

• **Percussion** → **what’s** beneath
  - skin & bones – e.g: liver → dull; air filled
  - stomach → tympanitic

• Abdomen not designed w/1st yr students in mind!
  - Key **solid structures protected**:
    - liver & spleen by ribs; pancreas & kidneys deep in retro-peritoneum; bladder & uterus in pelvis
  - **Central abdomen** filled w/intestines: freely
    - moving → promotes peristalsis, tolerates direct trauma
Percussion Technique

- Stand on **Right**
- **Middle finger** of non-percussing hand firmly **against abdomen**
- Using **floppy wrist** action, hammer **middle finger** of other hand down, aiming for last joint
- Percuss all **4 quadrants** – normal =‘s mix of dull and tympanitic
Percussion Technique (cont)

• Liver span (6-12 cm): Start in chest, below nipple (mid-clavicular line) & move down – tone changes from resonant (lung) to dull (liver) to resonant (intestines)

• Spleen – small, located in hollow of ribs – percussion over last intercostal space, anterior axillary line should normally be resonant – dullness suggests splenomegaly

• Stomach – tympanitic
Percussion To Detect Ascites: Flank Dullness and Shifting Dullness

• Used to detect **large amounts** of pathological **fluid** (ascites)

• **Intestines** will **float** to surface

• Percussion can detect **air-fluid interface**

• **Flank Dullness alone:**
  - Sensitivity: 84%
  - Specificity: 59%

• **Shifting Dullness:**
  - Sensitivity: 77%
  - Specificity: 72%

Simel. Rational Clinical Exam 2009. 65-69
Palpation

- **Most important structures aren’t palpable**
- **Warm your hands**
- Generally **right hand** used (left placed on top or @ your side)
- **Palpate using pads & edges of middle 3 fingers**
- **Gentle pressure**, no sudden movements
- Think about **what “lives” in area you’re examining**
Palpation Technique

• First explore **superficial** aspect **each quadrant**
  (start R lower → R upper → L upper → L lower)

• **Deeper** palpation
  **Liver**
  • **Start R lower, moving up** towards R ribs
  • **Move** hands a **few cm** up w/each palpation
  • **Push down** (posterior) & then **towards head**
  • As approach ribs, **palpate while** patient **inspires** deeply (diaphragm brings liver down towards hand)
  • Might feel **liver edge** in normals (usually not)
Palpation Technique (cont)

• Deeper Palpation (cont)

**Spleen**
- Palpate towards **left upper quadrant** from midline & below - can use L hand to “pull” spleen towards you

**Aorta (if RFs for aneurysm: Age > 60, smoking)**
- Above umbilicus, left of **midline**
- Push down (deep) w/palpating hand

**Remainder of abdomen**
- **Uterus, bladder**, other (rarely palpable)

• Evaluate **painful areas last!**
Palpating to Detect fluid Wave (ascites)

• Examiner’s right hand on patient’s right
• Push quickly → initiate a “wave” w/in ascites
• Receiving hand on Left identifies the wave
• A third hand dampens passage of wave through sub-cu fat

**Sensitivity:** 62%
**Specificity:** 90%

Simel. Rational Clinical Exam 2009. 65-69
Palpation/Percussion Of The Kidneys

- **Kidneys** are retroperitoneal structures, deep & protected by the ribs → **rarely palpable**
- If markedly enlarged, may appreciate in lateral aspects abdomen (rare)
- Assess for tenderness via posterior approach, **tapping on back** at **Costo-Vertebral Angle** – if kidney infected (pyelonephritis), patient will have **Tenderness** (**CVAT**)
- **Not done routinely**: only in right clinical context
Put Findings Together ➔ Paint The Best Picture

Abdominal exam techniques compliment each other!

• **Ascites**
  • Observe distention, bulging flanks
  • Palpation ➔ no evidence of mass
  • Palpation ➔ + fluid wave

• **Enlarged liver** (hepatomegaly)
  • Percussion indicates extension of liver below diaphragm
  • Palpation confirms location of lower edge (also detects contour, texture)
Summary Of Skills

- Wash Hands
- Observe abdomen (shape, contours, scars, color, etc)
- Auscultate abdomen (bowel sounds, bruits)
- Percuss abdomen (general; then liver & spleen)
- Palpate 4 quadrants abdomen (superficial then deep)
- Assess for kidney area pain (CVAT)
- Wash Hands

Time Target: < 10 Minutes